

ABSTRACTS OF INDIVIDUAL PRESENTATIONS

Aaberg, Steve [113] see *Alegria, Crystal B.*

Abbott, David (Arizona State University), Sophia Kelly (Arizona State University), Andrew Lack (Arizona State University) and Margaret Beck (University of Iowa)

[187] *The Provenance of Patayan Pottery from the Patayan Enclave at Las Colinas*

Numerous Patayan ceramics in a full suite of vessel forms suggest the presence of a Patayan enclave at the prehistoric Hohokam village of Las Colinas in the Phoenix basin of Arizona. We investigate if the Patayan pottery was locally made by chemically assaying temper particles of phyllite with an electron microprobe and comparing them to the chemical signatures of bedrock phyllite from the flank of the nearby Phoenix Mountains. Our findings demonstrate unambiguous differences between the temper fragments and the raw Phoenix Mountains samples, suggesting that the Patayan pottery was not made at Las Colinas.

[52] *Discussant*

Abbott, David [187] see *Lack, Andrew*

Abe, Hillary (Robert S. Peabody Museum - Phillips Academy) and Forrest Cox (Phillips Academy)

[196] *Can an Elite High School and a North American Archaeological Museum Succeed in Giving Back to Indian Country*

In this paper the trials, pitfalls and successes of matriculating Native students into an independent residential high school are presented. What do schools and archaeological museums have to offer contemporary Native students and how do they position themselves to deliver those needs? Can museums play a role in helping these students adjust to their milieu and to help educate the broader school community on current Native issues? Attempts to partner with Native students and their communities to fashion new avenues of cross-cultural dialogue between museums, indigenous peoples, and the community at-large are discussed.

Aben, Kathrina (Howard University)

[138] *Comparison of Miner Encampments in the Black Range Mountains, New Mexico*

In the late 1800's, the community of Hermosa in the Black Range of New Mexico, centered its economic stability around silver mining. This poster will explore the purpose of two sites found in the area related to mining occupation: a single-room structure situated on a flat area next to Palomas Creek, and a wall fortification built on top of a hill facing the town. A cross-comparison and analysis of artifacts, oral history and architectural remains will help determine the function of each area and flesh out the identities of the individuals whose occupation was so principal to the region.

Abraham, Sarah (University of California, Santa Barbara) and Aileen Balasalle

[208] *The Architecture of La Quinta: Interpreting Colonial Strategies of Conquest and Conversion at Pukara, Peru.* The results of architectural study of La Quinta, a colonial chapel built on the archaeological site of Pukara, Peru,

are presented. La Quinta predates the construction of the town's church in A.D. 1610 and is architecturally distinct from other colonial buildings in the region. Along with Spanish architectural attributes, analysis identified Inca elements, including portions of a building incorporated into the chapel. This fusion may reflect imperial conquest strategies, including the cooption of important places and syncretism. Lastly, the study places La Quinta within the context of the extensive history of reoccupation and modification at this prominent site.

Abraham, Shinu (St. Lawrence University), P. J. Cherian (Kerala Council for Historical Research) and Heather Christie (St. Lawrence University)

[100] *Pattanam/Muziris: The Glass Bead Corpus from an Indian Ocean Port Site on the Malabar Coast of Kerala, India*

Recent excavations at Pattanam on the southwestern Indian coast have yielded a variety of artifacts attesting to robust participation in early and medieval Indian Ocean exchange networks. These artifacts include glass beads from nearly all occupation levels. I will report on the beads from the 2007/2008 excavation seasons, comprising about 4000 of the total 20,000 recovered to date. As one of the few south Indian sites providing stratigraphic context for this artifact category, the Pattanam beads present a unique opportunity to investigate this port site as a node linking local production processes with inter-regional transoceanic systems.

[100] *Second Chair [100] Second Organizer*

Ackerly, Neal (Dos Rios Consultants, Inc.)

[199] *A River In Need of Irrigation: Searching for Prehistoric Irrigation Systems Along the Rio Grande Main Stem*

One puzzlement in southern New Mexico prehistory is the relative dearth of evidence regarding prehistoric irrigation along the Rio Grande main stem. This is particularly true of the segment extending south between San Marcial and El Paso. Today, vast floodplains are cultivated to their limits, yet evidence of prehistoric irrigation systems in these same geographies is sorely wanting. Anecdotal accounts, early maps, and other documentary sources are discussed that may provide insights into what kinds of irrigation systems may be present, why they may be difficult to find, and where along this segment archeological investigations may be most productive.

Adams, Andrea [161] see *McMahon, Catherine*

Adams, Christopher (Gila National Forest) and Joe Encinas (Gila National Forest)

[138] *Archaeological Investigations of the Victorio Campaign: New Insights on the May 24-25, 1880 Palomas Fight, New Mexico Territory*

For the last three years the Gila National Forest Heritage Program and the Gila Archaeological Project have been conducting archaeological investigations at the Palomas Fight. This fight represents the only time Victorio (Warm Springs Apaches) was defeated on the Black Range and it was not at the hands of the military, but by Henry Parker, Chief of Scouts and sixty Western Apache

Scouts. This poster will highlight some of the archaeological techniques, forensic studies and new GIS technologies that were used at the Palomas Fight.

Adams, E. Charles [136] *see Hedquist, Saul L.*

Adams, Jacob (University of Montana) and Douglas MacDonald (University of Montana)

[160] *Differential Selection of Lithic Raw Materials by Prehistoric Hunter-Gatherers in the Upper Yellowstone River Valley, Montana/Wyoming*

The Upper Yellowstone River Valley of Montana/Wyoming in Yellowstone National Park provides an excellent case study by which to evaluate direct versus embedded stone procurement strategies during prehistory. Two lithic raw material sources—Obsidian Cliff obsidian and Crescent Hill chert—are located equidistant from archaeological sites in the study area, but were differentially utilized during the Holocene. Attributes such as stone morphology, quality, and availability, not to mention individual/cultural influences, contributed to the variable procurement, use, and discard of stone by hunter-gatherers at sites in the region.

Adams, Jeffrey (Interior West Consulting), John Kennedy (SWCA Environmental Consultants) and Mark Lowe (Interior West Consulting)

[179] *Archaeological investigations along the terraces of the Upper Green River, Wyoming*

The study included a 365-acre area along T1-T3 terraces of the Upper Green River at the BLM Warren Bridge Public Access Area, Sublette County, Wyoming. The investigations included pedestrian survey (15 meter intervals), broadcast shovel probe surveys (419 probes at 19 locations), excavation of 5 test units, and excavation of 3 thermal features. A total of 15 prehistoric archaeological sites (14 with subsurface deposits) and 9 isolated finds were documented. Sites contained lithic debitage and tools, projectile points, ceramics, faunal remains, fire-altered rock, and rock-filled roasting pits. Radiometric dates were obtained from features at 3 sites.

Adams, Jenny (Desert Archaeology, Inc.)

[59] *Use-Wear on Surfaces – Stepping Away from the Edge*

Recent applications of experimental and microscopic research techniques to the study of stone tool surfaces have broadened the recognition of use-wear patterns. Building on the research of tribologists who study wear in order to prevent it, wear mechanisms have been identified that are distinctive to the relative nature of contacts between two surfaces in addition to the nature of substances worked between contacting surfaces. Wear mechanisms encompass surface fatigue, adhesion, abrasion, and tribochemical interactions that are continuously in play, so that what we see depends on when this process was interrupted.

Adams, Jenny [22] *see Burton, Margie*

Adams, Karen R. (Crow Canyon Archaeological Center)

[199] *The Archaeobotany and Agronomy of Ancient Maize: We're Still Learning*

Understanding the introduction and movements of maize (*Zea mays*) landraces in the ancient American Southwest

would offer insight into the history and interactions of human groups. Many historic maize landraces are morphologically distinguishable. However, most archaeological maize has preserved in charred and fragmented condition, and modern charring/breakage experiments suggest chances for determining ancient landraces are diminished. For modeling maize productivity, controlled grow-outs of indigenous SW US maize landraces indicate relevance of environmental variables (precipitation timing, cumulative growing season heat units, effects of cold air drainage) not routinely considered by archaeologists.

[20] *see Smith, Susan*; **[188]** *see Paterson, Judy M.*;

[199] *see Hard, Robert J.*; **[244]** *see MacWilliams, Arthur C.*

Adams, Richard [101] *see Schroeder, Bryon A.*

Adams, Ron (AINW)

[160] *Columbia Hills Toolstone Quarrying*

Archaeological investigations in the Columbia Hills of south-central Washington have revealed myriad sources of cryptocrystalline silicate toolstone material. Densely clustered prehistoric cryptocrystalline silicate quarries and smaller lithic procurement sites are scattered across the crest of the hills. The lithic material found at these procurement locales is of exceptional quality and ideal for tool making. Prehistorically, this toolstone resource was dug from mining pits and reduced from large boulders that scatter the surface. This paper explores toolstone procurement strategies of the Columbia Hills and their significance in relation to prehistoric village sites of the area and the larger regional lithic landscape.

[160] *Second Chair*

Adderley, Paul (University of Stirling) [249]

Discussant

Adler, Daniel (University of Connecticut), R. Pinhasi (University College Cork, Ireland), B. Yeritsyan (Institute of Archaeology and Ethnography, Armenia), Boris Gasparian (Institute of Archaeology and Ethnography, Armenia) and K. Wilkinson (Winchester University, UK)

[114] *Current Palaeolithic research at Nor Geghi 1 and Lusakert Cave 1, Armenia*

Current Palaeolithic research in the Southern Caucasus, specifically Armenia, is beginning to yield new insights into the Pleistocene occupation of the region. Two Armenian sites, Nor Geghi 1 and Lusakert Cave 1, span the late Middle and Upper Pleistocene, and document intriguing patterns of lithic procurement/production and foraging. This paper will present preliminary data gathered during recent excavations (2008–2010) followed by a brief comparison with sites located in neighboring regions.

Adler, Michael (Southern Methodist University)

[199] *What we don't know about canal irrigation in the Prehispanic Northern Southwest*

Prehispanic canal irrigation is archaeologically well documented in the Sonoran desert regions of the American Southwest, but the same is not the case in the northern Southwest. This paper investigates evidence (and lack thereof) for prehispanic canal irrigation across the northern Southwest, particularly the northern Rio

Grande region. Challenges to our present knowledge of the spatial and temporal extent of canal irrigation in this region include limited contact period accounts, a dearth of archaeological investigations of purported canals, dating of archaeological deposits, and historic land modifications by later occupants of the region.

Adolph, Arthur [176] *see Billy, Nora*

Adovasio, James (Mercyhurst Archaeological Institute) and C. Andrew Hemmings (Mercyhurst Archaeological Institute/Mercyhurst College)
[265] *Inundated Landscapes and the Colonization of the Northeastern Gulf of Mexico*
 The initial colonization of the Americas probably occurred somewhere on the edge of the now-submerged Inner Continental Shelf. Continued research at inundated locations in the northeastern Gulf of Mexico is facilitating the reconstruction of a portion of this ancient landform. Extensive Paleo-river drainages, interfluvial ridges, and chert-bearing limestone exposures have been identified at multiple loci. Based on terrestrial analogues, those features could have influenced human and animal movements to and from the ever encroaching sea at the end of the Pleistocene. Findings are summarized and suggestions are offered to verify an early human presence on this shrinking Pleistocene landscape.

Adovasio, James [196] *see Richardson, James B.*

Adriano-Morán, Carmen Cristina [25] *see McClung De Tapia, Emily S.*

Afonso, Marisa
[253] *Archaeological approaches to ritual in Southeastern Brazil: shell mounds and Tupi Guarani sites*
 Ritual analysis still poses challenges to archaeologists. This paper intends to discuss the role of shell and lithic artefacts as archaeological evidences of rituals in shell mounds and also the role of ceramic vessels associated with funerary functions located in Tupi Guarani sites in Southeastern Brazil, specifically from archaeological investigations conducted in the State of São Paulo. Shell mounds and ceramic sites present very different archaeological and funerary contexts. Ethnoarchaeological studies may help understanding funerary rituals in Tupi Guarani sites, even though shell mound building communities were no longer active at the time European colonizers arrived in Brazil.

Agarwal, Sabrina (UC Berkeley)
[16] *The Sex and Gender of Aging in Bioarchaeology*
 This paper examines how the fundamental use of biological sex and age determination in skeletal remains affects and can limit our analyses of bioarchaeological data and the questions that we ask, particularly in the study of gender in health and aging in the past. Using empirical data on patterns bone loss in aging in historical populations, I suggest that the division of populations into categories by sex and age may well obscure the biocultural influences that have been embodied in the skeleton over the life course, and cut across populations in different and revealing ways.
[16] *First Chair*

Agha, Andrew (Brockington and Associates), Inna Moore (Brockington and Associates) and Damon Jackson (Brockington and Associates)
[81] *ARRA Archaeology in the Ozarks: Section 110 Survey for the Little Rock District, USACE*
 Archaeological survey of select parcels within the Army Corps of Engineers Little Rock, Arkansas District discovered 34 sites and located 3 previously identified sites. The work was conducted on Beaver Lake in the Ozark Mountains, near Nimrod Lake in the northern Ouachita Mountains, and near Millwood Lake in the Red River Valley region. Some of these Prehistoric sites are large and produced several hundred artifacts, helping us understand more about Arkansas' prehistory and past land use. This work was conducted as part of the American Recovery and Reinvestment Act instilled by Congress in 2009.

Agostini, Mark [62] *see Van Keuren, Scott*

Ahlman, Todd (Historical Research Associates, Inc.), Gerald Schroedl (University of Tennessee), Barbara Heath (University of Tennessee), Grant Gilmore (St. Eustatius Center for Archaeological Research) and Jeffrey Ferguson (University of Missouri Research Reactor)
[121] *An examination of inter- and intra-island trade of Afro-Caribbean ware in the Lesser Antilles*
 Recently, 168 Afro-Caribbean ware sherds and 10 clay samples from 19 sites on 7 islands were submitted to the University of Missouri Research Reactor for analysis by Instrumental Neutron Activation Analysis (INAA). The research goals include the examination of inter- and intra-island trade among free and enslaved Africans. The results suggest evidence for inter-island, but are ambiguous in regard to trade networks. The data show local variation in the islands' markets as many different paste recipes are represented in the St. Eustatius Afro-Caribbean ware, but there are fewer paste recipes in the St. Kitts and Nevis Afro-Caribbean ware.

Ahlman, Todd [121] *see Braly, Bobby R.*

Ahlstrom, Richard (HRA, Inc. Conservation Archaeology)
[99] *Temporal and Spatial Scales of Analysis in Puebloan Dendroarchaeology*
 Dendrochronological evidence is not distributed evenly over systemic and archaeological contexts, but clusters within realms involving specific categories of material culture. A realm central to Jeffrey Dean's dendroarchaeological research concerns southwest puebloan architecture. The scope of puebloan dendroarchaeology is a function of puebloan wood-use, datability of exploited tree species, preservation of tree-ring materials, and patterns of archaeological fieldwork. The quality of the sample of tree-ring-dated events varies by scale of analysis. Relevant temporal scales include tree-ring seasons and years as well as multi-year units. Dendroarchaeology contributes to puebloan spatial analysis at the levels of behavioral, geographic, and social space.

Ahrens, Corrie (Colorado State University) and Christopher T. Fisher (Colorado State University)
[58] *Food Storage at Sacapu Angamucú*

Food storage has long been seen as an important aspect of economic and socio-political relationships in Mesoamerica. Evidence for potential storage structures has been identified at the site of Sacapu Angamuc, located in the Lake Pátzcuaro Basin, Michoacán, Mexico. Here I examine the spatial distribution of these granaries to provide insights into economic relationships, socio-political differentiation, and site function during the Postclassic period (A.D. 1000-1520).

Aikens, Clyde (University of Oregon)

[94] *Introducing Don Fowler*

Introducing Don Fowler By C. Melvin Aikens Don Fowler has finally become older than dirt, not considered a bad thing by people such as we here today, some having grown old in the profession of archaeology, others still trudging toward that goal, and some perhaps starting to wonder if they really want to. On this occasion we celebrate Don's long and productive history of accomplishment in our chosen field, and my purpose today is to briefly sketch his trajectory as a scholar, which began more than a half-century ago in Ogden, Utah.

Aimers, Jim (SUNY Geneseo) and Helen Haines (Trent University)

[243] *The Pottery of Ka'Kabish, Belize*

In this paper we report on pottery from the site core of Ka'Kabish, Belize excavated during the summer of 2009. Given the proximity of Ka'Kabish to the site of Lamanai (about 10 km), which is well-known for its substantial Postclassic period occupation, we had expected to find substantial quantities of Postclassic period pottery. Instead, almost the entire pottery sample consisted of types associated with the Late Preclassic and Early Classic periods in the Maya lowlands. We describe the key types uncovered in 2009 and we speculate on their significance in terms of chronology and the regional role of Ka'Kabish.

[243] *First Chair*

Aimers, Jim [190] see *Murata, Satoru*

Ainis, Amira (California State University, Los Angeles) and Renè Vellanoweth (California State University, Los Angeles)

[263] *Historical Ecology of Bay Point, San Miguel Island: 6,000 Years of Intertidal Shellfish and Human Dynamics* Shellfish remains from Cave of the Chimneys (CA-SMI-603) a stratigraphically intact, extremely well-preserved site located on the northeast coast of the island provides an ideal opportunity to examine long term dynamics between humans and intertidal shellfish communities. Our results suggest fluctuating patterns of resource depressions and rebounds, foraging efficiency, and subsistence intensification and diversification through time. Trans-Holocene patterns also show decreases in shell size, increases in foraging catchments, and decreases in shellfish use relative to marine vertebrates. This research contributes to our understanding of the historical ecology of Bay Point and the evolution of subsistence economies on the Channel Islands.

[263] *First Chair*

Aiuvalasit, Michael [80] see *Schuldenrein, Joseph*

Akins, Nancy (Office of Archaeological Studies,

Museum of NM)

[143] *Exploring Mortuary Variability in the Northern Rio Grande*

Much of the data on Northern Rio Grande mortuary practices is presented as summaries without regards to age or sex and without definitions of the terms used to describe basic treatment. To manage and compare burial practices from projects in the Tewa and Galisteo Basins, a data base was created that could summarize demography, grave location and characteristics, body position, and grave goods as well as explore patterns within and between sites. A regional data base would not only allow us to examine a wide range of questions but would improve our reporting and recording of burial encountered in the future.

[237] see *Toll, H. Wolcott*

Akoshima, Kaoru (Tohoku University)

[149] *The Tagajo Fort Site and frontier processes in northeastern Japan during the eighth century A.D.*

The paper examines socio-cultural processes in northern border regions of the Ritsuryo State of Japan. I introduce the results of fifty years long research, mainly conducted by the Tagajo Fort Site Research Institute of Miyagi Prefecture. Accumulated data revealed details of the fort structure, spatial differentiation, and renovation of buildings. Its geographical location confronting the northern Emishi tribal territory doomed the site both political and military roles integrated as the frontier fort. State-controlled production is represented in abundant roof tile kiln sites. Regional differences within the Mutsu Province between north and south are discussed in historical and "peripheral" perspectives.

Albarracin-Jordan, Juan [231] see *Capriles, José M.*

Alconini, Sonia (University of Texas At San Antonio) and Sara K. Becker (University of North Carolina, Chapel Hill)

[245] *Trophy Head Taking in the Eastern Tiwanaku Peripheries: The Site of Wata Wata in the Charazani Valley, Bolivia*

The taking of trophy heads is not a new concept among precontact peoples in Andean South America. However among Tiwanaku skeletal collections, physical evidence of human crania being processed is a rare phenomenon. This paper reports on three crania found in ritual context at the Wata Wata site in Charazani, Bolivia. The skeletal remains show evidence of trauma consistent with sacrifice including decapitation, cut marks, bone breakage, and possible eye removal. These data provide new information concerning the nature of violence, ritual, and social interactions that Tiwanaku maintained with the eastern, Charazani populations during the Formative to Tiwanaku-era transition.

Alconini, Sonia [106] see *Hanson, Thomas*

Aldenderfer, Mark (University of California)

[23] *Recent archaeological research on the Tibetan plateau*

Recent research on the Tibetan plateau has shed new light on the nature of interaction of plateau peoples with their neighbors in the surrounding lowlands. In this presentation, I will summarize the results of archaeological, genetic, bioarchaeological, and linguistic

data on this process.
[57] *Discussant*

Alegria, Crystal (Project Archaeology), Shane Doyle (Montana State University), Steve Platt (Montana Department of Transportation), Steve Aaberg (Aaberg Cultural Resource Consulting) and Jeanne Moe (Bureau of Land Management)
[113] *Baa Xiiash A Lee Kio: A Collaborative Archaeology Education Project*

Test excavations at the Absaroka Agency, a former Crow Indian Agency located near Absaroka, MT provided an opportunity to develop educational materials. These materials use archaeology to teach Montana students historical and scientific inquiry with authentic archaeological data. Crow tribal members, educators and archaeologists collaborated to develop the educational materials with Crow community members providing the enduring understandings, or main concepts, for the materials. This paper will discuss the learning outcomes of the Crow students who piloted the materials, and the connections they make between the archaeological record and their own lives.

Alexander, Elise (AMNH and CUNY Graduate Center)
[131] *Postclassic Jalieza: a hillside settlement in the Valley of Oaxaca, Mexico*

This report presents preliminary results from a program of systematic survey, including topographic mapping and controlled, intensive surface collecting, at the Postclassic component of Jalieza. This single phase settlement was inhabited after the decline of the Monte Alban-based Zapotec state, but before the Late Postclassic cacicazgos documented in the codices, thus offering a useful window into an understudied time period. The research design focuses primarily on household composition and site layout. A preliminary assessment of the ceramic assemblage explores features that may help define an early Period VI/Liobaa occupation, further refining the ceramic sequence for the Valley of Oaxaca.

Alexander, Rani (New Mexico State University) [200]
First Chair

Alexander, Rani [200] *see Kepecs, Susan*

Alix, Claire (CNRS UMR9096 / Université de Paris 1 Sorbonne), Nancy Bigelow (University of Alaska Fairbanks) and Laura Crawford (University of Alaska Fairbanks)

[159] *The importance of wood for Thule settlement at Cape Espenberg, Northwest Alaska*

As in many western Arctic sites, wood remains are abundant at the large Thule settlement of Cape Espenberg. Structural elements, artifacts and charcoal are found in all four houses excavated by a multidisciplinary research team since 2009. In this paper, we present preliminary results of a multi-tiered approach to analyze the availability and use of wood at the various times the houses were occupied between AD 1100-1700. Systematic analysis of archaeological remains coupled with tree-ring analysis of modern and sub-modern driftwood are performed to explore the relationship (if any) between climate, wood availability, settlement patterns and construction practices.

Alix, Claire [25] *see Elliott, Michelle [25]* *see Crawford, Laura J.; [25]* *First Chair [25]* *Second Organizer*

Allen, Casey [134] *see Cervený, Niccole V.*

Allen, Jennie [105] *see Whistler, Emily L.*

Allen, Josh (University of Idaho) and Jamie Capawana (University of Idaho)

[175] *Excavating Inequality: The Archaeology of World War II Japanese Internment in Northern Idaho (1943-1945)*

On February 19, 1942, over 120,000 individuals of Japanese heritage were forced to leave the comfort and solace of their homes and communities and relocate to internment camps spread throughout some of the harshest locales in the Western United States. Over the past fifteen years, archaeologists have excavated internment camps to help draw attention to the history of the United States' imprisonment of Japanese Americans. This paper outlines archaeological studies and public outreach taking place at Northern Idaho's Kooskia Internment Camp and considers how this research can contribute to historical and archaeological knowledge of the broader internee experience.

Allen, Kathleen M. (University of Pittsburgh), and Sandra Katz (University of Pittsburgh)

[55] *Iroquoian Settlements in Central New York State in the Sixteenth Century: A Case Study of Intra- and Inter-site Diversity*

Iroquoian settlement studies have shifted away from normative views of similar large villages on the landscape to more dynamic approaches that focus attention on the diversity of site types present. Large villages, hamlets, camps, and a multitude of special purpose sites have been identified. Comparisons between these sites have led to greater understanding of the range of activities carried out at any one time and the ways in which Iroquoian populations responded to challenges in the political, social and physical environment. Investigations at two settlements in the Allegheny Uplands of central New York have focused on recovering settlement pattern information. Comparisons of site sizes, structure diversity, and the types and amounts of cultural material show patterning supporting variability both within and between the sites in the intensity of occupation and the emphasis on specific activities. The implications of this research for understanding settlement variability and improving data recovery techniques to allow for more detailed comparative studies are discussed.

Allen, Kathleen [164] *see Katz, Sandra*

Allen, Mark (California State Polytechnic University, Pomona)

[48] *California: A Land of Violence*

Archaeologists now commonly consider the role of warfare in the past, with the notable exception of less complex hunter-gatherer societies. Lacking fortifications, mass casualties in cemeteries, or specialized weapons, they are often assumed to have been essentially peaceful. California demonstrates this tendency well. There have been numerous investigations of warfare in cultures characterized by sedentism, hierarchy, and other

rappings of complexity; but few examples from other geographic areas or earlier periods. Nonetheless, there is evidence for a wide range of violence and war throughout California's pre-European past. This diverse land of plenty was nevertheless very much a land of violence.

Allen, Melinda (University of Auckland) [261]
Discussant

Allen, Susan (University of Cincinnati) and Gjipali Ilirian (Centre for Albanological Studies, Albania)
[169] *Wetlands and the Transition to Agriculture in Europe: The 2010 Southern Albania Neolithic Archaeological Project (SANAP) Excavation at Vashtëmi, Albania*

The Southern Albania Neolithic Archaeological Project's (SANAP) 2010 excavation at the site of Vashtëmi, Albania sheds light on the transition to agriculture in southern Europe. The first systematically recovered assemblages of plant and animal remains from an open-air Early Neolithic (EN) site in Albania provide the first glimpse of the environmental conditions that early farmers had to negotiate in this former wetland setting and the choices in land management that they made. Radiocarbon dates from the site place its earliest occupation in the mid-seventh millennium B.C., contemporary with EN sites in Greece, to its south.

Almer, Jon [220] *see Friedman, Elizabeth S.*

Alonso, Alejandra [221] *see Ardren, Traci*

Alonzi, Elise (University of Notre Dame), Mark Schurr (University of Notre Dame), Cheryl Ann Munson (Indiana University) and Susan Spencer (Indiana University)

[35] *Stable Carbon-Isotopes and Maize Consumption in Caborn-Welborn Villages*

The Caborn-Welborn phase in southwestern Indiana encompasses a protohistoric culture likely arising after collapse of the Angel Chiefdom around A.D. 1500. Caborn-Welborn sites were arranged in a hierarchy from large villages, to small villages, through hamlets and to farmsteads. Studies of human carbon stable isotope ratios from the Slack Farm site, a large Caborn-Welborn village, indicate that maize consumption was highly variable at this large site. Stable carbon -isotope ratios from human burials from the villages of Hovey Lake and Murphy are used to assess intra- and inter-community dietary variation within the Caborn-Welborn phase.

Alt, Susan (Indiana University Bloomington)

[229] *Persons, Places, Things: Hybrid Moments and the Processes of Change*

Culture contact studies usually focus on dramatic situations such as conquest and colonization. Such studies have driven the development of diverse theoretical tools. But, as I will argue, the same processes entailed in dramatic contact situations are present in less fraught encounters, and operate even under less dramatic circumstances. Using examples from the Cahokia region I will discuss the utility of deploying insights from culture contact studies in explicating social and political change when contact relates to migration. I also suggest that encounters with difference are not

limited to persons; things and places can engender the same kinds of processes.

Altschul, Jeffrey (Statistical Research, Inc./SRI Foundation), Richard Ciolek-Torrello (Statistical Research, Inc.) and Donn Grenda (Statistical Research, Inc.)

[151] *Long Term Research in the Ballona Wetlands of west Los Angeles, California*

Since 1989, the historic Ballona Lagoon in and around Marina del Rey, California has been the focus of intense archaeological, paleoenvironmental, ethnohistorical, and historical research. Various compliance-driven projects have been performed under a research design umbrella that focused on human adaptation to a dynamic coastal wetland environment. This paper outlines the research design and highlights the salient results of the project.

[118] *Discussant*

Alvarado, Jennifer [111] *see VanDerwerker, Amber M.*

Alvarez, Damian (INAH-Teotihuacan), Cristina Desentis (Universidad de las Américas, Puebla) and Yuko Koga (Aichi Prefectural University)

[224] *Social Behaviors related to the Archaeological Identification of Metate-production from the Quarry to the Domestic Workshop: An Ethnoarchaeological Study from Puebla, Mexico*

The identification of different kinds of workshops has revealed a great potential for addressing issues on economic and social organization at different levels of analysis. Nevertheless, the recognition of the reduction sequence at both quarries and domestic workshops of ground-stone implements (such as metates) has received little attention. Here we present some of the social behaviors that affect the formation processes and hence the identification of these activities, based on an ethnoarchaeological research in Puebla, Mexico.

Alvarez, María [177] *see Gutierrez, Maria A.*

Amadio, Ayla (Southern Illinois University-Carbondale) and Meadow Campbell (Southern Illinois University-Carbondale)

[206] *Formative Mesoamerican Canines: Companions, Spirit guides, and Ritual Animals*

The presence of purposefully domesticated dogs within archaeological assemblages throughout Mesoamerica highlights their long-held cultural significance. The adaptability of dogs may have contributed to the influence and use of this animal in various activities. Furthermore, the presence of dog iconography and ceramic figurines highlights the multi-dimensional importance of this species in daily and ritual activity. An examination of the morphological and physiological variation in three types of dogs is analyzed to determine their impact within Formative Mesoamerica. Results from this study contribute to an emerging pattern in human-animal relationships throughout Mesoamerica.

Amador, Julio (UNAM)

[60] *Spaces, themes and cultural functions within a rock-art site: La Proveedora in the Sonoran Desert*

Rock art sites often have a complex internal structure reflecting different cultural functions. This paper seeks to identify, inside the main Trincheras rock art site of

northwestern Sonora, namely La Proveedora-Cerro San José, the association between different figures and themes, each depicted in well defined spaces, and the different functions assigned to those spaces. Several differentiated spaces within the site are analyzed. The analysis provides evidence for spatial structure. Supported spatial and iconographic functions include the performance of magic, warrior purification rituals, food processing-fertility ritual propitiation, collective ritual activities, and astronomic observations.

Ambro, Richard D. [230] *see Wells, Helen*

Ambrose, Stanley (U. Illinois, Urbana-Champaign), Marina Drigo (University of Illinois), Polly Weissner (University of Utah) and Philip Slater (University of Utah)

[12] *Kalahari San ostrich eggshell stable isotope analysis: implications for reconstructing prehistoric exchange systems*

Ostrich eggshell beadwork was the most common gift among Kalahari San foragers. Reciprocal gift-giving (xaro) networks among the !Kung spanned up to 200 km, opening rights of access to distant territories, thereby reducing risk in unpredictable environments. Carbon, oxygen and strontium isotope analysis of San beads from five regions were conducted to evaluate the potential of this technique for testing hypotheses of differences in prehistoric exchange network sizes in risky Pleistocene versus stable Holocene environments. Our results show that strontium isotope differ between regions and sometimes within necklaces. Carbon and oxygen isotopes distinguish beads made from different eggshells within regions.

Ameri, Marta (Fashion Institute of Technology)

[47] *Seals, Sealing and Regional Identity in the Harappan World*

The study of Harappan seals has long focused on their role as supports for the Indus script or on the possible mythological scenes depicted on a few of the extant artifacts. The function of the seals as administrative objects and as markers of identity has until recently received less attention. Accordingly, this paper utilizes the art historical methodologies long used in the study of Ancient Near Eastern glyptic to examine the stylistic and iconographic attributes of seals from geographically distant sites in the Indus, analyzing the ways in which seals functioned as markers of both personal and regional identity.

[47] *Discussant*

Ames, Kenneth (Portland State University) [232]
Discussant

Amore, Maria Grazia [27] *see Galaty, Michael L.*

Anders, Jake (University of Alaska-Anchorage)

[27] *Rethinking upland "Places" in Aleutian Archaeology*
Recent research conducted on archaeological sites in upland areas of Adak Island provides a new avenue for discussion about the pre-contact people of the Aleutian Islands. Past interpretations of Unangan populations were based on settlement models placing the greatest value on coastal habitations and almost no importance on upland areas, implicitly finding them devoid of

meaning. The presence of upland concentrations of substantial cultural depressions establishes that areas away from large coastal habitations are significant. These upland sites force us to reconsider our interpretations of how "place" was conceived by the pre-contact inhabitants of Adak Island.

Anderson, Cheryl (University of Nevada, Las Vegas), Debra Martin (University of Nevada, Las Vegas) and Jennifer Thompson (University of Nevada, Las Vegas)

[235] *Taphonomy and Cremation of Human Remains from San Francisco de Borja*

San Francisco de Borja is a cave-shelter burial site located in Chihuahua, Mexico, that was excavated in the 1950s by Richard and Sheilagh Brooks and is now curated at UNLV. Human remains collected from this cave site include male, female and juvenile individuals dating from the historic-contact period. This project documents and analyzes the wide range of taphonomic processes that have affected these remains. These processes include perimortem chop marks, surface bleaching and burning. Based on these observations, violence and partial cremation of some individuals is suggested.

Anderson, David (Tulane University)

[14] *Cultural Identity Issues: Life in the Preclassic Northern Maya Lowlands*

The recent boom in known Preclassic sites in the Northern Maya Lowlands has raised questions about many aspects of Maya cultural development, including the relationship between the North and the Southern Maya "heartland." We need to ask how these Northerners viewed themselves and their relationship with the heartland. Did the Northern Maya see themselves as peers to the Southerners? Did they view the South as a role model, or as an annoyingly more successful sibling? Using newly reported data from across the region, these identity issues will be explored in an attempt to understand and contextualize Northern Maya Preclassic culture.

Anderson, David (University of Tennessee) [84]
Discussant

Anderson, David G. [216] *see Yerka, Stephen J.*

Anderson, Derek (SCIAA and the University of Arizona), D. Shane Miller (University of Arizona) and William Haas (University of Arizona)

[155] *Reconceptualizing Clovis Mobility: Sites and Projectile Point Distributions in North America*

Archaeologists typically conceptualize prehistoric populations along a theoretical continuum between extremes of sedentism and mobility. We use the concept of spatial autocorrelation to re-conceptualize residential mobility along a tripartite gradient ranging between clustered, random, and dispersed. This slight modification allows us to interpret spatial and temporal variation in Clovis artifact distributions from the Paleoindian Database of the Americas (PIDBA). We find that the rank-size plots of projectile point counts by county tend to follow Zipf distributions, but variation in the exponents (log-log slopes) suggest varying degrees of mobility across time and space.

Anderson, Kirk (Museum of Northern Arizona, Flagstaff) and Ted Neff (Museum of Northern Arizona)

[20] *"Out of site" formation processes, geoarchaeology, and the archaeological record of Grand Canyon, Arizona*
Recent NPS/MNA sponsored excavations in Grand Canyon integrate site formation processes into archaeological interpretations of past human behavior. Investigations of natural "site formation processes" (paleofloods, distal debris fan activity, colluviation, ponding, eolian activity) properly re-focuses geomorphic research onto sites and the surrounding landscape, allowing researchers to arrive at reasonable interpretations of cultural history and landscape changes interpreted through the filter of geoarchaeology. New data and interpretations include paleoflood influences on Pueblo II settlement patterns, use of original layout of exhumed agricultural hamlets to evaluate loss to erosion, and Holocene chronostratigraphy to reconstruct landscapes during early farmstead habitations.

Anderson, Kirk [99] *see Elson, Mark D.*

Anderson, Lars E. [17] *see Lemke, Ashley K.*

Anderson, Meredith [259] *see Thomas, Ben S.*

Anderson, Patricia (CNRS, Nice, France) [59]
Discussant

Anderson, Shelby (University of Washington), Adam Freeburg (University of Washington) and James Jordan (Antioch University New England)
[263] *Understanding 5,000 years of Human-Environmental Dynamics at Cape Krusenstern, Alaska*
The Cape Krusenstern beach ridge complex of northwest Alaska is a unique landscape ideally suited for study of human-environmental dynamics during the last 5,000 years. Environmental changes and cycles of coastal storminess are recorded across the 3,642 hectare ridge complex, which preserves the most extensive evidence of Late Holocene coastal occupation in the North American Arctic. Paleoenvironmental fluctuations altered resource availability and habitability of this landscape by coastal peoples who adapted in part through changes in settlement, subsistence and technology. Study of high resolution paleoenvironmental and archaeological records at Cape Krusenstern informs explanations of maritime hunter-gatherer evolution in the North and beyond.

Anderson, Shelby [159] *see Freeburg, Adam K.*

Andersson, Anna-Karin

[195] *The archaeology of 19th century— is it worth the effort?*

In Sweden there is increasing interest in the archaeology of 19th century crofts. However, since most archaeologists are convinced that necessary facts can be gained from historical documents, they are not inclined to excavate. Ignoring the role of archaeology in the study of 19th century remains will however influence what stories of the past that are told today and will be told tomorrow. That raises questions of which type of the cultural heritage that should be preserved and who are to decide.

Indeed, those kinds of decisions will influence both the society and individuals and needs to be addressed.

Andolina, Darren (University of California, Davis) and Rebecca Gilbert (University of California, Davis)

[57] *Steatite Sourcing: Results from Multiple Source Locations in California*

Historically steatite has proven a difficult material to geo-chemically source. However, recent attempts to characterize steatite sources using INAA and LA-ICP-MS have shown promise. Our paper will present the results of the chemical analysis of multiple steatite sources collected from several regions of California including the Sierra Nevada Mountains, Inyo Mountains, and Southern California. These analyses were successful in distinguishing between steatite from these regions indicating the potential for answering questions related trade and exchange through time.

Andrade, Agustín [95] *see Ibarra, julio C.*

Andre, Clarissa [109] *see Skinner, Anne*

Andrefsky, William (Washington State University)

[22] *Comparing Flake Tool Efficiency or What Won't Whittle Wood?*

In past several decades lithic technological studies have sometimes linked unretouched flake tools to aspects of technological expediency. Recent investigations from several parts of the world suggest that unretouched tools may have been more effective in performing various tasks than retouched tools. This paper explores efficiency of retouched and unretouched flake tools from replicated and excavated assemblages. Results show unretouched flake tools are more efficient than retouched tools for certain tasks and that expediency of production may not be the primary reason for their use. Instead, these were the preferred tools when tool-stone abundance allowed for their production.

[59] *see Vardi, Jacob; [78]* *First Moderator; [160]* *see Ferris, Jennifer M.; [257]* *Discussant*

Andres, Christopher (Indiana University - Purdue University Fort Wayne), Jason J. Gonzalez (University of Georgia) and Shawn Morton (University of Calgary)

[9] *Architecture and Community Patterns at Tipan Chen Uitz, Cayo District, Belize*

In this paper, we discuss the results of our first season of investigations in the monumental precinct of the large and recently reported pre-Hispanic Maya center of Tipan Chen Uitz. In contrast with patterns identified in other parts of Belize, our 2010 excavations and mapping activities suggest that Tipan was founded late and most likely experienced a relatively short large-scale occupation. In this presentation, issues of architectural form, function, chronology, and access to space are considered in an effort to better define Late-to-Terminal Classic period sociopolitical developments in this part of the southern Maya Lowlands.

Andres, Christopher [266] *see Morton, Shawn G.*

Andrews, Anthony (New College of Florida) [221]
Discussant

Andrews, Bradford [190] *see Johnson, Laura E.*

Andrews, E. Wyllis (Tulane University) [225]
Discussant

Andrieu, Chloé (Université Paris X Nanterre) and Kazuo Aoyama (Ibaraki University)

[116] *Lithic Production and Distribution in the Maya Lowlands: Implications for Centralized vs. Decentralized Economic Power*

Absence of workshops and other evidence are usually cited to argue for minimal elite involvement in economy and craft production. Yet recent detailed technological analyses of lithic special deposits, royal burials, and raw material management reveal more complexity than traditional opposition of "centralized" vs. "decentralized" economy. Also specific lithic materials and distributions in some sites have very segmented production chains, perhaps suggesting central coordination. Yet other Maya sites have a completely different pattern. Here we briefly report new extensive analyses of lithic patterns at Cancun, Copan, Calakmul and other sites in terms of "control", variability, and change.

[116] *Second Organizer*

Andrushko, Valerie (Southern Connecticut State University)

[233] *Skeletal Evidence for Inca Warfare from Cuzco, Peru*

The osteological evidence for Inca warfare is addressed through the analysis of burials from 11 sites in the Cuzco region of Peru. In the Inca Imperial Period (AD 1400–1532), 18 individuals had warfare-related injuries to the cranium (8.2%, 18/219), consisting of large, complete, and/or perimortem fractures. This frequency was a significant rise from earlier time periods, when warfare-related injuries were scarce (Middle Horizon, AD 600–1000, 2.8%, 1/36; Late Intermediate Period, AD 1000–1400, 2.5%, 5/199). These injuries were commonly seen at some Inca sites and absent at others, revealing significant geographical differences in the prevalence of warfare-related activities.

Angelbeck, Bill (Independent)

[232] *An "Indirect Historical Approach" to Cultural Change: Considering Shifts in Societal Tensions throughout the Coast Salish Past*

The Direct Historical Approach has been used to understand past societies by extending ethnographically known practices to archaeological patterns. The approach has had success in regions of temporal continuity, but less so in areas marked by discontinuity, such as Euroamerican contact with the Northwest Coast. Discontinuities are not limits to understanding, however, but can be lenses for insights by revealing how societal tensions manifest and reorganize. Building upon Proudhon's characterization of society as not a monolithic whole but as a bundle of tensions, I apply an "indirect historical approach" to gauge changes in societal frictions throughout the Coast Salish past.

Angelo, Diana [87] *see Riggs, John*

Angeloff, Nick (Bear River Band of Rohnerville Rancheria)

[239] *California Humboldt Subsistence Settlement*

The Borax Lake Pattern within far northern California is thought to represent a generalized technological organization representing an upland foraging subsistence-settlement strategy with little variation between archaeological assemblages throughout the region. Current research has focused on this variation, as minimal as it may appear, to flesh out our understanding of human behavior during the early Holocene, revealing variability in technological organization in response to ecological conditions that is relevant to our understanding of the Borax Lake Pattern.

Anovitz, Lawrence (Oak Ridge National Laboratory), Mostafa Fayek (University of Manitoba), David Cole (Oak Ridge National Laboratory) and Tristan Carter (McMaster University)

[97] *Analysis of Obsidian Hydration: The Current State of the Art*

In 1997 Anovitz et al. reported to the SAA the results of our initial attempts to understand the process of obsidian hydration using Secondary Ion mass Spectroscopy (SIMS) to directly analyze the concentration of water as a function of depth in archaeologically-hydrated obsidian, showing that the technique's primary difficulty to that point was the inherent imprecision and inaccuracy of optical measurement. Subsequent analysis of both experimental and archaeological samples (Mexico and Turkey) has elucidated hydration mechanisms, shown that high-precision extrinsic dating is possible, and provided a new method for determining paleoclimatic data.

Anschuetz, Kurt [53] *see Trigg, Heather B.*

Antônio Dantas DeBlasis, Paulo [253] *see Bianchini, Gina F.*

Aoyama, Kazuo (Ibaraki University)

[225] *Preclassic and Classic Maya Lithic Artifacts from Ceibal and Its Neighboring Sites, Guatemala*

This paper discusses the results of an analysis of more than 40,000 lithic artifacts collected in and around Ceibal, Guatemala, and studied between 2005 and 2011. These lithic artifacts pertain to the Middle Preclassic through the Terminal Classic period and can serve as sensitive indicators for reconstructing one aspect of long-term changing patterns of the pre-Columbian Maya sociopolitical and economic systems in the study region. The results of my study suggest that importation of obsidian blade cores from highland Guatemala and local production of prismatic blades began during the Middle Preclassic period as the result of sociopolitical development at Ceibal.

[116] *see Andrieu, Chloé; [93]* *see Izeki, Mutsumi*

Apple, Rebecca [50] *see Gibson, Heather*

Aprile, Jamie (The University of Texas at Austin)

[4] *The Lofkënd Survey Project: A Small Intensive Survey in the Gjanica River Valley in Central Albania*

In 2007-2008, a small intensive surface survey was undertaken in the Gjanica River valley in central Albania. The purpose of the project was to explore the archaeological remains in the vicinity of a recently excavated Late Bronze-Early Iron Age tumulus near the village of Lofkënd, Albania in order to situate it in the

landscape and determine if a contemporaneous settlement was located nearby. Preliminary results reveal an open-air Palaeolithic occupation as well as a number of small Hellenistic/Late Roman period sites. Recent historical ruins were also documented through archaeological observations, Communist period maps, and interviews with local residents.

Aquino, Valorie (University of New Mexico), Keith Prufer (University of New Mexico) and Douglas Kennett (University of Oregon)

[34] *Using Bayesian Statistics to Refine Chronology Building at Uxbenka*

With over 100 high precision AMS 14c dates, Uxbenká is one of the more tightly dated sites in the Maya lowlands using absolute techniques. We present a precise AMS 14C chronology, anchored on well-defined stratigraphic relationships between carbonized samples and cultural deposits. A Bayesian framework is used to interpret AMS 14C data from two groups in the site core and several settlements. By combining non-quantitative information with probability distributions, we discuss how these refined methods for chronology-building are shaping our understanding of the growth and decline of a Maya polity.

Arakawa, Fumiyasu (Crow Canyon Archaeological Center) and Jamie Merewether (Crow Canyon Archaeological Center)

[117] *Evaluating Chaco Influences in the Central Mesa Verde Region Using Material Culture during the Chaco and Post-Chaco Periods*

Archaeologists have assumed that the frequency of interaction and trade between the people of the Mesa Verde region and those outside the region changed from an open, frequent interaction during the Chaco Phenomenon (AD 1060–1140) to a very limited exchange in the Post-Chaco period. To investigate this, we looked at “trade” items found in Chaco and Post-Chaco deposits in the Mesa Verde, Totah, and Chaco regions. The data should support the assumption about frequent trade during the Chaco period or, alternatively, suggest that the Mesa Verde people were isolated, maintaining their own traditions from A.D. 1060 to 1280.

Arakelyan, Dmitri [114] *see Egeland, Charles P.*

Araujo, Astolfo (Museum of Archaeology and Ethnology - USP)

[231] *Paleoindians in Southeastern Brazil: New Data from Rio Claro and Lagoa Santa*

Rio Claro and Lagoa Santa are two areas in Southeastern Brazil that have been subject to studies regarding Paleoindian occupations in South America, and new archaeological data concerning both regions are now available. These data, coupled with paleoenvironmental and chronological information, point to a complex scenario that should be taken into consideration when discussing the peopling of the Americas.

Araujo, Astolfo [6] *see Okumura, Mercedes*

Archila Montanez, Sonia (Los Andes University) and Inés Cavellier (Independent Researcher)

[25] *Wood use as fuel for pottery production in the Colombian Andean highlands*

This paper presents results from a research project carried out in the Andean highlands of Colombia which main purpose was to reconstruct the history of wood use as fuel for the pottery production since prehispanic times. In this paper we compare different fuel resources used for ceramic manufacturing in three moments: prehispanic, colonial and recent times. Several methodological strategies were carried out during the project. The project uses data from ethnoarchaeological research (fuel use) and charcoal analysis from archaeological middens. It will be discussed the value of these methodological strategies to understand past human relationships to their wood resources.

Arden, Traci (University of Miami), Fernando Godos (Universidad de Colima, México), Alejandra Alonso (University of Calgary/Instituto Nacional de Antropología e Historia), Eric Stockdell (Indiana University) and T. Kam Manahan (Kent State University)

[221] *The architectural and archaeological transition from Late Classic to Terminal Classic at Xuenkal, Yucatan, Mexico*

Recent excavations at the site of Xuenkal, Yucatan, demonstrate a long occupational sequence and architectural record, starting in the Late Preclassic. The most dramatic changes to this sequence are found in the transition from Late Classic to Terminal Classic periods. Occupants at the site participated in a regional tradition of core-veneer architecture during the Late Classic period, while during the Terminal Classic even elite architecture is constructed of reutilized materials constructed in a haphazard manner. Analyzed in concert with the artifactual transition, these architectural changes can be understood to reflect changes in the socio-political organization and economy of the region.

Arden, Traci [14] *see Lowry, Justin P.*

Areshian, Gregory (University of California) and Boris Gasparian (Institute of Archaeology and Ethnography of the National Academy of Sciences of Armenia)

[114] *Patterns Of Cave Occupation During The Pre-Subboreal Holocene Of The Caucasus And Central Near Eastern Highlands*

Post-Paleolithic cave occupation is little studied phenomenon in the Caucasus. From the Epipaleolithic to the formation of Maikop assemblages of the fourth millennium BCE caves were used in some areas as habitations of hunter-gatherers transitioning to food-producing economies. Recent discoveries in Armenia suggest substantial variability in the Neolithic transition. Pre-pottery Neolithic cave site of Kmlo co-existed with agricultural open-air settlements. Discoveries at Areni-1 demonstrate that the growth of societal complexity during the Chalcolithic (fifth millennium BCE) led to a specialized usage of caves as ritual spaces by communities of farmers occupying open-air settlements.

Argent, Gala (University of Leicester)

[260] *Tattoos, Transcendence and Time: Humans, Horses and Cosmology in the Pazyryk World*
Excavations of the Pazyryk archaeological culture of Iron Age Inner Asia have yielded not only a wealth of artifacts but also, due to preservation in permafrost, actual bodies

and clothing of the humans buried—and their horses. In this presentation I use a relational and phenomenological approach to human-horse interactions to argue that the tattoos found on many of the human bodies have been misidentified as theriomorphs, and instead represent actual horses. I further discuss how these horses etched upon human skin reflect cosmological values and the passing of time for the Pazyryk people.

Arguello Garcia, Pedro Maria (University of Pittsburgh)

[260] *Rock art and domestic ritual. A locational analysis of El Colegio petroglyphs, center of Colombia.*

The analysis of the distribution of both petroglyphs and households in El Colegio has permitted to evaluate some hypothesis about the rituality of rock art. In Colombia, rock art has generally been considered as a part of a very special ritual behavior, differentiated from the domestic sphere. Such explanations are the result of the consideration of rock art isolated from other archaeological objects and as a primary source of symbolic information. On the contrary, an archaeological attempt using several lines of evidence at different scales has provided a different picture in which rock art seems more related to domestic activities.

Ariel, Frank [59] *see* Castro, Alicia S.

Arksey, Marieka (British Museum) and Patrick Wilkinson (University of Arkansas)

[208] *Constructing Histories in Sixteenth Century Mesoamerica: Landscape, Resistance, and Identity*

This poster explores the concept of landscape as being fundamental to the creation and maintenance of an indigenous historical identity which was able to persist throughout the early colonial period in Western Mesoamerica. The lack of 'true writing', as understood by the Europeans, meant that the indigenous writing systems were discounted. Different concepts of landscape, as evidenced within codices and maps, meant that their importance to the creation of indigenous peoples' identities went unrecognized. Understanding the roles that such concepts can offer conflict studies provides a fresh perspective on the ability of such studies to identify the indigenous perspective.

Arksey, Marieka [124] *see* Wilkinson, Patrick

Arkush, Elizabeth [233] *see* Velasco, Matthew C.

Arnett, Christopher

[96] *Evidence of Ritual Activity at an Nlaka'pamux Rock Art Landscape through an Analysis of Lithic Debitage and Glass Shatter*

Analysis of lithic debitage and glass shatter recovered from an Nlaka'pamux rock art landscape (site EbRk-2) on the Stein River, British Columbia, shows consistency of size in debitage and shatter and absence of cores and finished tools. Preliminary interpretations are that this assemblage represents the latter stages of biface reduction in the manufacture of lithic and glass tools not necessarily associated with the processing of game. Rather, it is suggested that the assemblage represents tool making associated with ritual activity at the site by shwoonA-m ("Indian doctors") in the 19th century and possibly earlier

Arnold, Dean (Wheaton College (IL)), Bruce Bohor (US Geological Survey, retired), Hector Neff (California State University Long Beach), Gary Feinman (Field Museum of Natural History) and Ryan Williams (Field Museum of Natural History)

[142] *Indigenous Knowledge and the Sources of Palygorskite used in Maya Blue*

Maya Blue was created from indigo and palygorskite, both part of Yucatec Maya indigenous knowledge. In the 1960's, Arnold and Bohor hypothesized that the palygorskite in Maya Blue came from two modern sources of the mineral. To test this hypothesis, we analyzed 154 samples of palygorskite using LA-ICP-MS, and compared them with the analyses of Maya Blue (N = 9) from Chichén Itzá and Palenque. The palygorskite in these samples came from the two modern sources. This approach to Maya Blue demonstrates the value of combining indigenous knowledge, ethnohistory, archaeology, and the techniques of the physical sciences to answer archaeological questions.

[85] *Discussant*

Arnold, Jeanne (UCLA), Eric Fries (UCLA), Lana Martin (UCLA) and Stephanie Salwen (UCLA)

[123] *From Paleoclimate to Ancient Production Systems: Current Channel Islands Research*

Archaeological investigations into hydrological history, plant communities, exploitation of hydrocarbons, and social contexts of bead-making on the northern Channel Islands yield results that invite comparison to modern issues. Studies of climate and paleobotanical assemblages provide insights into the consequences of drought for Chumash settlement, health, plant harvests, and risk management—all germane to contemporary climate and food production issues. Major asphaltum seeps facilitated a transportation revolution a millennium ago (plank-boat construction); as today, petroleum products were noxious but prized resources. Studies of specialized bead-making communities of practice generate insights into apprenticing and the cultural transmission of technological information.

Arnold, Shannon (University of Utah)

[91] *Estimated Population Density and Potential Crop Yields in Range Creek Canyon, Utah*

This study concentrates on estimating the population density of Range Creek Canyon, Utah, during the short Fremont occupation of the valley floor, approximately A.D. 900-1100. Two estimates will be made. First, the size and number of residential surface structures located on the valley floor will be used to estimate the maximum number of individuals living in the canyon. The second measure will examine the arable lands on the valley floor using area, slope, and distance to water to create a scale of agricultural potential under ideal growing conditions. The results will be developed through further excavation of suspected residential structures in the canyon, the collection of additional radio carbon dates, and isotopic analysis of potentially farmable areas identified in this study.

Arnold, William (College of Wooster)

[27] *Running Around and Settling Down: Cultural Interactions and Identity along the Germanic Border during the Migration Period*

In recent centuries, the existence of a politically unified Germany has caused people to question whether there is a unified German identity. Through all of recorded history, the region now known as Germany housed a fractured and disparate people only loosely connected with one another. The present study will examine the Germanic peoples living in the area during the Migration Period (A.D. 400-600) and the early Middle Ages (A.D. 600-800), paying special attention to material culture and extant Old High German texts, in an attempt to define the influences of indigenous ideologies on these peoples' sense of identity.

Arpaia, Angela (University of California, Davis) and Carly Whelan (University of California, Davis)

[62] *Basalt Sourcing for Seirra Nevada Foothills*

X-ray fluorescence (XRF) spectrometry has been used successfully to trace the geological sources of obsidian artifacts by comparing their chemical signatures with a database of known source locations. The results of obsidian sourcing analysis can be used to reconstruct prehistoric mobility and trade patterns. Basalt sourcing analysis has the potential to reveal similar kinds of information about prehistoric people who relied on basalt in addition to, or instead of obsidian. I will present the results of XRF sourcing analysis undertaken on basalt sources and artifacts excavated from several prehistoric sites in the Sierra Nevada foothills of California.

Arrizabalaga, Alvaro (The University of the Basque Country) and Maria-José Iriarte (The University of the Basque Country)

[218] *Identifying the Signs: The Middle-Upper Palaeolithic Transition in Southwest Europe from the perspective of the lithic record*

The lithic record, together with archaeozoological remains, makes up the most abundant assemblages at European Palaeolithic sites. During many decades in the twentieth century, the classical typological analysis (the Bordesian paradigm) has been used to articulate the sequencing of the different cultural and chrono-stratigraphic units. At the same time, since the 1960s an alternative methodology known as Analytical Typology, proposed by Georges Laplace, has been available.

Arroyo, Barbara (Museo Popol Vuh UFM Guate)

[182] *The Plaza Space in the Maya Highland Middle Preclassic*

The study of Preclassic architecture has been an important subject in the Maya Lowlands. Little is known from the Maya highlands. This paper will present information on plazas identified in the highlands of Southeastern Mesoamerica during the Middle Preclassic. The core information comes from recent work at Naranjo in highland Guatemala, yielding data on the arrangement of the site's Middle Preclassic site layout. The role of the plaza at the site has showed the importance of this ritual space. Information on the role of the plaza at Naranjo will be presented, showing the integration of its landscape as part of the site composition. The presence of three rows of monuments associated to the plaza, contributes to demonstrate the ritual use of such space. Comparisons with contemporary sites will be presented to place this architectural practice in perspective.

Arsenault, Daniel (CELAT-UQAM, Montreal, Quebec)

[60] *"It's a bird... it's a plane... no, it's a memekweshuat!" Interpreting some peculiar figures in the Canadian Shield rock art.*

In the Canadian Shield rock art the human body is usually depicted with a minimum of details (no facial features, hands, feet) showing therefore a schematic figure with only basic traits (head, trunk, arms legs). However there are examples of human-like figures whose body features are more detailed. I argue that some of them could be interpreted as the representation of a peculiar species, the memekweshuat. Since there are tales in Algonquian oral traditions or ethnohistorical accounts describing them, these data can be used to discuss how and why such personages are represented in the rock art sites located in Québec.

Artz, Joe (University of Iowa)

[234] *The Architecture of Ritual: the Creation of a Rock-Cut Tomb at Bolores, Torres Vedras, Portugal*

Some 4,800 years ago, people chose a sandstone outcrop overlooking the Rio Sizandro as a burial place for the dead. The outcrop, a Jurassic deltaic stream channel, is conspicuous in the locality. The people carved an arched, sloped-ceiling rock shelter into the soft, easily worked sandstone, and excavated its floor into shale underlying the sandstone. During its two millennia of use, this ritual space was modified by further excavation into the shale, and by the slab construction of small chambers. Through microstratigraphic and geospatial analyses we are identifying and modeling the different phases in the site's architectural history.

[234] see Thies, Meagan E.

Asa, Cheryl [126] see Marshall, Fiona B.

Asbury, Sophia (Washington State University)

[257] *Testing the Limits of Rim Sherd Measurement*

Archaeological investigations utilizing ceramic materials are often handicapped by fragmentation in ceramic assemblages. This study seeks to determine the operational limits on the use of rim sherds to extrapolate orifice size. The correlation between orifice diameter and vessel size makes rim sherds particularly useful, however the researcher's ability to accurately project vessel diameter from a rim sherd may be impacted by sherd size. The percentage of the total circumference (or degree of arc) that is needed in order to obtain accurate diameter projections is tested. Additionally, given the objective nature of this measure, replicability between researchers will also be addressed.

Ashtkanani, Hasan (University of South Florida) and Robert Tykot (University of South Florida)

[63] *Using non-destructive XRF analysis for sourcing of bronze age ceramics from Kuwait and Bahrain*

Ceramics from Kuwait and Bahrain were analyzed to address trade and exchange in the Bronze Age, the first such scientific study in the Persian Gulf. The statistically significant number of ceramic samples used in this analysis were collected from the early second millennium BC sites of F6 (known as a Governor Palace) and Al-Khidr in Kuwait, and from Dilmun temple, known as Barbar, in Bahrain. The ceramics were analysed using a non-destructive, portable X-ray fluorescence spectrometer (pXRF). The quantitative data produced were used to examine the variation in both of the

ceramics' components by examining their trace element composition

**Ashley, Michael (University of California, Berkeley),
Cinzia Perlingieri (University of California, Berkeley)
and Ruth Tringham (University of California,
Berkeley)**

[3] CoDiFi:

CoDiFi is an application developed for and by archaeologists to make the process of managing, processing and publishing archaeological data and media radically simple. Through the example of the peer-reviewed monograph by the Berkeley Archaeologists at Çatalhöyük, we take you behind the scenes and demonstrate how CoDiFi makes it easy to create a reusable, citable and durable digital archaeological record. CoDiFi is equally useful for new projects and massive legacy datasets. Starting from simple spreadsheets or complex databases, CoDiFi provides a customizable workflow that is standards based, aimed at facilitating all steps involved in archaeological publication.

Astuhuaman, Cesar (Universidad Nacional Mayor de San Marcos)

[15] *The Inca network of provincial centers and roads within the Highlands of Piura, Northern Peru*

The aim of this paper is propose some interpretations about the Inca presence within the Highlands of Piura, Far Northern Peru. First, I describe the archaeological evidence of the Late Intermediate Period within the Piuran highlands to try understanding the subsequent Inca presence there. Next, I explain the theoretical approach about imperial institutions to try linking architectural remains and Inca institutions. In the central part of this paper, I describe the record of four Inca provincial centers and roads through tables, plans and maps. This record allows elaborating several interpretations about the Inca rule within the analyzed region.

Atalay, Sonya (Indiana University)

[197] *Engaging Archaeology: Positivism, objectivity and rigor in activist archaeology*

"Any attempt to make the case for activist scholarship runs directly up against objections, encapsulated in three powerful words: positivism, objectivity and rigor." In his edited volume on activist scholarship, Charles Hale asks scholars to consider these three common objections to activist research. This paper critically assesses these objections in relation to activist archaeology. I consider the feasibility of engaging in activist research while still maintaining a level of objectivity and rigor. Must we sacrifice objectivity and rigor in doing activist archaeology? If so, what are the implications for archaeologists who are committed to applied and action-oriented research?

[78] *Discussant*

Athens, J.

[73] *Archaeology of Northern Highland Ecuador Before the Inka: Chronology and Processual Implications*

A synthesis of archaeological and paleoenvironmental findings provides the foundation for a chronology of the pre-Inka archaeology of the highland region of northern Pichincha and Imbabura Provinces of Ecuador. Evidence

for a preceramic occupation is unclear, but beginning with the introduction of maize agriculture, the natural inter-Andean landscape was transformed into an entirely managed anthropogenic ecosystem. It culminated in the rise of hierarchical social systems with major monumental constructions. Findings having implications for socio-political processes are highlighted.

Atici, Levent (University of Nevada, Las Vegas)

[69] *Zooarchaeology at Körtik Tepe, SE Turkey: Preliminary Results on Pre-Pottery Neolithic A (PPNA) Subsistence*

Southeastern Turkey is now considered part of the archaeological domain where the "Neolithic Revolution" took place independently. The recent archaeological projects in the region have greatly contributed to a better understanding of Terminal Pleistocene/Early Holocene archaeology. Thus, it is crucial to develop a fine-resolution picture of hunter-gatherer behavioral strategies and changes therein during this period of rapid cultural and environmental change in southeastern Anatolia. Körtik Tepe near Batman is one of the PPNA (10th millennium BP) sites with astonishing findings. This paper presents the preliminary results of the faunal analysis from Körtik Tepe and focuses on the animal exploitation strategies.

[216] *see Kansa, Sarah W.*

Authier, Martin (Southern Methodist University) and Manuel Perales Munguía

[106] *Dynamics of local and long-distance exchange from 1200 to 400 B.C. at the Castillo de Huaricanga, Fortaleza Valley, Peru*

Excavations at the Castillo de Huaricanga revealed a continuous local subsistence exchange between the inland farmers of Huaricanga and nearby littoral communities. Furthermore, the presence of non-local material—spondylus, cinnabar, obsidian—demonstrates a long-distance exchange network operating from 1200 – 400 B.C., coinciding with the peak and decline of the Chavín phenomenon. The Fortaleza Valley was an important route from the coast to the highlands near Chavín, and Huaricanga's location probably afforded the local population access to exchange networks operating throughout the Central Andes. We discuss the significance of these exchange dynamics for understanding the social processes operating at Huaricanga.

Avery, George [64] *see Hargrave, Michael L.*

Awe, Jaime J. (Institute of Archaeology)

[90] *Evidence for Low-Density Urbanism in Western Belize: A Re-examination of Prehistoric Settlement Patterns in the Belize River Valley*

Beginning with Gordon Willey's settlement pattern study in the Belize River more than half a century ago, continuous settlement research makes this area one of the most intensively studied in the Maya Lowlands. Recent analysis indicates that in spite of differences in their historical development, location, and general configuration, none of the major centers in the valley ever substantially exceeded the size or socio-political stature of its neighbors. Our investigations demonstrate that although some sites were occupied for almost a thousand years, settlements around these centers

remained relatively dispersed in a manner that is consistent with models of Low-Density Urbanism.
[266] see Moyes, Holley **[56]** see Freiwald, Carolyn R.
[56] see Wrobel, Gabriel D.

Baca Marroquin, Ancira Emily (University of Illinois at Chicago)

[228] *Ceramic Production under Inca Imperial domination in the Central South Coast of Perú, Asia Valley.*

The production and distribution of prestige goods were the prerogatives of elite groups in Andean polities, and through this medium elites expressed their social identity, ideology and authority resulting in a powerful media. Presence, absence and exchange of ceramic attributes allow us to explore identity struggles arising after Inca imperial dominance, and unveil the strategies employed in the conquest of the Asia Valley, Peru. I examine a ceramic sample from the site of Uquira, and consider the consequences of the new political conditions imposed by the Incas on the local population of the Asia Valley.

Bachand, Bruce R. [51] see Lowe, Lynne S.

Backes, Clarus (SWCA, Inc.)

[230] *The Baby in the Bath Water: Revisiting Heizer and Clewlow's "Prehistoric Rock Art of California"*

Heizer and Clewlow's 1973 publication "Prehistoric Rock Art of California" assembled data collected over a twenty-year period by the University of California Archaeological Survey into a comprehensive assessment of California rock art. Although it was criticized at the time of its publication, the study refined the classificatory scheme and style areas that continue to frame most California rock art studies today. This paper revisits Heizer and Clewlow's study and the reactions it sparked in the archaeological and rock art communities, and uses recent data from sites in southern California to assess criticisms of their methods, results and interpretations.

Backo, Heather (Tulane University)

[156] *Huaca de la Luna Plaza 3A and the Taphonomy of Human Sacrifice*

This paper explores and compares a combination of newer and traditional taphonomic techniques designed to interpret sample size, patterns of disarticulation and trauma, contextual data, and orientation to explore the type and level of postmortem alterations among a group of 100+ sacrificed individuals from Plaza 3A, located at the Moche site of Huaca de la Luna. Unusual patterns of element representation, disarticulation and dispersal, and grouping/positioning can then be illustrated and compared to known patterns of taphonomic activity, which are then either confirmed or excluded. In addition, it will be shown how these techniques can give insight into the level of taphonomic winnowing present in a site.

Badal, Ernestina (University of Valencia), Michael Barton (Arizona State University), Yolanda Carrión (Centro de Investigaciones sobre Desertificación), and Margaret MacMinn-Barton

[25] *Reconstructing Past Landscapes from Charcoal. New Data from Middle Chevelon Creek (Arizona)*

The Mogollon Region Small Sites (MRSS) project carried out systematic survey and excavation of Late Archaic through Pueblo I farming hamlets in the middle Chevelon Creek drainage. Analysis of charcoal from excavated

domestic structures at the Chevelon Crossing site allows us to reconstruct the prehistoric vegetation along Chevelon creek. The taxonomic variability observed indicates the presence of diverse vegetation communities. The most important of these were pine and juniper woodland, and a riparian community with willow, poplar, and maple among the arboreal taxa. Taphonomic study of the charcoal assemblage also provides information about post-depositional events at the site.

Badam, Gyani (Delhi Institute of Heritage Research & Management)

[12] *Ratite and Human Interaction Symposium*

One of the landmark discoveries made in Indian archaeology has been of ostrich egg shell pieces, reported from various Upper Palaeolithic levels of more than 70 sites. These have been studied in detail from phylogenetic, biochemical, ecological and chronological points of view. Some shell pieces are engraved and some have cross hatched designs on them, constituting the earliest datable evidence of applied art in India. The ostriches also had several breeding centers in India. However, the presence of this bird in the form of pictographs in various rock shelters is rather debatable.

Baichtal, James [181] see Carlson, Risa J.

Bailey, Amanda (University of Wisconsin La Crosse)

[233] *Artificial Cranial Modification At the Carson Mounds Site*

The Carson Mound site is one of the largest prehistoric ceremonial centers in the Mississippi alluvial valley. It is a Mississippian mound center and dates from approximately 900-1500 AD. In 1894 Cyrus Thomas included a map of this site that showed more than 80 mounds, today only a few remain. Excavations of the site began in 2008. During the summer of 2009 burial pit four recovered approximately 33 individuals. In burial pit four two individuals showing signs of artificial cranial modification were identified. Analysis looked at intentional vs. unintentional modification and the relationship that has to status.

Bailey, Dave [107] see Gunter, Madeleine **[22]** see Goodale, Nathan B.

Bailey, Doug (San Francisco State) [122] *Discussant*

Bailey, Ralph (Brockington Cultural Resources Consulting), Inna Moore (Brockington Cultural Resources Consulting) and Damon Jackson (Brockington Cultural Resources Consulting)

[81] *Understanding Settlement, and Site Impacts along the Atlantic Intracoastal Waterway: Section 110 Site Evaluations for the Charleston District, USACE*

In South Carolina, the Atlantic Intracoastal Waterway passes through one of the region's richest and most sensitive cultural areas for the Pre-Contact era. It is the northern reach of the shell rings built during the Late Archaic and the southern reach of the dense clam middens left along the marsh edge during the Mississippian period. These coastal shell sites hold the clues to the lives and traditions of South Carolina's earliest residents, yet little is known about them. This project will help the Corps of Engineers understand these resources, how the waterway is impacting them, and how

the Charleston District can protect them.

Baillie, Harold

[32] *Late Classic Rio Viejo*

The intent of this poster is to examine the various activities that occurred on the Río Viejo Acropolis during the Late Classic Period (500-800 C.E.). Through the analysis of excavations conducted during various field seasons, 1988 (RV88), 2000 (RV0A), and 2009 (RV09), I will examine how the Late Classic (500-800 CE) architecture and social practices which occurred at the acropolis reflect political authority. I will also examine how the life history of the acropolis reflects the changes of the Río Viejo polity over the course of the Late Classic.

Bain, Allison (Université Laval, Québec, Canada), Michael Burn (University of the West Indies, Kingston Jamaica), Lisa Kennedy (Virginia Tech), Allison LeBlanc (Virginia Tech) and Anne-Marie Faucher (Université Laval, Québec)

[202] *Recent Research in Environmental Archaeology and Paleoecology in Antigua and Barbuda*

An intensive examination of past environments and climates is being undertaken on the islands of Antigua and Barbuda by an international team of scholars from North America, Jamaica and the UK. Sedimentary records spanning the last ca. 2000 14C years contain ostracods, molluscs, charophytes, microcharcoal, and pollen as well as evidence of past hurricane events. Archaeological data in the form of preserved charcoal and seeds complement these data sets. Combined with the ongoing archaeological investigations from both the pre-contact and Colonial Periods, we are studying the islands' long term ecodynamics developing a more comprehensive narrative of the past.

Bair, Daniel (Brigham Young University), Richard Terry (Brigham Young University) and Bruce Dahlin (Ancient Maya Environmental Studies Center)

[225] *Ancient Maya Activities at Public Plazas and Household Patios at Ceibal, Guatemala*

Lines of evidence including location, trade routes, artifactual evidence of exchange, open space, proximity to public structures, low platforms and rock alignments may denote market spaces, but regular patterns in soil and floor chemical concentrations also point to marketplace use. The objectives of the study were to apply geochemical and geospatial analysis of the soils and floors from the Central Plaza in Group A of Ceibal, to discover the anthropogenic chemical residues of P and heavy metals associated with the exchange of foodstuffs and workshop items that may have been marketed there.

Baitzel, Sarah [233] see Somerville, Andrew D.

Balasalle, Aileen [208] see Abraham, Sarah J.

Baldwin, Lisa [248] First Chair [248] Second Organizer; [248] see Stehman, Kelly M.

Bale, Martin (Early Korea Project, Harvard University)

[149] *Periphery of a Periphery? Socio-political Development and Subsistence Patterns of the Taehwa River Basin in Southeast Korea, c. 1500-300 BC*

The Korean Peninsula is thought to have been peripheral to the socio-political developments and subsistence

patterns of China's central plains region, and the Taehwa River Basin is assumed to have been peripheral to the same changes in the peninsula. I examine these assumptions by analyzing settlements, households, and subsistence patterns. The Taehwa basin lost its peripheral status and was gradually integrated into the material cultural mainstream of South-central and Western Korea in the latter half of the Middle Mumun Period (850-700 BC), and local agents may have played an active role in the domestication of crops such as soybean.

[149] Second Chair [149] Second Organizer

Balicki, Joseph (JMA [John Milner Associates, Inc.]

[80] *ARRA Stimulates the JMA Cultural Resources Team*
John Milner Associates (JMA), and a team of eight sub-consultants, was selected by the U.S. Army Corps of Engineers District-St Louis to undertake NHPA Section 110 projects nationwide. Funded by ARRA the JMA team worked to develop and implement cultural resources projects in 17 Corps Districts throughout the eastern and southern United States. The team accomplished a broad range of tasks including Phase I surveys, shoreline surveys, Phase II evaluations on historic and prehistoric sites, development of site predictive models, geophysical testing, GIS-databases of District cultural resources, National Register of Historic Places (NRHP) eligibility evaluations, curation assessments and building assessments.

Balicki, Joseph [80] see Majewski, Teresita

Ball, Joseph (San Diego State) [14] Discussant

Ballantyne, Marianne (BHE Environmental, Inc.) and Kevin Magee (University of Cincinnati)

[259] *Archaeological Enclaves: The Effects of 22 Years of Differential Land Management Policy on the Archaeological Record*

From 1947 to 1969, Clarksville Base, located within the Fort Campbell Military Installation in southwestern Kentucky and northern Tennessee, served as an atomic weapons storage facility. During that time, it was regarded as a separate entity from the remainder of the installation and adjacent lands, and was restricted to select military personnel. Archaeological investigations conducted by BHE Environmental since 2003 have surveyed over 2000 acres of land inside and outside Clarksville Base. This study investigates how two decades of differential land management policies have impacted archaeological phenomena, creating two different views of the archaeological record.

Ballenger, Jesse (University of Arizona)

[231] *The Densest Concentration on Earth? Quantifying Human-Mammoth Associations in the San Pedro Basin, Southeastern Arizona*

The San Pedro Basin (SPB) contains four Clovis-mammoth associations, making it one of the densest concentrations of human-proboscidean sites on earth. I compare the Clovis-age archaeofaunal record to its paleontological background to measure the level of predation that created this record. My analysis indicates that Clovis people affected mammoth populations to a significant degree, a situation expected in the presence of abundant mammoths. I argue that this circumstance

occurred in the SPB, possibly in the form of a refugium. If the refuge hypothesis explains mammoth predation, then Clovis-mammoth associations should occur as clusters as they do in the SPB.

Balsom, Janet (Grand Canyon National Park), Lisa Leap (National Park Service, North Central Arizona Monuments) and Jennifer Dierker (Grand Canyon National Park)

[20] *People, Place and Preservation in Grand Canyon National Park*

Grand Canyon National Park (GCNP) has been home to native peoples for over 12,000 years. From the banks of the Colorado River to the high elevations of the North Rim, the canyon is a place of emergence, home, refuge and return. Thousands of people lived within the canyon, leaving behind the footprints of their passing in thousands of archaeological sites. Preservation of these resources and their information is core to our stewardship responsibilities. For over 100 years, archaeologists have documented these places in hopes of better understanding the dynamic nature of human use and occupation of the marginal canyon environment.

[20] *Second Chair*

Baltus, Melissa (University of Illinois Urbana-Champaign), Sarah Otten (University of Illinois Urbana-Champaign) and Timothy Pauketat (University of Illinois Urbana-Champaign)

[24] *Elements of Ancient Power and Agency*

Power in ancient eastern North America cannot be segregated a priori into political, social, and religious dimensions. Rather, it was a commonly dispersed attribute of human-nonhuman social fields that might be transferred, gathered, embodied, or emplaced. Thus, political power was realized, at least in part, through socio-religious practices involving ancestors, elements, and otherworldly forces. Deconstructing the dichotomy of religion and politics, we focus on practices of material manipulation, burning and burial at and around the 11th and 12th century complex of Cahokia along the Mississippi River. Specifically, we detail a number of contexts where temple buildings, human remains, and marker posts were transubstantiated, especially through burning, and hence their power transformed. Persons were constructed, places of power were built, political agents were defined, and enemies were eliminated through fire and earth.

Balzotti, Chris [225] *see Terry, Richard E.*

Banffy, Eszter (Archaeological Institute Has, Budapest, Hungary)

[247] *Cultural Heritage Management and Archaeological Research in the Americas and Europe A Forum on SAA and EAA Collaboration*

The theoretical issues about cultural heritage strategies in the Americas and in Europe show up differences, but even within Europe a special case is the cultural heritage of countries of the former socialist bloc. The contribution will shed light upon the - sometimes controversial - strategies and practice in Central and Eastern Europe.

[110] *Discussant*

Barba, Luis (Universidad Nacional Autonoma De Mexico) and Isabel Villaseñor (Posgrado Unam)

[92] *Lime Technology And The Mesoamerican Cultures*
Lime is a very important technological discovery for Mesoamerica. This material implies a substantial change in preindustrial technology that involved large quantities of energy and sophisticated social organization. Lime mortars allowed over the years to build thin walls and even vaults. They also favored the urbanization process by providing hygienic surfaces and preventing plagues and epidemics. In addition, lime made it possible to get the maximum energy out of the corn crops through the lime processing, the nixtamalization. This paper shows recent developments in the study of ancient lime technology, calling attention to this valuable product.

[92] *Discussant [92]* *First Chair*

Barber, Sarah (University of Central Florida), Devin White (Integrity Applications Incorporated) and Allison Matos (University of Central Florida)

[38] *Modeling Coastal Trade in Precolumbian Oaxaca*

The identification of transportation corridors using GIS is a useful technique for examining ancient economic and political relationships. In Mesoamerica, where the provisioning of highland cities with coastal resources was an important factor in the development and expansion of complex societies, identifying highland-lowland transportation corridors has proven to be a fruitful avenue of research. However, GIS has not been widely used to consider the costs and advantages of maritime, inter-estuarine, and land-based coastal trade. In this paper, we present a least-cost analysis of land and water-based transportation routes along the Pacific Coast of Mexico.

[215] *First Chair*

Barber, Sarah [5] *see Brzezinski, Jeffrey S.*

Barca, Donatella [92] *see Crisci, Gino M.*

Barca, Kathryn G. [55] *see Rodriguez, Erin C.*

Bárcena, J.Roberto [103] *see Cahiza, Pablo A.*

Barden, Allison (UC Berkeley) and Shanti Morell-Hart (UC Berkeley)

[62] *GIS Applications in Mesoamerican Archaeology: Spatial Distribution of XRF-Sourced Obsidian Artifacts at Puerto Escondido, Honduras*

The Formative site of Puerto Escondido, excavated in the mid-1990s, is the oldest inhabited site thus far identified in Honduras. Artifacts yielded by excavations include paleoethnobotanical remains, human burials, faunal remains, ceramics, carbon, shell, and obsidian. Exhibited here is the input of X-Ray Fluorescence Spectrometry (XRF) obsidian analysis data into an ArcGIS model. Using a grid-unit map created in ArcGIS, the concentrations of these materials are plotted geographically. Spatial distribution of obsidian flakes, cores, and blades are specifically targeted, and related to material sources. The distribution of obsidian in various activity areas is explored in relation to theories of practice.

Bardolph, Dana (University of California Santa Barbara)

[229] *Pluralism and Practice: Negotiating Identity in the Late Prehistoric Central Illinois River Valley*
Central to the archaeology of culture contact is the

assessment of cultural change and continuity through materials. However, quantifying material attributes alone masks variability central to understanding contact situations. Reframing questions in terms of practice moves analysis beyond solely that of materials themselves. Recognizing that different opportunities and choices existed for social actors in pluralistic settings, I explore construction of Native American social identity using ceramic, lithic, and macrobotanical data from the Late Prehistoric Lamb site in the Central Illinois River Valley. Such archaeological materials point to people in the past—procuring, processing, preparing, serving, consuming—in essence, creating communities of practice.

[229] *First Chair*

Barfod, Gry [194] *see Jorgenson, Gina*

Barge, Meghan and Thomas Wake (University of California, Los Angeles)

[186] *Vertebrate Consumption in an Elite Household at La Blanca, Guatemala*

Vertebrate remains constitute the most enduring dietary evidence recovered from the Middle Formative Period center of La Blanca, Guatemala. Analysis focuses on species and element representation through time in Mound 11. A primary research question concerns the distribution of animals in relation to social status. Variation in vertebrate consumption patterns may help to track social differentiation and changing elite occupation. Dietary patterns observed at La Blanca are compared to vertebrate faunal assemblages from earlier sites such as El Varal, Salinas la Blanca and Paso de la Amada to examine regional patterns of higher animal use during the Middle Formative Period.

Barker, Alex (University of Missouri)

[53] *Is More Enough? Population, Resources and the Problem of Sufficiency: Three Cases from the Southeastern US*

The rise of sociopolitical elites generally assumes control and command of surplus production. Because the underlying notions of sufficiency, surplus and nominal groups size are so basic to our conceptions of complexity in middle range societies--and at first glance seem relatively transparent and straightforward constructs-- we rarely examine these notions critically, particularly in relation to one another. Three case studies from the American Southeast are considered to explore the relationships between scale, sufficiency and surplus in prestate hierarchical societies, and to illuminate the different ways these notions are employed both in prehistory and by prehistorians.

Barker, Andrew (University of North Texas), Nora Reber (University of North Carolina at Wilmington) and Steve Wolverton (University of North Texas)

[19] *Results of Round Robin Part II: Food Mixtures and Residue Diagenesis*

In order to further refine techniques in archaeological residue analysis, earthenware bowls were used to cook a mixture of foods. After being rinsed with water, one bowl was stored in cold, dry conditions while another was buried in clay-rich soil for one month. Following recovery of the buried sample, each bowl was cut into a series of vertical transects. These transects were distributed to

several independent laboratories so that a variety of residue analysis methods could be applied. This presentation summarizes the results of these experiments and evaluates the effects of short-term weathering on our ability to identify residues.

[19] *First Chair*

Barker, Andrew [19] *see Venables, Barney J;* [19] *see Stevens, Stanley M.*

Barker, Claire (University of Arizona) and Patrick Lyons (Arizona State Museum)

[264] *Exploring the Meaning of the Late Prehispanic Yellow Ware Horizon*

During the late A.D. 1200s and early 1300s, a color shift occurred that cross-cut wares and types in many areas from northern Mexico to the Hopi Mesas and the northern Rio Grande. In the northern U.S. Southwest, pottery characterized by black and white painted designs on a red or an orange background was replaced by pottery painted in black and red on a buff or a white background. In this paper, we examine the chronology of this phenomenon and we consider what it might mean in the broader social context of feasting, the Southwestern Cult, the Katsina religion, and the Kayenta diaspora.

Barkwill Love, Lori (University of Texas at San Antonio)

[187] *From the Receiving End: A Ceramic Analysis of a 13th Century Site in the Northern Rio Grande*

Traditionally, archaeologists believed Mesa Verde inhabitants migrated to the Northern Rio Grande region. However, little research has been conducted on 13th century sites in the Northern Rio Grande to assess the possibility of this migration. To help fill this gap, I am conducting attribute and compositional analyses on the ceramics from Pueblo Alamo (LA 8), a 13th century site in the Santa Fe/Galisteo Basin area, New Mexico. By examining the relationship between technological style and design style, a better understanding of 13th century ceramics may be gained, as well as insight into the social identity and interaction with other regions.

Barnash, Alicia [139] *see Bernardini, Wesley*

Barnes, Ethan (University of Cincinnati)

[195] *Perceived Identity and the Archaeological Record: Material Culture in Early Twentieth Century Ohio*

Although many studies about the American past have focused on the people who had the socioeconomic or political clout to create a legacy, historical archaeology is well-equipped to focus on those seemingly forgotten. Utilizing both historical records and archaeological evidence acquired during a systematic surface survey of an early twentieth century homestead in southwestern Ohio, this paper discusses how the former occupants expressed social identity through material culture and consumer choices. Explicating the dissonances that arise between these historical and material resources, this research ultimately addresses why people in rural Ohio envisioned, and subsequently displayed, a perceived social status.

Barnett, Kay [201] *see Diederichs, Shanna R.*

Baron, Joanne (University of Pennsylvania)

[28] Classic Maya Deity Categories

Much has been written about Classic Maya (AD 250-900) religious practices. Part of this scholarship has been devoted to the identification of deities and to their enduring nature through time and across space. Other scholars have observed a wide variety of Classic period deities and their local nature. This paper uses evidence from Classic Maya inscriptions to demonstrate that universal and local are in fact two distinct categories of deity recognized by the Maya themselves. Rituals devoted to their veneration were distinct, as was vocabulary used to describe them. This has broad implications for our understanding of Maya religious practice.

Barrera Rubio, Alfredo (Centro INAH Yucatan)**[221] Social and Political Dynamics at Kulubá, Northeastern Yucatán**

Late Classic and Terminal Classic area two important moments in the sociocultural development of Kulubá. During these two cultural periods, the archaeological evidence suggest a dynamic interrelationship with two political units of eastern Yucatán: Ek Balam y Chichén Itzá: The architecture, pottery, artifacts, and obsidian trade, give us evidence of social and political dynamics and its implications in the territorial control of the northeastern Yucatán and their access to the coast. These and other aspects are analyzed in Kuluba and their surrounding area.

Barrett, Jason (Texas A&M University)**[116] Social Adaptations to Critical Resource Availability, Control, Exploitation, and Depletion among the Lowland Maya**

The distribution of tool-stone varied considerably across lowland Maya landscapes and regions, with sites occupying different positions along a continuum of resource availability. Control over this critical economic resource functioned as a finance mechanism for political elites in northwestern Belize, who administered stone tool production. However, tool-stone is not a renewable resource and intensive export-oriented production eventually led to widespread resource depletion. Resource stress reached its apex during the Late Classic period, and conservation measures became increasingly employed. Much of the region was abandoned during the Terminal Classic, and critical resource depletion is likely to have been a contributing factor.

Barrientos, Gustavo (Facultad de Ciencias Naturales y Museo, Universidad Nacional de La Plata), Fernando Oliva (UNR; UNLP), Luciana Catella (CONICET; UNLP), Jorge Moirano (UNLP) and Cecilia Panizza (ICPBA)

[101] The Archaeological Study of a Late Holocene Hunter-Gatherer Population Dispersal in Central Argentina

A number of evidence suggests that, shortly after 1000 cal years BP, a population dispersal from northeastern Patagonia (ca. 40° S, 63° W) towards northern regions occurred. Such a dispersal allegedly reached areas situated as far as 500 km away from the most likely population center, penetrating well deep into the Pampean Region in Central Argentina. The aim of this paper is to present the results of a simulation model designed to estimate dispersal rates under different

demographic scenarios, and to discuss such results on the basis of different lines of archaeological evidence.

Barrientos, Gustavo [101] see Belardi, Juan B.

Bartelink, Eric (California State University, Chico), Melanie Beasley (UC San Diego), Jelmer Eerkens (UC Davis), Karen Gardner (California State University, Chico) and Mark Griffin (San Francisco State University)

[194] Ancient Human Diet and Subsistence in the Prehistoric Central California Delta

This presentation examines patterns of ancient human diet in the Sacramento-San Joaquin Valley Delta of central California. The focus is on recent isotopic results from CA-CCO-548, a mid-to-late Holocene site (ca. 4000-3000 B.P.) located along Marsh Creek in Contra Costa County. Using stable carbon and nitrogen isotope data derived from human bone collagen and carbon isotopes of bone apatite (n=198), we evaluate the relative importance of marine and terrestrial resources to the diet. The results indicate that the CCO-548 population primarily consumed terrestrial and freshwater resources, with a small input of marine resources from the San Francisco Bay Estuary.

Bartelink, Eric J. [255] see Johnson, Phillip R. [194] see Beasley, Melanie M. [194] see Gardner, Karen S.

Barton, C. Michael [36] see Bergin, Sean M. [36] see Ullah, Isaac I.

Barton, Loukas [62] see Reid, Devon**Barton, Michael [25] see Badal, Ernestina****Bartoy, Kevin [3] see Schneyder, Stacy L.**

Bar-Yosef, Ofer (Harvard University), Eliso Kvavadze (Institute of Paleobiology, National Museum of Georgia), Anna Belfer-Cohen (Kimmel Center for Archaeological Science, Weizmann Institute of Science), Nino Jakeli (Georgian State Museum, Department of Archaeology) and Zinovi Matskevich (Peabody Museum, Harvard University)

[203] The Recovery and Analysis of Upper Paleolithic Wild Flax Fibers at Dzudzuana Cave, Republic of Georgia

Microscopic wild flax fibers were identified during standard palynological analyses of samples collected systematically from Upper Paleolithic units (D, C and B) dated to 34-32, 25-19, 13-11 Ka BP at Dzudzuana cave, Republic of Georgia. The archaeological sequence, some 3-4 meters thick, is rich in lithics and animal bones from the early Upper Paleolithic of the Caucasus and lasts, with several depositional gaps, to late Neolithic time. Apparently the clayey deposits, rich in carbonates, preserved large assemblages of non-pollen palynomorphs, including microfossils of various fungi, algae, cormophytes, and animal hair revealing both the paleoecological conditions and evidence for anthropological activities.

[114] Discussant**Basgall, Mark (CSU Sacramento)****[262] Explaining Variation in Paleoindian Assemblages of**

China Lake and the Greater Mojave Desert

The Pleistocene Lake China basin and adjacent lowlands preserve one of the richest records of terminal Pleistocene-early Holocene human occupation in the southwestern Great Basin. Similar, if more limited, evidence of early settlement has been documented in other sectors of the Mojave Desert. Differences in the archaeology of these scattered localities prompt intriguing questions regarding variation in the content and density of local sites/assemblages, the nature of early subsistence-settlement systems, and how changing ecological parameters influenced population distributions during this era.

[150] see Norton, William L. [239] see Larson, William E.

Bauer, Andrew (University of Chicago)

[189] *Materials and Materiality: Soils, Stones, and Social Landscapes in Iron Age South India*

In this paper I explore how Iron Age social differences were negotiated in and through the production of a symbolic and material field—complete with nonhuman participants that informed, constrained, and enabled the imaginative possibilities of strategic actions during the period. I suggest that the cultural meanings of particular places were manipulated through the physical modification of things and material forms—forms that structured movement, limited access, changed environmental conditions, and altered perceptions. These forms were not unidirectionally built by people, however, but also built by dynamic environmental constituents that contributed to their uses, maintenance, and social histories.

[189] *Second Chair*

Bauer-Clapp, Heidi (University of Massachusetts Amherst), Laura Solar Valverde (Instituto Nacional de Antropología e Historia) and Lisa Rios (University of Massachusetts Amherst)

[237] *The Blessing and the Curse of Taphonomic Processes: A Bioarchaeological Analysis of a Shaft Tomb from Southern Zacatecas, Mexico*

The discovery of an unlooted shaft tomb in Southern Zacatecas, Mexico, offered an undisturbed example of this mortuary tradition common in West Mexico during the Formative and Early Classic eras (300 B.C. to A.D. 400). However, 2000 years of taphonomic processes took their toll on the tomb's contents. This paper reviews archaeological and ethnographic resources for understanding these taphonomic processes and the excavation techniques that preserved as much data as possible. We focus on four skeletons from the tomb: two individuals joined by a shell belt and the two adjacent individuals who held atlatis in their hands.

Baumann, Timothy (Glenn A. Black Laboratory of Archaeology, IU), G. William Monaghan (Glenn A. Black Laboratory of Archaeology, Indiana University) and Christopher Peebles (Glenn A. Black Laboratory of Archaeology, Indiana University)

[82] *The Legacy of Glenn A. Black and the WPA Excavations at Angel Mounds (12Vg1)*

From 1939 until 1942, Glenn A. Black directed a WPA excavation at the Angel site (12Vg1), a large palisaded Middle Mississippian agricultural town on the Ohio River, near Evansville, Indiana. This Depression-era research included expansive excavations on the East Village,

Mound F, and a segment of the outer Palisade, which together by volume still represents the majority of exploration done at this site. The work of Black and his WPA crew has led to nearly 80 years of continuous research on Angel Mounds, establishing it as a formative site for professional archaeology in Indiana and the Midwest.

Baxter, Carey (USACE ERDC-CERL), Dick Gebhart (USACE ERDC CERL), Michael Hargrave (USACE ERDC CERL), H. Allen Torbert (USDA-ARS) and Antonio Palazzo (USACE ERDC CRREL)

[162] *Quantifying military training impacts using soil chemical and mechanical properties*

Evaluating the impact of recent military training on archaeological deposits is complicated by earlier impacts. At many sites, the uppermost stratum is already severely impacted by farming, timbering, grazing, and earlier military activities. Intact deposits may remain in features that extend into deeper, undisturbed strata. Ongoing research is developing a method to identify the onset and quantify the extent of new disturbance based on changes in soil mechanical properties, organic matter, and chemical elements at the A/B or A/E interface. Initial results from Fort Benning suggest that metals such as Cr, Cu, Pb, and Zn, which are relatively immobile, may be useful indicators.

Baxter, Jaimie (Humboldt State University)

[148] *Spatial Visualization: Dos Hombres to Gran Cacao Settlement Survey*

As researchers, archaeologists understand the importance of geography and its emphasis on spatiality. An essential component to analyzing the Ancient Maya water and landscape management practices is spatial visualization. By using a Geographic Information System (GIS), the eastern Petén region and its many archaeological sites come to life by way of spatial visualization and predictive modeling. GIS can be used for large-scale regional analysis as well as predictive modeling of settlement patterns and land use. GIS will provide a vital element to the analysis of water features and landscape elements in correlation with the geomorphology and regional environmental zones.

Baxter, Jaimie [148] see Cortes-Rincon, Marisol [148] see Boudreaux, Sarah N.

Baxter, Jane (DePaul University) [79] Discussant

Baxter, Paul (Museum of Natural and Cultural History, U. Oregon), Thomas Connolly (University of Oregon Museum of Natural and Cultural History) and Craig Skinner (NW Research Obsidian Studies Lab)

[160] *Obsidian Use in the Willamette Valley and Adjacent Western Cascades of Oregon*

The distribution of geochemically characterized obsidian has long been used to give insight into prehistoric trade networks. We examine patterning in the obsidian sourcing data from 4953 obsidian artifacts recovered from 115 sites in order to understand obsidian procurement and use within the Willamette Valley and adjacent Western Cascades of Oregon. Within this data set, twenty-four obsidian sources from six regions of Oregon and northern California are represented

suggesting the presence of long term trade routes and distribution networks.

Baxter, Paul [160] *see Connolly, Tom*

Bay, George [221] *see Parker, Evan A.*

Bayala, Pablo [71] *see Flensburg, Gustavo*

Bayham, Frank (California State Univ., Chico), Erik Martin, Adam Gutierrez (California State University, Chico), Christopher O'Brien (Lassen National Forest) and Antoinette Martinez (California State University, Chico)

[77] *The Last Meals of the Yahi: Contact Period Faunal Remains from Kingsley Cave*

Repatriated archaeofaunal materials from Kingsley Cave have a degree of stratigraphic integrity and, based on associated points types and beads, the uppermost strata are temporally associated with Contact Period. Comparison of these remains with the underlying prehistoric materials may provide a window into the refuge survival strategies employed by Ishi and his fellow Yahi in the decades preceding 1911. We here explore taxonomic composition, economic utility and fragmentation analyses to determine how and in what ways mundane subsistence activities in the foothills of the Sierra Nevada range were impacted by the encroachment of Euroamericans.

Bayham, Frank [77] *see O'Brien, Christopher [77]* *see Martinez, Antoinette*

Beach, Timothy (Georgetown University) and Sheryl Luzzadder-Beach (George Mason University)

[223] *Soil Evidence for Use and Formation of Wetland Fields and Canals in Northern Belize*

We use soil evidence from 2009-2010 excavations to understand ancient Maya use, formation, and chronology of wetland fields and canals near Lamanai, Blue Creek, and Dos Hombres in northern Belize. The lines of soil evidence include micromorphology, stratigraphy, black carbon, magnetic susceptibility, general chemistry, carbon isotopes, and elemental analysis. We also compare these with paleoecological evidence, including pollen, phytoliths, and macrobotanicals, from different soil layers and field and canal zones of the wetlands. These lines of evidence show crops that range from maize to fruits, and imply different management strategies over Late Holocene environmental changes.

[249] *Discussant*

Beach, Timothy [148] *see Luzzadder-Beach, Sheryl [238]* *see Krause, Samantha*

Beardmore, Rebecca (University College London)

[54] *An approach to understanding change in the late Bronze and early Iron Age communities of Kazakhstan through geoarchaeology and phytolith analysis*

Using case studies from the ancient delta of the Syr Darya river and the Talgar alluvial fan, this paper will highlight ways in which geoarchaeology and phytolith analysis can shed light on changes seen in the archaeological record in the late Bronze and early Iron Ages in the territory of Kazakhstan. The theoretical and practical aspects of such research will be explored while

seeking to contextualize this approach as part of multidisciplinary archaeological investigation. The paper will demonstrate how such a study might further our understanding of change and continuity in the prehistoric communities of Central Asia.

Beasley, Melanie (University of California, San Diego), Jack Meyer (Far Western Anthropological Research Group, Inc.), Eric J. Bartelink (CSU, Chico) and Randy Miller (CSU, Chico)

[194] *Human Bone Diagenesis in a Prehistoric Burial Mound from the Central California Delta:*

Bioarchaeological and Geoarchaeological Approaches

This presentation examines the use of geoarchaeology and measures of diagenesis to understand burial preservation at archaeological sites. Stable isotope analysis of human bone aims to recover in vivo signatures from prehistoric people. Recent isotopic results from CA-CCO-548, a mid-to-late Holocene site (ca. 4000-3000 B.P.) located along Marsh Creek in Contra Costa County will be a case study for comparing differences in burial preservation. Using standard diagenesis indicators from analysis of human bone collagen and apatite (n=242), the results indicate the possibilities of using geoarchaeology as an additional prescreening tool to select viable isotope samples.

Beasley, Melanie [255] *see Schoeninger, Margaret J. [194]* *see Bartelink, Eric J.*

Beaubien, Harriet (Smithsonian - Museum Conservation Institute), Ainslie Harrison (Smithsonian-National Museum of the American Indian), Kim Cullen Cobb (Smithsonian-National Museum of the American Indian) and Richard Cooke (Smithsonian Tropical Research Institute)

[193] *Piecing together a history of goldworking in Pre-Columbian Panama: the XRF contribution*

In studies of Pre-Columbian metalworking, Panama has received comparatively less attention than neighboring regions in the Americas, despite numerous gold objects attributed to Panama in collections, ethnohistoric accounts and more recent archaeological evidence, which indicate an active goldworking tradition. To add a technological perspective, the Smithsonian's Museum Conservation Institute, in collaboration with the Smithsonian Tropical Research Institute (Panama), is conducting a large-scale technical study of Pre-Columbian Panamanian gold, to date comprising key collections at the Smithsonian Institution and in Panama, including recent scientifically excavated finds. This paper discusses the research contribution of portable x-ray fluorescence analysis.

[250] *Discussant*

Beaudry-Corbett, Marilyn (Cotsen Institute of Archaeology, U.C.L.A.) [250] *Discussant*

Beaver, Joseph (University of Minnesota Morris)

[180] *Efficiency and Effectiveness of Sex-Biased Ungulate Hunting: Simulation Modeling and Implications*

In polygynous species, including most ungulates (hoofed animals), far fewer males than females are required to produce each new generation. Modern sport hunting takes advantage of this to allow higher overall hunting rates by focusing hunting on males. A simulation model

of predator-prey interactions is used here to examine the circumstances under which human subsistence hunters can maximize their total harvest by biasing hunting towards male ungulates.

Beck, Charlotte (Hamilton College) and George Jones (Hamilton College)

[94] *Moving into the Mid-Holocene: The Paleoarchaic/Archaic Transition in the Intermountain West*

In most of North America the transition from Paleoindian technology to that known as Archaic appears gradual, especially with respect to point technology. In the East, for example, fluting continues after Clovis with Cumberland, Simpson, and Dalto, while notching seems to evolve through the 'waisting' of earlier forms. In the Intermountain West, however, this transition is more abrupt: stemmed forms, which are at least coeval with Clovis elsewhere, persist unchanged for about 4,000 years and then disappear along with other distinctive components of the toolkit. Here we explore possible explanations for such an abrupt technological change in this region.

Beck, Charlotte [262] see Jones, George T.

Beck, Margaret [187] see Abbott, David R.

Beck, R. Kelly [126] see Broughton, Jack M.

Beck, Robin (University of Michigan)

[86] *Making Communities of Aggregations in the Formative Lake Titicaca Basin*

One of the greatest challenges to any new form of community is to balance the need for common identities with the need for recognizing the distinctions among diverse constituencies. The built environment offers an important medium for materializing these dual challenges in the context of a recently aggregated population. In Bolivia's Lake Titicaca Basin, Middle Formative villagers (800-250 BC) built platform complexes that visually dominated everyday life in their respective communities. These complexes simultaneously anchored villagers to a common identity while legitimizing asymmetric relations among kin-based constituencies. This forging of identity and difference was essential for making communities of aggregations.

Becker, Rory (USDA-NRCS)

[87] *Across the Landscape: The Potentials and Limitations of LiDAR Use in Identifying Historic Trails*
Historic trails can present a difficult situation for those of us employed in the business of cultural resource management. These historic properties can span entire states, even connecting different regions of the county, and, at the same time, may be difficult to identify out on the landscape. Light Detection and Ranging (LiDAR) technology may prove a useful tool in both the identification and management of these historic properties.

Becker, Sara (University of North Carolina, Chapel Hill)

[245] *Labor in the South Central Andes: A Bioarchaeological Study of Activity within the Tiwanaku Polity*

The control and distribution of labor is an essential topic for understanding the character and development in prehistoric state formation. Within this paper, I provide a comparative framework of specific skeletal evidence to the archaeological record by using biological markers to infer how habitual activity varies within Tiwanaku state formation both in the Titicaca Basin, Bolivia and the Moquegua Valley, Peru. These data provide insight into the routine of individuals and their contributions to the social groups in which they live, revealing divisions of labor such as status or gender differences.

Becker, Sara K. [245] see Alconini, Sonia

Beckwith, Sue (University of Toronto)

[201] *The Built Environment organizing Social Encounter: Public and Private Space in Pueblo Shé, New Mexico*

Puebloan architecture structured visibility and utilized proxemics to enhance or inhibit human co-awareness which ultimately promoted a sequential hierarchical social organization. Visibility graph analysis demonstrated that the built environment of Pueblo Shé, New Mexico (A.D. 1325-1600) controlled social encounter through the development of a plaza and entranceway system. Visually connected areas afforded opportunities for potential social encounter. Small plazas with limited intervisibility to other areas created private spaces to promote social bonding in subsections of the population. While large and highly visually connected plazas provided public space for community wide ceremonial performances.

Becker, Charles [69] see Conrad, Geoffrey W. **[260]** see Foster, John W.

Beekman, Christopher (University of Colorado Denver)

[98] *Mesoamerican Symbols of Authority in the Shaft Tomb Figures of West Mexico*

The hollow ceramic figures of Jalisco, Colima, and Nayarit are still commonly treated as either idyllic representations of people engaged in everyday activities, or as conceptually abstract depictions of shamans and their transformations. These interpretations date from the 1960s when the imagery had little archaeological context. The earliest interpretations of the artwork in the 1940s are more consistent with current archaeological data. Bodily decoration makes reference to Mesoamerican concepts of rulership and its basis in control over nature, and identifies both males and females as holders of diverse positions in a system of diffuse legitimate political authority.

[98] *Second Organizer* **[98]** *First Chair*

Beier, Zachary (Syracuse University)

[121] *"All peaceable and quiet": Reading the Role of Military Labor at the Cabrits Garrison, Dominica (1765-1854)*

Historical archaeologies of the African Diaspora in Caribbean colonial history have focused primarily on the economic, social and cultural aspects of plantations, while the military sites necessary for their defense have received far less attention. This paper explores how the everyday lives of non-Europeans and Europeans intersected at the Cabrits Garrison on the island of

Dominica. Using datasets collected from eighteenth and nineteenth century residential quarters including enslaved laborers and soldiers I demonstrate how interactions within military fortifications were critical in the development of colonial identities during a period of conflict and economic volatility across the Atlantic World.

Bejko, Lorenc [27] *see Galaty, Michael L.*

Belardi, Juan (Univ Nac de la Patagonia Austral) and Gustavo Barrientos (CONICET - UCNyM UNLP - UNCPBA)

[101] *Hunter-gatherers mobility and guanaco (Lama guanicoe) hunting tactics in the Cardiel Chico plateau (Southern Patagonia, Argentina)*

The environmental and archaeological distributional data (lithics and rock art) show a primarily seasonal and logistical use of the Cardiel Chico basaltic plateau (1000 m.a.s.l.), fitting the Late Holocene picture already known for other surrounding plateaus. The archaeological landscape consists of a rather continuous, low density artifactual distribution where the highest peaks in density are associated to lagoons. Besides, the high frequency of hunting blinds ("parapetos") together with their size, shape, topographic locations and lithic assemblages suggest different guanaco hunting tactics. The archaeology of the plateaus highlights the other side of the coin represented by the lower basins.

Belfer-Cohen, Anna (The Hebrew University of Jerusalem)

[114] *The Nature of the Georgian UP as recognized from the sites of Dzudzuana and Kotias Klde*

The lithic assemblages deriving from the Upper Palaeolithic sequences at the sites of Dzudzuana cave and Kotias Klde rockshelter compare well with other Upper Palaeolithic assemblages from past excavations in western Georgia. They bear characteristics which distinguish them from contemporaneous assemblages known from western Eurasia, though they exhibit common Upper Palaeolithic traits, such as an overall rise in the blade/bladelet component. Though the reduction sequences employed are known elsewhere, their chronological association differs, indicating an independent local evolution, influenced most probably by ideas and concepts that derived from outside the region, but are firmly incorporated within the matrix of local tradition.

[203] *see Bar-Yosef, Ofer* **[86]** *see Goring-Morris, Nigel*

Belknap, Samuel (University of), Cecil Lewis (University of Oklahoma), Raul Tito (University of Oklahoma), Robert Ingraham (University of Maine) and Kristin Sobolik (University of Maine)

[206] *Oldest Dog in the New World*

The oldest identified dog in the New World has been found in a human paleofecal sample recovered from Hinds Cave in Texas and directly dated to 9,260±170 Cal. B.P. The bone was identified both visually and through ancient DNA analysis of the bone. The age of the material predates all published genetic data by 7800 years. These data substantiate the Eurasian origin of New World domestic dogs, the accompaniment of dogs with humans during the peopling of the Americas, and the earliest use of dogs as a food source.

Bell, Arran [77] *see Crawford, Kristina M.*

Bell, Colleen (University of Tulsa)

[74] *Blade Caches at Ayn Abu Nukhayla*

This paper analyses the contents of two blade caches found in the site of Ayn Abu Nukhayla, an Early Neolithic, PPNB (9,500 BPcal) settlement in southern Jordan. The first cache is comprised of 51 opposed platform blades, both retouched and unretouched, and points. The second contains 80 such blades mostly unretouched. The social, demographic, and economic implications of stores, stocks, and caches are explored in the context of those from Ayn Abu Nukhayla.

Bell, Ellen (California State University, Stanislaus), Cassandra R. Bill (M.A.R.I. / Tulane University) and Marcello A. Canuto (M.A.R.I. / Tulane University)

[31] *Who's at the Top in a 'Top-Down' Approach?: Social Differentiation and Administrative Strategies in the El Paraíso Valley, Department of Copan, Honduras*

While the dichotomy between "bottom-up" and "top-down" models of social differentiation and political organization is pervasive in the archaeological literature, the elites whose actions are scrutinized in top-down approaches often remain numinous, faceless entities—metaphors for power rather than flesh and blood people pursuing social, political, ideological and economic goals. In this poster we draw on recent archaeological research to explore the wide variety of actors who sought to exert influence in the El Paraíso Valley, western Honduras, during the Classic period (AD 250-900). We also examine the dual-center model of political organization created through these complex, contested interactions.

[31] *First Chair*

Bellew, Serena [185] *Discussant* **[185]** *First Moderator*

Bellifemine, Viviana (University of Cambridge, UK)

[71] *Indicators of Inka Imperial Governance Interactions reflected in Mortuary Practices in the Cuzco Valley*

The success of the expansion of the Inka Empire was based on multiple governing strategies applied to conquer and control their subjects. The Imperial governance interaction is reflected in the mortuary behavior through the agency of the actors involved, which is expected to present distinct characteristics. A variety of sites are re-examined to refine a "Cuzco-Inka style" of mortuary treatment, which is used to compare and contrast with that of subject populations. Several sites are explored to determine variations in the governance interaction between the Inka state and different subject populations. These results are compared with accounts from ethnohistoric chronicles.

Bellifemine, Viviana [194] *see Nechayev, Irina*

Belmaker, Miriam (Harvard University)

[218] *From Africa and beyond: Shifting paradigms in the ecological milieu for Early Pleistocene hominin dispersals from Africa*

Since the excavations of the earliest Pleistocene sites out of Africa in the 1960's, one of the main paradigms was the idea of the expansion of the African Savanna and the dispersal of hominin with other taxa. Since then, the identification of new sites, taxonomic and paleoecological revised methodology and the

diversification of international communication have shifted this paradigm and promoted new interpretations of this issue. This paper will describe history of research and illuminate the role faunal identification and methodological development played in understanding external vs. internal hypotheses in 'Out of Africa I' models in the 20th century.

Bement, Leland (Oklahoma Archeological Survey, OU) and Brian Carter (Oklahoma State University)

[155] *From Mammoth to Bison: Changing Clovis Prey Availability at the End of the Pleistocene*

Clovis hunters of the North American Great Plains are known for their ability to hunt mammoths. Less is known of their hunting strategies for other large animals. Investigation of the southern Plain's Jake Bluff site identified a Clovis bison kill in an arroyo. Jake Bluff provides the opportunity to study changing hunting strategies, including landscape use, related to changing prey species availability as mammoths became extinct. The Jake Bluff site yielded Clovis-style projectile points, 22 Bison antiquus, and a late date of 12,838 cal BP.

Bemmann, Jan (University of Bonn)

[54] *The Orkhon Valley – Center of several Medieval Steppe Empires. The Testimony of the Archaeological Record*

Between 2008-2010 an international, interdisciplinary research project carried out surveys in the middle and upper Orkhon Valley. One goal was the documentation of all visible walled enclosures, to date them, to analyse their context and function and to compare them with the well-known cities of Karakorum and Kara-Balgasun. As a result most enclosures belong to the Uighur period. Only few belong to the time of the Mongol World Empire. There are no indicators that the Orkhon Valley was a political center during the Xiongnu period, however that may have looked like. A palace-city of the Manchu period was mapped completely.

Bencze, Jennifer (University of California Davis), Christyann Darwent (University of California Davis) and Jelmer Eerkens (University of California Davis)

[181] *Frozen Soils: Using Chemical Analyses to Discern Prehistoric Inuit Household Activities*

In 2009-2010 six prehistoric Thule winter houses were excavated at the sites of Qaqaitut, NW Greenland (ca. AD 900-1500), and Cape Espenberg, NW Alaska (ca. AD 1200-1400). Soil samples were taken from every 50cm quadrant across the house and tunnel floors, which in turn were analyzed for pH and for carbon and nitrogen isotopic concentration. Spatial analysis of these values yielded distinct inter- and intra- house variations, which may provide insight into whether the journey from Alaska to Greenland facilitated a change in how Thule people organized and used their interior spaces.

Benden, Danielle [229] see *Pauketat, Timothy R.*

Bendremer, Jeffrey (Salish Kootenai College)

[113] *Training Tribal Archaeologists and Tribal Historic Preservation Staff: Curriculum Development and Pedagogical Challenges*

Every American Indian Tribe is engaged in efforts to preserve, protect and investigate cultural resources. Tribes also routinely consult with government agencies

on issues that affect cultural properties, archaeology and historic landscapes. Most tribes fulfill these responsibilities through cultural departments and/or THPOs. Few formal educational alternatives to general degrees in anthropology, archaeology or Native American studies exist to train these practitioners. Tribal colleges are well positioned to provide training to students intent on working in tribal historic preservation. Pedagogical, administrative and cultural challenges in instituting such a program are discussed as is a curriculum being developed at Salish Kootenai College.

Benjamin, Jonathan (Wessex Archaeology and University of Edinburgh)

[89] *Managing submerged prehistoric archaeology: Research objectives and cooperation with industry*

'Submerged prehistory' (archaeology and paleolandscapes) is generating increasing interest on an international scale. A European framework designed to facilitate training, collaboration and knowledge-transfer is now underway and advancements in theoretical and practical aspects of this emerging field will help to define the methods used to study and evaluate prehistoric sites that are now underwater. Furthermore, offshore work in the United Kingdom demonstrates effective collaboration between archaeologists and marine industry. Such cooperation provides insight the relationship between heritage management (CRM) and industry in the marine environment; an activity that should be internationally encouraged.

Bennett, Rochelle (Bureau of Reclamation)

[83] *Analysis of Human Remains Recovered From Fort Craig Cemetery, New Mexico*

Fort Craig Cemetery lies on Bureau of Reclamation land in south central New Mexico and was primarily used as a military cemetery from the 1850's to the 1880's. During the summer of 2007, a team of contract and Bureau of Reclamation archaeologists disinterred human remains from Fort Craig Cemetery, after discovering it had been looted and additional human remains may still be present. Sixty-three individuals and one surgeons pit were recovered. This session presents the result of the skeletal analysis including data on demography, pathology, and trauma.

Bentley, Alex [255] see *Whittle, Alasdair*

Bentley, Sylvia (Utah Valley University) and Haagen Klaus (Utah Valley University)

[156] *Reconsidering Retainers: Offerings, Sacrifice, and Burial in Ancient Peru*

On the north coast of Peru, retainer burials are often assumed to be sacrifices of wives or male kin of a paramount lord. Critical synthesis of archaeological, taphonomic, and bioarchaeological data of retainers spanning Moche and Middle Sican tombs indicates that not all retainers were sacrifices nor did they experience synchronous deaths with the principal personage of their associated tombs. However, biodistance analysis cannot reject the hypothesis that some female retainers were wives. Detailed and careful consideration of the "retainer" concept is warranted highlighting relationships between sacrifice, gender, kinship, and mortuary patterns in ancient Peru.

Berenguer, José [267] *see Salazar, Diego*

Berg, Caryn (Left Coast Press) [215] *First Moderator [215] Second Organizer*

Bergin, Sean (School of Human Evolution and Social Change, ASU), Isaac Ullah (Arizona State University), C. Michael Barton (Arizona State University), Hessam Sarjoughian (Arizona State University) and Gary Mayer (Southern Illinois University Edwardsville)

[36] *Simulating Neolithic Landscape Dynamics: A Coupled ABM-GIS Model of Agro-Pastoral Systems in Eastern Spain*

We examine the impact of multiple household-level subsistence strategies on landscape dynamics within a modeling environment called AP-SIM, which couples ABM, GIS, vegetation, and climate models to permit simulation experiments on human-environmental interactions. Within AP-SIM, household agents make decisions about farming and herding strategies, based upon their surrounding landscape. These farming and herding practices then feed into models of landscape change. In the AP-SIM environment, we compare the socio-ecological consequences of different strategies as a series of 'experiments' focused on Neolithic hamlets in a recreated Holocene landscape of the Penaguila Valley (eastern Spain).

Bergin, Sean M. [42] *see Roberts, Christopher M. [36] see Ullah, Isaac I.*

Bernal, Darío [92] *see Domínguez-Bella, Salvador*

Bernal, Judy (California State University Long Beach), Gregory Holk (The Institute for Integrated Research in Materials, Environments, and Societies, CSU, Long Beach), Carl Lipo (The Institute for Integrated Research in Materials, Environments, and Societies, CSU, Long Beach) and Hector Neff (The Institute for Integrated Research in Materials, Environments, and Societies, CSU, Long Beach)

[5] *An Experimental Study of Mineralogical Changes and Hydrogen Isotope Fractionation in Ceramic Pyrotechnology*

The study of mineralogical and isotopic changes within experimental ceramics provides insight into ancient firing technology. Here, we investigate changes that occur within ceramics as a function of time and temperature. Using TGA, XRD, and PIMA spectroscopy we observe the formation of new minerals that result from the dehydration of talc and quartz at two temperature ranges. In addition, we show that dehydration processes that take place during firing result changes in hydrogen isotope fractionation. These findings support the development of techniques that allow researchers to study variability in the dynamics of pyrotechnology used in the manufacture of ceramic objects.

Bernaldo de Quiros, Federico, Jose Manuel Maillo (UNED) and Ana Neira (Universidad de Leon)
[218] *Behavioral changes in the Middle-Upper Palaeolithic transition in Cantabria (Spain) from a historical view*

"The transition between the Middle to Upper Palaeolithic presents in the Cantabrian Region a series of

peculiarities that force us to question the classic vision based in the presence of the so called "modern" behaviour. The revision of the ideas proposed about this question in the history of investigations at the Cantabrian area suggests a interesting way to understand the evolution of investigators ideas about the transition and how the discoveries change this visions."

Bernardini, Wesley (University of Redlands), Alicia Barnash (University of Redlands) and Nathan Strout (Redlands Institute, University of Redlands)
[139] *"Process Cartography" and the Ancestral Hopi Landscape*

While GIS excels at static depictions of space it is relatively weak in dynamic representations of change over time or movement across a landscape. That is, while GIS is a good tool for "mapping people" it is weak at facilitating the process of "people mapping" – at representing the reflexive process by which people understand and experience landscapes, and landscapes in turn shape the cosmology of the peoples who inhabit them. This poster presents an example of "process cartography" designed to facilitate a virtual yet experiential exploration of the ancestral Hopi landscape.

[79] *Discussant*

Bernardini, Wesley [134] *see Theuer, Jason G. [134] see Schachner, Gregson*

Bernatz, Michele (SUNY Fredonia)

[102] *Near Earth and Sky: The Spatial Realm of the Maya God L*

Maya art incorporates enigmatic characters while recent scholarship connects it more closely than ever to real world places. Artists imagine a discernible reality even when visualizing obscure essences and otherworldly attributes. Though sometimes pervasive, the territories of gods are definable spaces to be entered and exited as needed. Traditional commentaries describe God L as an underworld dweller living deep within the earth. In contrast, this paper re-defines God L's realm as a borderland of earth and sky. His territory encompasses spaces where material wealth is produced, and his storyline narrates the spectacle of kings as purveyors of merchant trade.

Bernbeck, Reinhard (Freie Universitaet Berlin)

[122] *From Archaeological Knowledge to Narratives without Subjects*

Some basic elements of archaeological knowledge are its fragmentary nature, lack of insight into acting characters and their motivations, and the impossibility of giving names to most of those whose material remains we explore. Past people remain in a haze. In contrast, archaeological texts are overloaded with details on form, color, hardness, and other qualities of materials. I argue that the French literary form of the nouveau roman provides useful guidelines for the construction of narratives that do justice to subjects in the past. "Doing justice" means resisting the temptation to colonize the past with the subjects of our imagination.

[122] *First Chair [122] Second Organizer*

Berry, Kimberly (Boston University)

[238] *Thirty Years of Wetland Research at Pulltrouser*

Swamp: Extracting Ourselves and Meaning from the Clay-rich Sediments

Over 30 years ago, Peter Harrison and B.L. Turner conducted seminal research on the settlements adjoining Pulltrouser Swamp and the "raised fields" that they argued were constructed and used for agriculture by ancient Maya people. Fifteen years ago that stance was challenged by researchers who maintained that these "fields" were natural formations that may, at most, have been casually modified early and later abandoned due to rising water levels and uplift from gypsum precipitation. To resolve this issue, the K'axob Wetlands Project has examined artifacts, ecofacts, and microstratigraphic thin-sections from the region. This paper presents our findings and conclusions.

Berryman, Judy [115] *see* Stone, Suzanne

Bertrando, Ethan (Cuesta College/California Army National Guard)

[150] *Culture as Constraint on Costly Signaling Theory: Gender Roles and Social Stratification Influencing "Show-Off" Behavior and the Archaeological Record in Central California.*

Efforts to explain prehistoric shifts in hunting behavior identified in the Great Basin and California have stimulated a vigorous debate on the application and archaeological interpretation of Costly Signaling Theory. Increases in big game identified in the archaeological record of the Late Holocene have been viewed as male "Show-Off" behavior to improve male Darwinian fitness. Alternate views suggest intensification or climate change may be responsible for this pattern. In this study, anthropologically inferred gender roles and social stratification are considered to explain clearly divergent hunting patterns in the Late Holocene of Central California.

[150] *First Chair*

Bethard, Jonathan [156] *see* Gaither, Catherine

Bettinger, Robert (University of California-Davis)

[230] *Aboriginal Use of the White Mountains, Eastern California*

The White Mountain alpine zone (>10,000 ft) documents substantial changes in aboriginal land use through time. The pre-bow pattern is characterized by short-term occupations connected with large game hunting. The more intensive post-bow pattern features villages with well-built houses and midden deposits as rich, and milling assemblages as extensive, as any found on the adjacent valley floor. White Mountain alpine villages and valley floor villages developed simultaneously in response to population growth that diminished opportunities for mobility. Both changes are likely connected with the late prehistoric spread of Numic speaking peoples across the Great Basin.

Bettinger, Robert [43] *see* Richerson, Peter J

Beyin, Amanuel (Turkana Basin Institute, Stony Brook University)

[171] *Early to Middle Holocene shoreline adaptations in northeast Africa: Analogies and contrasts between coastal Eritrea and Lake Turkana (northern Kenya)*
This paper compares technological and subsistence

patterns between two early to middle Holocene shoreline adaptations in northeast Africa: Eritrea's Red Sea Coast, and Kenya's Lake Turkana. The Turkana Basin yielded the region's first data on early Holocene socio-economic transformations (e.g., aquatic intensification, initial ceramic technology). A recent research project on the Buri Peninsula and Gulf of Zula coastal plains of Eritrea documented Early-Mid Holocene (8000-5000 BP) shell midden sites. Comparing the two regions shows some parallels and contrasts. For example, while humans subsisted primarily on fish in the interior lakeshore settlements, mollusk shells were the typical resources at the coastal sites.

[171] *First Chair*

Beyries, Sylvie (CNRS)

[59] *How to model the results of functional analyses?*

Use wear analysis is based on a comparative approach associated with various forms of experimentation. Experiments can take several forms depending on the goals of individual studies, ranging from standardized experiments used to address specific archaeological problems or more customized experimental designs used in ethnographical contexts to reconstruct behavioral processes. It would be a mistake to consider one type of experiment as being superior to any other; different kinds of experiments are suited to addressing different kinds of questions. For an effective modeling of experimental results, whatever approach is taken, due diligence must be paid in terms of methodological rigor.

[22] *Discussant*

Bezerra De Almeida, Marcia (Universidade Federal do Pará/CNPq/Brasil) [268] *Second Organizer*

Bezy, Philippe

[102] *Sound and Space: Maya Shell Trumpets in Ritual Performances*

Archaeological contexts for Precolumbian Maya shell trumpets demonstrate that these wind instruments were imbued with supernatural qualities independent of their being actively played. Iconography also provides examples of shell trumpet use in varied contexts, thus offering additional perspectives into ancient Maya spatial concepts. Of particular significance are representations of shell trumpet use in ritual performance. The sharing of the same pictorial space by deified ancestors and humans allows an examination of the perceived permeable boundary between the real world and supernatural spaces. The Maya also required specific species for specialized rituals, which encourages further exploration of related spatial concepts.

Bhiry, Najat [159] *see* Gendron, Daniel **[25]** *see* Roy, Natasha **[25]** *see* Lemus-Lauzon, Isabel

Bianchini, Gina, Rita Scheel-Ybert (Museu Nacional/UFRJ), Maria Dulce Gaspar (Museu Nacional/UFRJ) and Paulo Antônio Dantas DeBlasis (Universidade de São Paulo/USP)

[253] *Tropical feasting by the edge of the sea: evidences of plant use in a funerary shellmound site from Southern Brazil]*

Anthracological analysis from Jabuticabeira-II shellmound site presents evidence of plant selection related to mortuary practices. Sediments from excavated

areas were sampled and charcoal remains obtained by flotation. Results demonstrate that the site was located on restinga environment, but Atlantic Rain Forest was also part of their catchment area; Lauraceae wood was probably selected for burial fencing and related structures; and, also, the presence of edible plants (fruits seeds and nuts) strictly associated to funerary structures corroborates the hypotheses of feasting and/or mortuary offerings.

Bicho, Nuno [4] *see Haws, Jonathan A.*

Bickle, Penny [255] *see Whittle, Alasdair*

Biehl, Peter (SUNY Buffalo), Ingmar Franz (Freiburg University), David Orton (Cambridge University), Sonia Ostaptchouk (Paris University) and Eva Rosenstock (Free University Berlin)

[26] *Rethinking the Neolithic-Chalcolithic Transition in Central Anatolia*

The paper scrutinizes the process of cultural, social, economic and symbolic transition between the Neolithic and Chalcolithic in Central Anatolia as revealed at the Çatalhöyük East and West Mounds. It will situate the transition in the palaeo-environmental changes in the Konya plain and will examine how humans responded to the climate change that occurred during the 8200 calBP 'climate event'. The key hypothesis is that the change in climate and environment caused people to move westwards into Western Anatolia and across Europe. Çatalhöyük offers a microcosm that may help us unlock some of the key questions surrounding this time period.

[26] *First Chair*

Bies, Michael (BLM Worland FO), Neffra Matthews (BLM National Operations Center) and Tommy Noble (BLM National Operations Center)

[60] *Baseline Data Collection With Close Range Photogrammetry*

The utility of close range photogrammetry as a means of establishing a baseline data set for future analysis of impacts to petroglyphs is examined in this paper. During the 2009 and 2010 field seasons close range photogrammetry was conducted on petroglyph panels in proximity to a potential bentonite mine and haul road. Several panels were imaged during both field seasons. This paper discusses the reproduction of comparable image sets for rock surfaces without permanent artificial reference points. The paper will also address the use of 3D modeling to compare surface change over time.

Bigelow, Nancy [159] *see Hoffecker, John F. [159]* *see Alix, Claire [25]* *see Crawford, Laura J.*

Bigney, Scott (California State University Dominguez Hills), Janine Gasco (California State University Dominguez Hills, Department of Anthropology) and Hector Neff (California State University Long Beach, Department of Anthropology)

[62] *Characterization of Obsidian from Five Late Postclassic sites in the Soconusco Region of Chiapas, Mexico*

Obsidian exchange is a common activity among complex societies wherever obsidian exists; this is especially true for Pre-Hispanic Mesoamerican societies. This is a study of 348 obsidian artifacts from five Late Postclassic sites

in the Soconusco region of Chiapas, Mexico. The main objectives are to chemically characterize each obsidian artifact using X-Ray Fluorescence (XRF), and to best characterize the artifacts to a specific quarry source in order to observe the obsidian distribution. This study has the potential to elucidate political and economic factors such as obsidian exchange systems, and contribute towards defining the Aztec occupation of the region.

Blittner, Katie (University of Alberta)

[109] *Characterization of Stone Age Lithic Artifacts from Southern Tanzania*

Macroscopic and microscopic techniques were used to describe lithic artifacts from two Stone Age rockshelters in Iringa region, southwestern Tanzania. This approach allowed for the accurate characterization of the stone raw material types in order to evaluate inter- and intra- assemblage variability, as well as the inference of potential source locations. The implications of understanding differential resource use are explored in the context of the selection of local versus non-local sources.

Bill, Cassandra R. [31] *see Szirmay, Jenica [31]* *see Bell, Ellen E.*

Billard, Claire (Student in Mesoamerican archaeology dir. Faugere)

[98] *Gods and human beings: anthropomorphic representations in highland Mexico from Preclassic to Epiclassic*

In this presentation we will follow the iconographic evolutions of the anthropomorphic representation of the Old God of Fire. From the Preclassic to the Epiclassic what evolutions can we really notice in the representations of this god? How particular are these representations of the Old God of Fire compared with other anthropomorphic icones? We will explore all these questions during the event of the SAA.

Billo, Evelyn [60] *see Mark, Robert K.*

Billy, Nora (Xaxli'p First Nation), Suzanne Villeneuve (Simon Fraser University), Arthur Adolph (Xaxli'p First Nation), Naoko Endo (Simon Fraser University) and Eric Carlson (University of Montana)

[176] *Results of the Sxetl' Basket Excavations at Six Mile Rapids along the Fraser River, British Columbia*

Salmon fishing has been a primary economic resource for the Stl'atl'imx people for generations. Oral histories document a long tradition of fishing at Sxetl' (Six Mile Rapids), one of the most productive salmon fishing locations along the Fraser River and a place of deeply embedded social and symbolic importance. Excavations of a well preserved intact large birch bark storage container recovered from the Billy camp, and detailed botanical, lithic, faunal, chemical, entomological, and DNA analysis help reconstruct a story of generations of practice and provide us with some of the first archaeological insights at these fishing grounds.

Bilton, David (University of Toronto) and Bryn Letham (University of Toronto)

[232] *Beyond the River: A Look at the Intersections of Landscape and Culture in shíshálh Prehistory*

Northern Coast Salish peoples did not have access to major rivers equal in size and resources to the Fraser. As such, their existence within and use of the landscape differs in important respects from the southern Coast Salish. Through survey and excavations within Shíshálh traditional territory, we compare patterns of land use within our study area and with the wider Salish Sea region. We present a detailed study of human existence within a landscape not dominated by a major salmon run, and consider how this affects our understanding of the culture/ecology paradigm embedded in the Gulf of Georgia cultural sequence.

Bingham, Paul (Stony Brook University) and Joanne Souza (Stony Brook University)

[43] *The Unique Power of the North American Record Allows Tests of a New Theory of Social Evolution*
The archaeological record reveals dramatic local increases in social complexity ranging from the "agricultural" Anasazi to the "non-agricultural" Chumash. Our new theory of human evolution and history (2008, *JTheoretBiol.* 253, 261; 2009, "Death from a Distance and the Birth of a Humane Universe") predicts that all social revolutions result from increases in social scale, produced, in turn, by new coercive technologies permitting enlarged scale of control of conflicts of interest. Remarkably, the bow's arrival in North America precedes diverse local social revolutions precisely as predicted. We will review evidence for this strong claim and its crucial, general implications for archaeology.

Binning, Jeanne (California Department of Transportation) and Alan P. Garfinkel (AECOM)

[231] *The Manifestation of Clovis in the Far Western United States: An Example from Inyo County, California*
There are two questions every researcher asks of Clovis data from the Far Western, continental United States: 1.) Are Clovis points from the Far West within the morphological range of Clovis points from other parts of the continental United States? 2.) Are Clovis points from the Far West contemporaneous with the narrow time period within which Clovis lifeways have been established in the Southwestern, Midwestern and Eastern United States? An obsidian Clovis point from Inyo County, California provides an opportunity to address these questions.

Birch, Jennifer (University of Georgia)

[86] *Settlement Aggregation and Social Transformation: Negotiating community in the context of coalescence*
At various times and places throughout the globe, dispersed populations coalesced, coming together into increasingly large and complex social aggregates. While many studies of settlement aggregation have focused on the regional level, the actual mechanisms for the development and maintenance of new social formations developed within individual communities. How do we reconcile community-level processes and contingencies with regional perspectives on settlement aggregation? This paper will introduce some of the overarching themes of this session and introduce an example from eastern North America that provides new insights into the social transformations which occurred within local populations in the context of coalescence.

[86] *First Chair*

Birch, Jennifer [55] *see Pihl, Robert*

Bird, Douglas [192] *see Bird, Rebecca [74]* *see Zeanah, David W. [11]* *see Codding, Brian F.*

Bird, Rebecca (Stanford University), Douglas Bird (Stanford University) and Brian Codding (Stanford University)

[192] *Foraging with Fire: identifying anthropogenic fire regimes in Western Australia*

In Western Australia, Martu frequently use fire while foraging. We show that Martu burning functions to increase immediate hunting returns with sand monitor lizards, but also has some epiphenomenal benefits. Both of these hinge on differences in scale between human and lightning caused fires. Human fires occur at a scale characteristic to human foraging. The resulting successional mosaic is more diverse than a lightning mosaic at the human scale, but is indistinguishable at larger scales. As such, attempts to identify differences in human vs. lightning fires in the past will require methods capable of operating at this characteristic human scale.

Biro, Peter (Abteilung für Altamerikanistik)

[221] *A New Epigraphic Interpretation of Terminal Classic Northern Maya Lowlands History*

Andrews and Robles Castellanos (1985) proposed an interpretation of Terminal Classic Northern Maya lowlands suggesting that ethnic Itza invaded the area and occupied Chichen Itza, creating a stand-off between Puuc Maya and Coba territories. Northern city collapses were directly connected to this invasion, and Coba was abandoned due to attacks and isolation around AD 1100. Using new epigraphic data, I suggest Coba was abandoned in the early 800s and there is no evidence of occupation, attack, or any Chichen Itza-related activity, contrary to Andrews and Robles. Instead, I propose a new Terminal Classic history based on epigraphic and colonial data.

Bishop, Ronald [187] *see Canouts, Veletta*

Biskowski, Martin (California State University, Sacramento)

[200] *Aztec and Postconquest Food Preparation in the Eastern Teotihuacan Valley*

Comparisons of Aztec and Postconquest grinding tools from Charlton's surveys in the eastern Teotihuacan Valley highlight important continuities and changes in approaches to staple food preparation. Both Aztec and Postconquest maize-grinding used gracile manos. These lightweight artifacts sharply differentiate later collections from more robust, earlier grinding equipment and probably reflect a greater intensity of maize preparation. On the other hand, Postconquest tools are less diverse in form. This change may reflect both changes in grinding tool production and a decrease in the variety of alternative foods in use in Postconquest times.

Bissett, Thaddeus (University of Tennessee, Knoxville) and Stephen Carmody (University of Tennessee, Knoxville)

[129] *Diet breadth in the Middle Archaic Midsouth: Paleobotanical and faunal evidence for resource abundance during the Hypsithermal Interval.*

Paleobotanical and faunal data from the Midsouth and lower Midwest suggest that Middle Archaic foragers focused intensely on a relatively few major plant and animal resources. In that area, the Mid-Holocene was marked by warmer, drier conditions associated with the Hypsithermal Interval, which has in some cases been suggested as a period of resource stress. Substantial contraction of diet breadth during the peak of the Hypsithermal runs counter to such arguments. Evidence for increasing social complexity in this region during the late Middle Archaic may reflect the effects of high resource abundance during, rather than after, the Hypsithermal Interval.

Blackman, M. James [200] *see Fournier, Patricia [187]*
see Canouts, Veletta

Blackwell, Bonnie (Williams College), A.E. Deely (RFK Science Research Institute), M.R. Kleindienst (University of Toronto at Mississauga, Mississauga, ON), J.R. Smith (University of Washington at St. Louis), Christopher Hill (Boise State University, Boise, ID) and Christopher Hill (Williams College, Williamstown, MA; RFK Science Research Institute) [218] *Dating the Middle Stone Age (MSA) in the Egyptian High Desert Oases: Constraining Occupations at Kharga, Dakhleh, and Bir Tarfawi*

Today, the Western Desert is hyperarid. In the 1930's, MSA occurrences associated with Pleistocene lacustrine sediment and spring tufa near Kharga were typologically sequenced. Now, 230Th/234U tufa dates and ESR fossil tooth and mollusc dates pinpoint when surface water and savannas permitted human occupation. Bir Tarfawi saw beach sands deposited at 110 ka (OIS 5d). At Kharga, freshwater and savannas existed at 365-275 ka (OIS 9-10), 245-265 ka (OIS 8). At Dakhleh and Kharga, they existed at 235-95 ka (OIS 7e-5b), with pulses at ~70 ka (early OIS 4), ~50 ka (mid OIS 3), and ~15

Blackwell, Bonnie [2] *see Zhou, Cathy XY*

Blainey, Marc (Tulane University)

[41] *Techniques of Luminosity: Iron-Ore Mirrors as Evidence of Shamanistic Practice among the Ancient Maya*

Shamanism persists as a contentious issue among archaeologists. On the one hand, many scholars continue to identify prehistoric forms of shamanism, claiming to have found examples across the ancient world of what Mircea Eliade called "techniques of ecstasy." However, other scholars have denounced the application of the "shamanism" label to cultures outside of the concept's original Siberian and Central Asian context. With reference to the cultural remains of the ancient Maya, this paper analyzes how archaeological, iconographic, and ethnohistoric instances of iron-ore artifacts termed "mirrors" are most effectively interpreted as evidence for shamanistic practices in ancient Maya society.

[41] *First Chair*

Blair, Elliot (UC Berkeley) and Rachel Cajigas (American Museum of Natural History)

[10] *Mapping the Mission: An Integrated Geochemical and Geophysical Analysis of Site Structure at 17th-century Mission Santa Catalina de Guale*

The use of geochemical soil analyses has a long history in archaeological site prospection, and the multi-element analysis of archaeological soils to identify activity areas is becoming increasingly common. Here, we combine both approaches to conduct a multi-scalar, multi-elemental analysis of site structure and feature function at the Native village of 17th century Mission Santa Catalina (Georgia). Using systematically collected soil samples analyzed by x-ray fluorescence spectrometry, we make inferences about settlement structure and identify specific activity areas, integrating our results with previously collected geophysical survey data.

Blake, Emma [89] *see Schon, Robert*

Blake, Karry (Statistical Research, Inc.) and Robert M. Wegener (Statistical Research, Inc.)

[80] *The Alamo Dam Area: A Lithic Procurement Landscape in West Central Arizona*

The Alamo Dam area of west central Arizona is often characterized as peripheral to the major cultural groups associated with prehistoric habitation of Arizona. Research in this region has identified numerous sites consisting of low-density lithic scatters and seldom evidence of prolonged use or habitation. SRI's recent 3000 acre survey, supported by U.S. Army Corps of Engineers ARRA funding, resulted in recordation of 37 additional lithic scatters located primarily in bajada settings. We examine these lithic scatters in a regional land-use framework and the aboriginal use of locally ubiquitous lithic raw materials in the Alamo Dam region.

Blake, Michael (University of British Columbia)

[232] *Modeling Territories along the Northern Shores of the Salish Sea*

The ways in which people travel on both land and sea have long been recognized as a key factors in determining how territories are defined and used. Territoriality in the Coast Salish region was highly structured by both the modes of movement and the distinctive attributes of the landscape and seascape. I propose a model of Coast Salish territoriality that incorporates the technology of transportation on water and on land to show how this unique set of social, technological, and environmental factors contributed, paradoxically, to both intensive interaction and to sustained regionalism among the peoples of the Salish Sea.

[232] *see Schaepe, David M.*

Blakeslee, Donald (Wichita State University)

[7] *Capturing Process: Stacked Outline Analysis in Lithic Studies*

Archaeologists analyzing chipped stone tool assemblages deal with the products of a series of processes: wear, resharpening, breakage, repair, recycling and so on. In this paper, I present a technique that captures shape data exclusively, while allowing all of the items in an assemblage to be viewed simultaneously rather than sequentially as the eye moves from one item to the next. This allows visualization of the fundamental processes involved in making and using stone tools and allows testing of the (necessarily) extensive definitions of the analytical classes we create. Elaborations of the basic technique allow other forms of analysis.

Blet-Lemarquand, Maryse [100] *see Dussubieux, Laure*

Bliege Bird, Rebecca [74] *see Zeanah, David W.*

Blinman, Eric (NM Archaeology), H. Wolcott Toll (NM Archaeology) and Steve Lakatos (NM Archaeology) [37] *The Galisteo Basin and the Perception of the Classic Period in the Northern Rio Grande*
Perception of the Classic period in the Galisteo Basin has both reflected and shaped our models of Puebloan history. Pueblos with 100s to 1000s of rooms, dominance of maize subsistence, and katsina religious institutions are reflected in plaza pueblos, rock art, and pottery traditions. This "Classic" manifestation is seen as the transition from the tumult of Pueblo migrations to the peoples encountered by the Spanish and anthropologists. The detailed historical narrative is far more interesting, within a strong rhythm of adaptation to climate change, intraregional population movement, complicated patterns of settlement aggregation, and underlying ethnolinguistic diversity.

Bloch, Lindsay (UNC-Chapel Hill) [207] *Trends in Redware Use and Production in the Chesapeake*
Coarse earthenwares, exemplified by redwares, are nearly ubiquitous on historic sites of the seventeenth to mid-nineteenth century. The limited range of forms and glazes, coupled with abundant manufacturing sites in the Chesapeake and beyond leaves the provenience of these wares often uncertain. Through comparative analysis of domestic site assemblages across the region, spatial patterning in the attributes of these wares emerge. These patterns signal distinct uses and possibly distinct production origins for piedmont and coastal assemblages. Tracing networks from producer to consumer allows consideration of the social and economic relationships of American craftspersons within their communities and beyond.

Blong, John (Texas A&M University) [181] *Prehistoric Upland Use in the Central Alaska Range*
Current research into Central Alaskan lithic assemblage variability centers on landscape use to explain the decision to use inset microblade versus bifacial lithic technology. Critical to this research is balancing the depth of knowledge from lowland archaeological sites with evidence from the uplands. In summer 2010 we conducted archaeological survey in the Savage and Susitna River drainages in the uplands of the central Alaska Range to document prehistoric land use from earliest human occupation to less than 1,000 years ago. This data will inform hypotheses of landscape use and lithic assemblage variability in the region.

Blustain, Jonah (University of Nevada, Reno) [208] *Down from on High: Archaeological Investigations of Cornish Row's Industrial Landscape, Virginia City, NV.*
Initial survey of the slopes of Mount Davidson near Virginia City, Nevada revealed a series of abandoned platforms alongside historic Howard Street. The platforms comprised part of what was historically an ethnically Cornish neighborhood that existed between c.1865 and c.1885. The Cornish miners were integral to the extraction of the Comstock ore due to their

knowledge of hardrock mining techniques. Test units were inserted on the platforms to determine how these spaces were used and by what means they were constructed. The excavation in conjunction with historical data will provide vital information regarding the construction of the Comstock's industrial landscape.

Blustain, Malinda (Robert S. Peabody Museum of Archaeology) [196] *First Chair [196]* *see Doheny, Marcelle A [196]* *see Hagler, Jeremiah C*

Boada, Ana (University of Pittsburgh) [68] *The Evolution of Social Inequality in Muisca Societies of the Sabana de Bogotá, Colombia*
The purpose of this paper is to use two models to analyze the relationship between regional population distribution and prime agricultural land, using data collected from a regional systematic surface survey of 240mk² conducted in the Sabana de Bogotá, Colombia. The first model states populations congregate around prestigious and wealthy families (Drennan 1987). The second states that a few individuals appropriate and control basic resources such as land, labor, or water (Earle 1991, Gilman 1991). This analysis contributes to the evaluation of models explaining the emergence of early communities and development of social complexity.

Bocherens, Herve [205] *see Julien, Marie-Anne*

Bocinsky, R. Kyle [70] *see Newbold, Bradley [46]* *see Chisholm, Brian S.*

Boczkiewicz, Roberta (University of Wisconsin - Milwaukee) [104] *An Analysis of the Schlage Site Faunal Assemblage: Animal Exploitation in an Eastern Oneota Development Horizon Settlement*
The Schlage site is a single component Oneota occupation situated near the eastern shores of Lake Winnebago, in Fond du Lac County, Wisconsin. Excavations of the site below the roadbed of USH 151 yielded a faunal assemblage of over 12,000 elements. The faunal assemblage suggests a diverse diet of terrestrial mammals including elk, deer, bear, raccoon, beaver, porcupine, rabbit, squirrel, chipmunk and canids as well as fish, water birds, reptiles, amphibians and freshwater mollusks. Bison elements, sometimes found in Eastern Oneota assemblages, are not present but the high reliance on fish is typical of most excavated Oneota faunal assemblages
[104] *see Boczkiewicz, Roberta*

Boehm, Andrew (Southern Methodist University) [6] *Experimental Bison Butchery: A New Mexico Study*
This study documents the butchery of an American bison as part of an on-going effort to examine the range of human variation in butchery practices. An individual with years of experience butchering bison and other large mammals butchered the bison used in this study with stone tools. To be comparable with data from previous studies, all portions of the animal were weighed and measured and the time required to butcher particular elements was recorded. This study also reports the correlation between tool strokes and cut marks to evaluate previous experimental conclusions regarding processing intensity.

Boehm, Matthew [240] *see Foster, Thomas*

Boeka Cannon, Molly [57] *see Cannon, Kenneth P.*

Boggess, Douglas (Lone Mountain Archaeological Services, Inc.), Richard Lundin (Wondjina Research Institute) and Claudia Brackett (Country Chemist, California State University-Stanislaus, and the University of the Pacific)

[193] *Portable X-Ray Fluorescence Analyses of Plant and Soil samples at Two Sites in Southeastern New Mexico*

The identification of archaeological sites and features in the Mescalero Sands of southeastern New Mexico has depended on our ability to spot these remains on eroded and partially eroded surfaces. Eolian processes can expose and rebury archaeological remains rapidly, and identifying portions of sites still buried within sandsheets that are likely to yield additional significant data has sometimes relied on destructive mechanical processes. X-Ray Fluorescence analyses of plant and soil samples were tested as a possible alternative to mechanical scraping during the data recovery of LA 99434 and the testing of LA 154539 with promising results.

Bohor, Bruce [142] *see Arnold, Dean E.*

Bolender, Douglas (Kenyon College)

[198] *The production of intra- and inter-household surplus in Viking Age political economies*

The Viking Age settlement of Iceland fractured political structures as early colonists claimed individual household properties. During the initial settlement, production strategies were based on complex stratified households consisting of landowning families with dependent laborers and slaves. While inequality within the household could be profound there was relatively little institutionalized hierarchy among households. As population rose and the landscape filled in with additional farms significant inter-household stratification emerged. This paper compares the political context of surplus production for consumption within the household to surplus production for consumption outside the household, primarily as rents between landlords and tenants.

[42] *see Schreiner, Amanda Marie*

Boley, Michael [179] *see Gabler, Brandon M.*

Bolfing, Christopher (Texas State University - San Marcos) and S. Margaret Spivey (Washington University in St. Louis)

[166] *The Practice of Archaeology and Identity Formation among Disenfranchised Native Americans*

Various types of disenfranchisement have inspired a rising trend among Native American peoples to pursue an education in academic archaeology. The discipline becomes both a search for archaeological information in the traditional sense and a search for answers about the self. This trend contrasts the idea of performing archaeology as an act of preserving a cultural past. Rather, it is the active creation of a new identity. This identity is informed by the knowledge of the past and an understanding of the changes in culture that are interpreted within the context of present struggles and

experiences.

Bomalaski, Anne [167] *see Massey, David*

Bon-Harper, Sara [207] *see Smith, Karen Y.*

Bond, Kristina (Humboldt State University), Todd Braje (Humboldt State University), Torben Rick (Smithsonian Institution), Jon Erlandson (University of Oregon) and Gaia Dragosani (Humboldt State University)

[263] *Anthropogenic Forcing on the Structure of Intertidal and Near Shore Ecosystems: Evidence from Otter Point, San Miguel Island*

Archaeological data on deep historical interactions between indigenous people and near shore ecosystems can offer important insights on marine ecosystem and fisheries restoration. We use archaeological records of maritime hunting, fishing, and gathering at Otter Point, with 13 discrete components dated between ~7300 years ago and AD 1820, to investigate the long-term ecological history of shellfish, finfish, and sea mammal use on San Miguel Island. Although there is some continuity in prey species through time, human exploitation resulted in significant temporal fluctuations in the average size of shellfish and changes in the relative abundances of shellfish, fish, and sea mammals.

Boney, Chris [12] *see Garvey, Jillian*

Bonsall, Clive (University of Edinburgh), Ivana Radovanovic (University of Kansas), Adina Boroneant (Archaeological Institute, Bucharest, Romania), Catriona Pickard (University of Edinburgh, UK) and Gordon Cook (Scottish Universities Environmental research Centre, East Kilbride, UK)

[255] *Distinguishing between freshwater- and terrestrial-based diets? The case of the Iron Gates Mesolithic*

Stable isotopes are used routinely to reconstruct ancient diets. Analysis of human remains from sites in the Iron Gates (SE Europe) has led to conflicting interpretations of Mesolithic diets. One view (Radiocarbon 2004) is that diets were based on riverine resources throughout the Mesolithic. A competing hypothesis (J Arch Sci 2010) argues that Mesolithic diets were more varied, with the emphasis on terrestrial resources in the Early Mesolithic, and riverine resources only becoming important in the Later Mesolithic. Our paper revisits this issue, discussing the stable isotopic data in relation to archaeozoological, osteoarchaeological and radiocarbon evidence.

Boomgarden, Joel (University of Utah)

[91] *Experimental Archaeology: Granary Construction in Range Creek Canyon, Utah*

Of the over 400 sites recorded in Range Creek Canyon, Utah, since 2002, nearly 25% are storage sites. These consist of cists, caches, and granaries. The granaries initially appeared quite costly to construct. The building of two experimental granaries, one located under an overhang and one out in the open, allowed a measure of costs associated with construction and maintenance. The size, time invested and amount of water used were measured. The granaries were filled with corn and left unattended for the year. The results will be discussed.

Boone, Cristie (University of California, Santa

Cruz) and Diane Gifford-Gonzalez (University of California, Santa Cruz)

[222] *The Fauna from Quiroste*

Fine-grained recovery methods permitted insights into a wide range of faunal taxa at Quiroste. The archaeofauna comprises mainly mammal and fish remains. Fishes are nearshore species, dominated by pricklybacks and surfperches, with significant numbers of rockfishes. The assemblage also includes small schooling fishes, greenlings, sculpins, and salmonids. Taxa reflect exploitation of sandy beach and rocky intertidal zones. Mammal specimens are mainly mule deer-sized ruminants and smaller mammals, with a small representation of carnivores, including rare northern fur seal. The low representation of birds at Quiroste contrasts with that of earlier and contemporaneous assemblages from the region, suggesting cultural selectivity.

Booth, Kimberlie (Pima Community College)

[137] *Projectile Point Typology and Distribution in the Burro Creek/Pine Creek Survey Area*

Projectile points are prevalent on the sites of the Burro Creek/Pine Creek area, with both dart and arrow points commonly occurring. The survey conducted by Pima Community College includes the collection of such diagnostic artifacts. This poster summarizes the typologies of the projectile points found, along with an analysis of the distribution of each type in the survey areas. Such analyses should help to elucidate the temporal placement of the sites.

Borchardt, Nikki [18] see Roberts, Heidi

Borck, Lewis (University of Arizona)

[136] *A Gallina Gateway: Movement and migration through the ancestral puebloan landscape*

In the highlands of northern New Mexico, the Gallina culture existed as what many call a peripheral group. Recent research, however, is indicating that far from being peripheral, the mere presence of the Gallina informed decisions made by members of the larger, more 'modern' Ancestral Puebloan world. The Gallina, using a traditionalist identity to enact a course of resistance through isolation, eventually forced many other people to make choices regarding paths of movement and, particularly toward the end of the 13th century, paths of migration.

Borgstede, Gregory [67] see Robinson, Eugenia J.

Boroneant, Adina [255] see Bonsall, Clive

Borrazzo, Karen [22] see Charlin, Judith E.

Borrero, Luis Alberto [231] see Martin, Fabiana M.

Boszhardt, Robert [229] see Pauketat, Timothy R.

Boudreaux, Sarah (University of Texas at Austin), Marisol Cortes Rincon (Humboldt State University) and Jaimie Baxter (Humboldt State University)

[148] *Overview of Settlement Survey Studies at Programme for Belize Archaeological Project (PfbAP)*
Settlement studies are essential in archaeology as these

investigations provide an array of information, including settlement hierarchies within a region. This paper will present an overview of previous survey research carried out at the Programme for Belize Archaeological Project and the methodology used by the Dos Hombres to Gran Cacao Settlement Survey Project (DH2GCSSP). The biodiversity between Dos Hombres and Gran Cacao is dense and immense. The project team recorded the location and layout of settlements (including ecological changes) along the DH2GCSSP transect. This interdisciplinary effort when placed in a GIS context, will yield a detailed picture of the region.

Boudreaux, Sarah [148] see Cortes-Rincon, Marisol

Boulanger, Matthew (University of Missouri) and Michael O'Brien (University of Missouri)

[218] *Variation and Innovation in the American Paleolithic: Morphometric Analysis of Eastern Paleoindian Projectile Points*

Since their first association with remains of extinct megafauna, fluted bifaces have been considered diagnostic of the first inhabitants of North America. However, it remains unclear how various fluted point styles relate to each other, whether the continent-wide occurrence of fluted points represents a singular cultural expression, and if variants in point shape represent adaptations to regional environments. Here, we employ morphometric analysis to evaluate fluted point forms from the eastern United States. We examine how these forms may relate to each other and to the selective environments in which they occurred.

Boutin, Alexis (Sonoma State University) and Benjamin Porter (University of California, Berkeley)

[152] *Dying in Dilmun: Revisiting the Peter B. Cornwall Collection*

The Dilmun Bioarchaeology Project's goal is to study and publish the results of Peter Cornwall's 1940-41 expedition to Bahrain and eastern Saudi Arabia. The collection, which resides in the Hearst Museum of Anthropology at UC Berkeley, aided Cornwall in re-locating ancient Dilmun, a polity that ran along the western side of the Persian Gulf during the Bronze and Iron Ages. Since 2008, the DBP has been analyzing these skeletal and artifactual remains to understand the experience of commemorating death in Dilmun. The elaborate burial of an individual with a congenital growth defect makes an important contribution to this understanding.

[217] *Discussant [152] Second Organizer*

Bovy, Kristine M. [210] see Sterling, Sarah L.

Bowden, Mark (English Heritage) and David McOmish (English Heritage)

[153] *Archaeological mapping: the British tradition*
Since the 17th century the British have developed a particular method of mapping archaeological remains in the landscape; though often called 'analytical earthwork survey' it encompasses much more than the portrayal of earthworks. In fact it attempts 'total landscape history' in mapped form. The tradition owes much to the Ordnance Survey, Britain's national (and originally military) mapping organisation, and Royal Commissions on Historical Monuments; it is not replicated in continental Europe or

other non-Anglophone parts of the world. This paper will explore the history of this tradition and how it might evolve in the future.

Bower, John

[247] *Serengeti Breakthrough: Opening the Door to CHM in Tanzania's World Famous Wildlife Park*

The first archaeological excavation in the Serengeti National Park took place in 1971, when the author excavated a site threatened by construction of a game viewing lodge. This was followed by excavations aimed at scientific discovery, not salvage, and supported by the Serengeti Research Institute. The work stretched over two decades, but was ultimately obstructed by park's management on the basis of a "no excavation" clause in newly established management guidelines. This paper sketches the developments that led to a reversal of the park's "no excavation" policy and its replacement by a commitment to cultural heritage management.

Boxt, Matthew (CSU Northridge), Mikael Fauvelle (CSU Northridge), L. Mark Raab (UMKC) and Rebecca B. González Lauck (Investigadora del Centro INAH Tabasco, Mexico)

[67] *Archaeosols from Isla Alor in the La Venta Olmec Hinterland*

A flotation analysis of archaeological soils from Isla Alor, a farmstead in the La Venta Olmec hinterland, is reported. Evidence of diet, settlement, and long-distance exchange from two distinct periods of occupation are discussed. The kinds and quantities of Olmec and Postclassic data are strikingly similar, suggesting a continuity of settlement and subsistence practices across millennia and, most probably, cultures. Our findings indicate that the lives of ordinary people in the shadow of major Mesoamerican cities, such as La Venta, remained relatively stable despite dynamic urban shifts nearby.

Boyd, Jon (Pima Community College) and Jonathan Haller (Pima Community College)

[137] *Life on the Edge: Lithic sources in the Burro Creek/Pine Creek region*

The Burro Creek/Pine Creek Archaeological Survey has located sources for lithic materials. This has led to a deeper understanding of artifact types and material sources for the region. This poster summarizes locations and distribution of lithic sources and the materials found at sites for the Burro Creek/Pine Creek region, providing initial indications of primary use of local materials with limited importation of lithic materials by the members of the Prescott culture in the Burro Creek/Pine Creek area.

Boyd, Jon [137] see *Boyd, Jon R.*

Boz, Basak (Thrace University Department of Archaeology Edirne) and Lori Hager (Çatalhöyük Research Project)

[152] *Intramural Burial Practices at Çatalhöyük, Central Anatolia, Turkey*

The study of intramural burials from the Neolithic site of Çatalhöyük, Central Anatolia, Turkey, reveals complex burial customs lasting ~1400 years. Burying their dead in the houses in main rooms, side rooms, under central floors and platforms, most interments were primary or primary disturbed single events with fewer secondary context burials. The limited amount of space required

multiple uses of certain burial locales. Continuity in the use of space vertically and horizontally suggests a relationship of the living to the dead where remembering the dead and forgetting the dead were part of the daily lives of the Çatalhöyük people.

Bozarth, Steven [75] see *Tomasic, John J.*

Brackett, Claudia [193] see *Lundin, Richard J. [193]* see *Bogges, Douglas H M [158]* see *Howe, Mark L.*

Bradbury, Andrew [22] see *Carr, Philip J. [257]* see *Price, Sarah E*

Bradley, James (Archlink)

[196] *Negotiating NAGPRA*

The passage of NAGPRA added an unexpected dimension to efforts at revitalizing the R. S. Peabody Museum in the early 1990s. Viewed as an opportunity rather than obstacle, NAGPRA became a major catalyst in rebuilding the Museum. Some of the decisions made during that process are reviewed as well as how those choices affected my tenure on the NAGPRA Review Committee from 1998 to 2004.

Brady, James (Cal State L.A.)

[266] *Preliminary Observations on the Investigation of Midnight Terror Cave, Belize*

A survey and surface collection of Midnight Terror Cave was conducted from 2008 to 2010 by the Western Belize Regional Cave Project directed by Dr. Jaime Awe. This paper outlines the major findings of the project that include the recovery and analysis of a ceramic assemblage of over 25,000 sherds, the documentation of the utilization of large speleothems as sacred space and the recovery of a very large human osteological assemblage. The project recorded extensive modification of the cave suggesting a systematic plan of construction that argues for the involvement of a planning entity at a polity level.

[266] see *Cobb, Allan B.*

Brady, Ryan [150] see *Farquhar, Jennifer M.*

Braje, Todd (Humboldt State University), Jon Erlandson (University of Oregon) and Torben Rick (Smithsonian Institution)

[123] *Paleocoastal Technologies on California's Northern Channel Islands*

Until recently, we knew very little about technologies associated with Terminal Pleistocene peoples on the Northern Channel Islands. Our recent work has identified six Paleocoastal sites dating between 12,200 and 11,400 cal BP, producing the first comprehensive picture of early maritime technologies and their connections to other early traditions in western North America. Stemmed points and crescents suggest cultural links to the Western Pluvial Lakes Tradition and a coastal migration from northeast Asia into the Americas. Although much has been lost to rising seas, stemmed points found in terminal Pleistocene sites from Japan to South America support this scenario.

Braje, Todd [263] see *Bond, Kristina J*

Braly, Bobby (University of Tennessee), Todd

Ahlman (Historical Research Associates, Inc.) and Gerald Schroedl (University of Tennessee)

[121] *Expedient Stone and Glass Tools from Enslaved African Contexts on St. Kitts' Southeastern Peninsula*
St. Kitts, the first permanent English Caribbean colony, was dominated by sugar monoculture. During the height of the island's eighteenth century financial and political power, the arid Southeast Peninsula was home to several sugar and cotton plantations. Recent excavations have recovered considerable data relating to enslaved Africans that worked these plantations, including a relatively large assemblage of stone and glass tools. The stone tools are dominated by cores, bifacial flakes, and utilized flaked tools and the glass tools are primarily unifacial scrapers. Most tools are made of local chert and were used to scrape wood or other soft material.

[121] Third Organizer

Braly, Bobby [82] see Sullivan, Lynne P.

Brandt, Steven (University of Florida) and Lucas Martindale Johnson (University of Florida)

[96] *Lithics, Community Organization and Early State Formation at the Pre-Aksumite site of Mezber, N.E. Ethiopia*

A second season of analyzing > 6000 lithics from Mezber, NE Ethiopia has expanded our knowledge of Pre-Aksumite technological/social organization. Local, possibly specialized knappers obtained obsidian (50%) and other raw materials from near-distant sources, possibly through/for trade. "LSA"-like assemblages, absent of foreign influence, were produced from prepared and unprepared blade/flake, radial, and bipolar cores via direct and indirect percussion. Functional and activity differences are suggested by raw material-specific types and lithic variability between architectural units. We conclude with discussing the role of lithics in shaping Pre-Aksumite community activities/relations and early state formation in N. Ethiopia/Eritrea during the 1st millennium B.C.E.

Brant, Erika [39] see Zori, Colleen

Brashler, Janet (Grand Valley State University), Laura Sherrod (University of Pennsylvania, Kutztown) and Donald Gaff (University of Northern Iowa)

[115] *Remote Sensing at the South Flats Earthwork, 20MU2*

This paper presents results of a remote sensing project conducted during the summer of 2010 at the South Flats Earthwork located in Muskegon County, Michigan. George Quimby tested the site in 1937 and Grand Valley State University returned in 2006 to reexamine the site. Results from this research, including mapping and excavation data, suggested minimal disturbance and the possibility of subsurface features. To explore this possibility, both GPR and magnetometer surveys were done at the site in 2010, making it possible to test several hypotheses about the site structure and function generated by earlier fieldwork.

[115] First Chair

Brashler, Janet [236] see Madden, Gwyn D.

Braswell, Geoffrey (UC San Diego)

[116] *Production, Distribution, and Control: Maya*

Obsidian in the Classic to Postclassic Periods

Obsidian or volcanic glass was subject to widespread circulation in ancient Mesoamerica. Yet there is little evidence that Maya elites sought direct control of outcrops and quarry sites. Thus, elite control of this important resource either: (1) did not exist; (2) was manifested in some other aspect of the means of production; or (3) involved distribution rather production. This paper seeks to examine important changes in the production and distribution of obsidian as that material became commodified during the Classic to Postclassic periods.

[224] Discussant [116] Third Organizer

Braun, David [97] see Dillian, Carolyn

Braun, Gregory (University of Toronto)

[55] *Ancestral smoke: social aspects of Iroquoian ceramic production*

This paper investigates some of the social contexts and functional considerations underlying smoking pipe and pottery production at several Late Woodland Iroquoian village sites in southern Ontario. Manufacturing characteristics, examined through petrography and macroscopic observations, suggest that certain raw materials held symbolic value; that pottery and pipe production were very differently organized; and that these differing modes of production shed light upon broader social changes that had occurred by the beginning of the late Woodland Period. In particular, this paper explores what the production of smoking pipes might tell us about changes to religious and shamanistic practices.

Braun, Matthew [162] see Wescott, Konnie

Bray, Tamara (Wayne State University)

[24] *Huacas, Ritual Commensality, and the Imperial Inca Agenda: Non-Human Persons as Political Agents in the Pre-Columbian Andes*

The late pre-Columbian landscape comprised a multitude of cultural and natural features classified as huaca. Native peoples regarded these phenomena as both animate and powerful. This paper considers how huacas were socially constituted and engaged, and how they figured in the political agenda of Tawantinsuyu. The theoretical approach adopted recognizes the significance of commensality in the construction of social relations, advances the notion of material agency, and allows for the idea of other-than-human persons as relevant social actors. The manner of Inca engagement with different huacas suggests their importance as political allies and the role they played in materializing the imperial agenda.

[15] see Echeverria, Jose

Breister, Anne (California State University, Long Beach) and Carl Lipo (California State University, Long Beach)

[207] *Technological Changes in Brownware from Owens and Death Valleys*

The brownware of Owens and Death Valleys changed in their technologies over time and through space. Analysis has been conducted to evaluate the hardness, firing temperature, surface area and roughness, and the thermal parameters of ceramic samples from this area. This information sheds light on the use of the pottery as

both transportation and cooking vessels. This research will ultimately contribute to the broader discussion of prehistoric Western Great Basin ceramics.

Brennan, Ellen (National Park Service), Ian Hough (National Park Service/Grand Canyon National Park) and Charlie Webber (National Park Service/Grand Canyon National Park)

[248] *Investigating A New Organic Amender Compound For Use During Stabilization Activities On Prehistoric Structures at Grand Canyon National Park*

The Grand Canyon National Park Vanishing Treasures Program is using a new, organic, amending material to help control erosion on the earthen bench in Kiva A at Tusayan Ruins. Architectural preservation in the American southwest is focusing on the application of materials that are both functional and sympathetic with original prehispanic architecture, providing the context for testing and applying new non-cement and non-polymer stabilization amendments. This paper will provide a comparison between the new organic amender and previously used inorganic amenders, insight into the properties of the material, laboratory analysis, the recipe used for preservation treatment, and the application process.

Brennan, Ellen [20] *see Hough, Ian S.*

Brenner, Mark (University of Florida) [119] *Discussant*

Breslawski, Ryan [177] *see Jones, Emily Lena*

Bridges, Elizabeth (University of Michigan)

[189] *Local Production and Imperial Culture: Situating the Keladi-Ikkeri Nayaka State in Relation to the Vijayanagara Empire of Late Pre-Colonial South India*
Local rulers and residents of the Keladi-Ikkeri Nayaka State enjoyed a high degree of political autonomy while subordinate to the Vijayanagara Empire, followed by independence after imperial disintegration. Results of recent survey at two sequent capitals of this regional state will be presented and discussed with reference to the development of interpretations and (re)creations of regional and imperial ideologies, emphasizing the roles of local production and social relationships in this recursive process.

Bridges, Sarah (USDA Natural Resources Conservation Service) [87] *Discussant*

Brock, Terry (Michigan State University)

[214] *Teaching Archaeology and Community Engagement through Blogging: A Public Archaeology Field School Project at Michigan State University*
Blogging has had an impact on both public engagement and college teaching. This paper will use a field school blogging project implemented by the MSU Campus Archaeology Program to discuss the importance of digital community engagement, and how blogging can be used to not only share results, but also to teach the public about archaeological methods. Additionally, it will discuss how blogging for the public can teach students about archaeological methods, while training them in important public archaeology skills necessary for the future of both archaeology and science.

Brock, Terry [214] *see Nohe, Sarah A.*

Brodbeck, Mark (HDR) and Micah Hale (ASM Affiliates)

[168] *Exploring Prehistoric Settlement and Land Use in the McCain Valley Region, San Diego County, California*
Archaeological surveys conducted for renewable energy development and transmission have documented a cross-section of prehistoric settlement and land use in the mountainous McCain Valley region, in eastern San Diego County. Prior inventories in McCain Valley documented widespread Late Prehistoric occupation, particularly during the last 1,000 years. While several important prehistoric sites and ethnohistoric villages are known for the broader region, the character of settlement and subsistence shifts in the region remains a focus of current research. This paper discusses the results of recent surveys with emphases on human adaptation to the geographical landscape and placement within a regional settlement context.

Brody, Michael [113] *see Fisher, Jack*

Brokaw, Nick (University of Puerto Rico), Sheila Ward (University of Puerto Rico), Stanley Walling (Community College of Philadelphia) and Marisol Cortes Rincon (Humboldt State University)

[148] *Trees at ancient Maya sites in northwest Belize*
To understand how ancient Maya landuse has affected the modern forest, we correlated topography and ancient features with tree species (stems = 10 cm diameter) at Maya sites in northwest Belize. Useful species accounted for about 38% of the species and individuals, indicating that the forest is rich in useful trees but is not dominated by them. Species composition varied with both topography and land use, making it difficult to determine the extent to which environment versus ancient cultivation explain current distributions. We outline a plan to resolve this conundrum at the landscape level.

Brooks, Katherine (University of Arizona)

[260] *Investigating the Pre-Columbian Origins of Yaqui Ceremonial Masks*

As a group living on the fringes of both Southwest and Mesoamerican civilizations Yaqui cultural and ceremonial origins have been difficult to pinpoint. By conducting a detailed investigation of ethnographic and archaeological records from Northern Mexico and the Southwest a new perspective on the introduction and development of Cahitan masked ceremonies is presented. Research objectives focused on ethnoarchaeology and sought to examine masking traditions among Aztec, Pueblo and Prehistoric cultures chronologically beginning with settlement in Sonora around A.D. 550 and continuing until Spanish contact.

Brooks, William (Geologist)

[267] *Amalgamation and Small-Scale Gold Mining in the Ancient Andes*

The volume of gold provided by Atahualpa, the Inka king, as ransom in 1532 is hard evidence for the efficient small-scale gold mining that took place before European contact and the number of gold occurrences in the Andes. At Huancavelica, Perú, mercury occurs as a native metal and as cinnabar. Similarly low levels of mercury in ICP analyses of modern refogado gold (~15

ppm) and pre-contact worked gold (~15 ppm) are consistent with a comparable, ancient Andean technology that would have used mercury to amalgamate the gold, and then, as now, burning the amalgam to volatilize the mercury, beautify, and recover the gold.

Brosseder, Ursula (University of Bonn)

[54] *Xiongnu and Elite. Toward an understanding of networks*

During the Xiongnu period Elite burials form a homogeneous group regarding their construction and furnishing, including numerous foreign artifacts which document far-reaching contacts. In this paper the relationship of the Elite to the local communities is explored as well as the connections of the Elite along the Eurasian Steppe Belt. The intensive communication leads to similar models of self-representation in the Western and Eastern Eurasian Steppe during the centuries around the turn of the era. Models for explaining the nature of the contacts, which are visible in the archaeological record are discussed.

Broughton, Jack (University of Utah), R. Kelly Beck (University of Utah), Dennis H. O'Rourke (University of Utah) and Alan R. Rogers (University of Utah)

[126] *Did Aboriginal Hunters Cause a Population Bottleneck In California Elk? A Test Using Ancient DNA and Implications for Prehistory and Resource Management*

Recent research has documented numerous cases of prehistoric resource depression from standard zooarchaeological data. However, standard measures of prey population trends may not reflect broad-scale population declines, but rather the movement of prey away from densely settled human populations. More refined methods capable of measuring population-level trends in prey populations are thus warranted. We summarize such a method here that is based on temporal trends in genetic diversity derived from the DNA in archaeological faunas and provide preliminary data on genetic diversity from a pilot study involving elk from the San Francisco Bay area

Brouwer, Marieka (Michigan State University)

[108] *Simulating Early Holocene Hunter-Gatherer Land Use Strategies in the Netherlands*

Predictive modeling is often used to generate hypotheses and expectations, and identify landscapes with high potential for archaeological preservation. While useful for conservation and heritage management, the procedures underpinning predictive modeling also provide a hypothetical laboratory for experimenting with the known archaeological and ethnographic records, as they relate to current theories of human behavior. Such modeling is applied here in an effort to harness data of disparate quality and detail on the Mesolithic period (c. 10,000-6000 years BP) in the central river valley of the Netherlands. Specifically, GIS techniques are paired with environmental modeling software to simulate human land use.

Brown, Batsulwin [172] *see Parker, John*

Brown, Brooke M. [87] *see Gebauer, Rachel Smith*

Brown, Claire [107] *see McNeill, Casey M. [107]*

Lettieri, Philip R.

Brown, David (University of Texas at Austin), Mark Willis (Blanton & Associates, Inc., Austin, Texas) and Byron Camino (Instituto Nacional de Patrimonio Cultural, Quito, Ecuador)

[15] *Standing at the edge of empire: the view from the tiniest Inka fort in Ecuador*

Fortress sites are the dominant architectural feature of the Inka occupation of northern Ecuador. The small site of Capillapamba in the Yumbo region in the forested slopes of northwestern Pichincha province offers yet another perspective on such sites, which show amazing variability in size, configuration, and construction style. Capillapamba, which consists of a small residential compound and a tiny, stone-walled, terraced prominence that guards a stream crossing, suggests the diversity of Inka military strategies in the conquest and stabilization of Ecuador as well as the cost in infrastructure and personnel that conquest may have brought to the empire.

Brown, Gary (Aztec Ruins Natl Monument)

[117] *The Transition Between Chacoan Colony and Center of the Middle San Juan Region: A View from Aztec Ruins*

Middle San Juan culture history began at Aztec Ruins with Earl Morris's ideas about Chacoan colonization, abandonment, and reoccupation by non-Chacoan people. This history was extended by Morris from Aztec Ruins to other parts of the middle San Juan and adopted by subsequent researchers at both Chacoan outliers and smaller sites. Population declined in much of the area after collapse of the Chaco-based regional system, but my study of architectural evolution shows that large outliers where reoccupations have commonly been assumed are the very sites with long, continuous histories. These occupations are not static, however; they are punctuated by reorganization.

Brown, Gary [201] *see Diederichs, Shanna R.*

Brown, James (Northwestern University) and John Kelly (Washington University)

[198] *Agency, Event, and the Potential for Surplus in the Mississippian Period*

The production of agricultural surplus in the Pre-Columbian Southeast has been invoked rather casually to enable forms of social complexity associated with major mound-building efforts. Little attention has been directed toward how surplus could potentially be generated given the range of factors suppressing surplus generation in historically known southeastern societies. Crucial to overcoming these factors are differences in the ways in which labor is organized and in the ritual obligations created in segmentary societies to unite families with disparate interests. The context used in this paper is Cahokia and the American Bottom in the 11th century.

Brown, Jim (Tribal Administrator Elem Indian Colony)

[172] *Tribal Administrator Fired for trying to get EPA to Comply with Section 106*

In 2006, EPA's failure to comply with Section 106 resulted in the destruction of 7,000 cubic meters of cultural soils on the Elem Indian Reservation. While the

Tribal Council held closed meetings to consider filing suit against the EPA for damages, the EPA Field Manager hired the Tribal Chairman as a "Site Manager" and asked him to write a letter approving of how the work was conducted. When the Tribal Administrator exposed this conflict of interest and EPA's non-compliance, he was fired. This paper explores how the EPA uses blackmail and coercion to avoid their Section 106 obligations.

Brown, Jim [172] *see Parker, John*

Brown, Kelly (McMaster University) and Tristan Carter (McMaster University)

[63] *Networking in the Neolithic: Obsidian Sourcing at Abu Hureyra (N. Syria)*

Situated on the Middle Euphrates (Syria), Abu Hureyra's occupation sequence spans the transition from hunter-gatherer to early farming economies. Using EDXRF 166 obsidian artefacts were characterised as a means of clarifying the community's external relations over 4000 years (Epi-Palaeolithic to Pottery Neolithic). At least three sources are represented, from central and eastern Anatolia. When temporally and techno-typologically contextualised, significant distinctions are viewed in these obsidians' consumption, indicative not only of shifting socio-economic relations at the local and supra-regional level, but also potentially changes in the networks through which flowed the idea and knowledge of new practices, such as farming.

Brown, Kristin M. [163] *see Gibbs, Tim*

Brown, Letricia [193] *see Fertelmes, Craig M.*

Brown, Linda (The George Washington University)
[250] *Discussant*

Brown, M. (The University of Texas at San Antonio), Leah McCurdy (UT-San Antonio) and Jennifer Cochran

[51] *Recent Investigations at the site of Xunantunich, Belize*

Recent investigations at Xunantunich's Group E documented a long history of occupation beginning as early as the Preclassic period and continuing through the Protoclassic. Group E was abandoned during the Protoclassic and reoccupied during the Late Classic. Postclassic ritual activity indicates the continuing importance of this special location on the ancient landscape. This paper describes this data and examines the development of political authority in the Mopan Valley during the Preclassic period. The layout and design of the Group E ceremonial complex reflects the strategies used by elites to connect themselves to powerful ancestors and deities.

[51] *First Chair*

Brown, Sean (CSU Northridge) and Matthew Des Lauriers (CSU Northridge)

[132] *The Persistence of the Commons: A View from Isla Cedros, Baja California*

A trans-Holocene record from shell midden excavations has facilitated the reconstruction of prehistoric mussel bed exploitation on Isla Cedros, Baja California. Cumulative proportional curves indicate that mussel harvesting strategies alternated between plucking and

stripping, yet shell size data exhibit no signs of marked periods of population depression or long term degradation of the resource. Furthermore, relatively stable mean shell sizes suggest that the prehistoric Cedros Islanders were able to avoid the "tragedy of the commons" in spite of the relative accessibility of mussel beds.

[132] *First Chair*

Brown Vega, Margaret (Penn State University)

[229] *Beyond Battles: Interactions in Times of War on the Northcentral coast of Perú*

War comprises myriad social interactions: combat, resistance, alliance, exchange, ritual, and avoidance. Recent treatments of war emphasize the identification and examination of physical violence and military spaces. Yet during war, interactions that are not explicitly violent also contribute to the transformation of social relationships and identities. For example, rituals of solidarity may be as important as actual combat. Thus, the archaeology of war entails a complex mosaic of seemingly contradictory evidence. Using regional data from late prehispanic fortifications along the northcentral coast of Perú, and ritual contexts from one such fort, I illustrate non-conflict interactions shaped by war.

Browne Ribeiro, Anna (University of California, Berkeley), Mark McCoy (University of Otago), Michael Graves (University of New Mexico), Oliver A. Chadwick (University of California, Santa Barbara) and Peter Vitousek (Stanford University)

[261] *The Sustainability of Irrigated Taro Farming in Hawai'i: Sedimentology and soil nutrients analysis of a deeply-stratified pondfield*

How sustainable was irrigated farming in Hawai'i? We describe the results of soil nutrient and sedimentary analyses of a deeply-stratified pondfield deposits representing a 700 year long record of irrigated taro farming in the North Kohala District, Hawai'i Island. Samples from stratigraphic layers were sorted by particle size, shape, roundness, and lithology to determine the origin of sediments as well as modes of transport and deposition. Concurrent soil nutrient analyses were conducted to determine what changes are evident with the onset of taro harvesting and how sustainable this system was in practice.

Bruce, BranDee [83] *see Perry, Lauren M.*

Bruchac, Margaret (University of Connecticut) [1]
Discussant [252] Discussant

Bruck, Joanna (University College Dublin)

[226] *Cremation, Gender and Concepts of the Self in the British Bronze Age*

Both cremation and inhumation were practiced in Early Bronze Age Britain, but women were more frequently cremated than men. This paper will challenge the notion that cremation was reserved for individuals of lower status. Instead, it will suggest that cremation was a strategy designed to facilitate the dispersal of the human body and the circulation of ancestral relics, ensuring social, material and biological reproduction through the maintenance of inter-group relationships. As such, cremation and inhumation reflected very different concepts of the self, indicating the different positions and

roles of women and men within Early Bronze Age kinship structures.

Brueggeman, Alex [208] *see Monroe, Shayla L.*

Brumfiel, Elizabeth (Northwestern University)

[21] *How and why the Aztecs invented Otomí ethnicity*
Taking the Otomí as an example, I argue that neither language groupings such as "the Otomí" nor regional groups such as "the Chalca" constituted ethnic identities prior to Aztec dominance. Aztec rulers imposed these ethnic identities upon Postclassic populations to promote their own historiographic and administrative purposes. Archaeologists should not expect to see such groups marked archaeologically by distinctive food, dress or other practices. Instead, such diacritica might observed at the local city-state and its calpulli and teccalli subdivisions, whose identities were rooted in shared histories of migration and settlement, and thus might qualify as ethnic groups.

[198] *Discussant*

Brunelle, Andrea (University of Utah), Larry Coats (University of Utah) and Stacy Morris (University of Utah)

[91] *Figuring it out as we go: Paleoecology in Range Creek Canyon*

In order to provide environmental context for the settlement, occupation, and abandonment of Range Creek Canyon by the Fremont, paleoecological studies have been underway for the last 5 years. Despite the challenges of paleoecological reconstruction in arid environments, preliminary data indicate that utilizing a multiproxy approach will yield information about the vegetation, climate, disturbance regimes, and the interrelationships among these and the Fremont. To date we have a post-Fremont fire history, a clear pollen benchmark for the arrival of historic populations, an alluvial chronology that shows significant post-Fremont alluvial deposition and Fremont-age packrat middens with maize pollen.

Brunson, Tiffany (University of Idaho, Moscow)

[175] *What Boys and Girls Are Made Of: Historic Archaeology at the Fort Spokane Indian Boarding School*
Though well researched by historians, few Indian boarding schools have been excavated by archaeologists despite their importance in Indian history and what they reveal about the federal policies of forced assimilation. Fort Spokane in Northeastern Washington served as a federal Indian boarding school from 1899 until 1910. Investigations there in 2010 focused on the dormitories for the young girls and for the young boys. Differences between the personal adornment artifacts found in these structures reveals how Indian children at boarding schools were indoctrinated in Euro-American gender roles and how they may have resisted those roles.

Brunswig, Robert (University of No Colorado)

[101] *The Numic Expansion and Colorado's Southern Rockies: The view from North Park Valley and Rocky Mountain National Park*

Contemporary archaeological thought places the initial expansion of Numic Ute peoples into central Colorado's Southern Rocky Mountains no earlier than 400 years ago. Since 2000, two University of Northern Colorado

(UNC) projects, the Sacred Landscapes Project (Rocky Mountain National Park) and North Park Cultural Landscapes Project have produced substantive evidence, in the form of hunting camp excavations, AMS-dated ceramics, and lichen-dated ritual features that prehistoric Ute occupation of what was historically known as traditional Ute lands began no later than 800, and possibly as early as 1000, years ago. This paper documents the research history and contexts of that evidence.

Bryan, Adrienne (Stanford University)

[269] *Exploring the significance of the spaces in the Ceque System of the Inca*

For years, archaeologists have productively studied either the ritualistic pathways (ceques) or the landmarks along the paths (huacas) as a means to understand the religious life of the Incas. However, few have focused and the spaces in between the ritual nodes along the ceque lines. This past summer, I followed three ceque lines and paid particular attention to the spaces in between the previous documented ritual nodes in order to provide a more robust picture of these ceremonial routes that once played an integral role in the Inca religious system.

Bryant, Jr, Vaughn M. [35] *see Thoms, Alston V.*

Brzezinski, Jeffrey (University of Central Florida), Sarah Barber (University of Central Florida), Arthur Joyce (University of Colorado at Boulder) and Andrew Workinger (University of Tennessee - Chattanooga)

[5] *Ideology through Iconography: An Analysis of late Terminal Formative Decorated Ceramics from the Lower Rio Verde Valley, Oaxaca, Mexico*

This study investigates worldview and ideology during the late Terminal Formative period in the lower Rio Verde Valley of Oaxaca, Mexico, through an analysis of iconography found on fine gray ware ceramic vessels. The sample includes 464 vessels and sherds from 17 sites obtained through excavations and surface collections between 1988-2009. Drawing upon theories of semiotics and style, a suite of icons have been identified suggesting that ceramics were a medium for expressing regionally shared beliefs. Evidence also indicates that a shared ideology may have been promulgated by elites at the regional political center of Rio Viejo.

Buchanan, Briggs (Simon Fraser University), Mark Collard (Simon Fraser University), Marcus Hamilton (University of New Mexico/Santa Fe Institute) and Michael O'Brien (University of Missouri)

[22] *Investigating the relationship between early Paleoindian point form and prey body size*

It has long been argued that prey size influenced the size and shape of early Paleoindian projectile points. This hypothesis was tested with standard and geometric morphometric data recorded on Clovis and Folsom points from the Southern Plains and Southwest that are associated with mammoth or bison remains. Points used to hunt mammoth were found to be larger and of a different shape than points used to hunt bison, which supports the hypothesis. However, when point type was taken into account as well as prey size the results ran

counter to the hypothesis' predictions. Explanations for this discrepancy are discussed.

Buchanan, Briggs [155] *see Collard, Mark*

Buck, Paul (Nevada State College/Desert Research Institute) and Donald Sabol (Desert Research Institute)

[163] *Optimal Prehistoric Maize Field Location in Mt Trumbull AZ Area*

Remote sensing & field work in Mt Trumbull AZ was conducted to determine optimal locations of prehistoric maize fields. Imagery examined: 18 ASTER images collected 2000-2008; 1-m digital orthophoto quads; 10 m digital elevation data for the same quads; and NRCS soil maps. New ASTER images, ground based IR camera images, & soil moisture data were acquired May 2010. A crop/habitation model shows optimal (& suboptimal) areas for prehistoric maize agriculture. Important factors include high soil moisture to support germination & tasselling; specific soil associations; sufficient precipitation during the summer; sufficiently long growing season; & a plant community dominated by rabbit brush.

Buckland, Philip (Environmental Archaeology Lab, Sweden), Erik Eriksson (Umeå University, Sweden) and Johan Linderholm (Umeå University, Sweden)

[153] *Mapping, querying and presenting multiproxy environmental archaeology*

Recent developments in environmental archaeology databases and GIS implementations are opening up new avenues for quantitative landscape reconstruction at multiple scales. Relational databases and access to multiple datasets allow for more comprehensive information retrieval, where multiple criteria can be specified over multiple layers to help answer complex research questions. The returned data are often multi-dimensional (space, time, proxy source, accuracy...) in nature and pose interesting challenges for communicating to different audiences. The Strategic Environmental Archaeology Database project (www.sead.se) provides systems for the collation, querying, mapping, teaching and dissemination of such data, pushing the front line of palaeoenvironmental research.

Budhwa, Rick (Northwest Community College)

[160] *Toolstone Geographies and Indigenous Sense of Place in British Columbia, Canada: The Importance of Local Knowledge*

A 'sense of place' may be defined as a perception held by people to a certain place on the landscape which promotes a strong sense of identity. Thus, 'places' are not just physical sites but also composed of cultural essences interwoven with Indigenous epistemological concepts. In this paper, I examine the relationship of obsidian sources to Indigenous peoples' concept of being. Examples of locations where local traditional knowledge has led to obsidian sources previously unknown to archaeologists will also be discussed. Lastly, I review the continuing support for the maintenance of Indigenous peoples' culturally meaningful relationships to their landscapes.

Bueno, Lucas (LEEH - Universidade de São Paulo)

and Adriana Dias (Universidade Federal do Rio Grande do Sul)

[213] *Late Pleistocene/Early Holocene Archaeological Record in Brazil: a geo-referenced database.*

In recent years there has been an increase in development of methods for calibrate and analyse radiocarbon dates from the archaeological record. At the same time, new sites have been discovered producing a more detailed set of dates for different periods and regions. In Brazilian archaeology, this scenario has led to the construction of new venues of enquiry, raising questions about routes of entry, paleoenvironmental changes and cultural diversification. In this paper we will discuss the construction of a geo-referenced database for sites dated by 13-7.000 BP in Brazil and its implications for the peopling of lowland South America.

Bulger, Teresa (University of California Berkeley)

[195] *Family and Everyday Practices: Tracing Intimate Relationships at a 19th-century Free African American Homesite*

Despite the importance of "the black family" in the development free black communities in the 19th century, this institution has only begun to receive the attention it deserves in archaeological analyses. Family life was a social space to continue cultural traditions, foster intimate relationships, and reinforce values. This paper examines archaeological patterns from a 19th-century free black homesite and asks how everyday practices created and reiterated familial relationships and the black family as a social institution. This paper will also show how an extended concept of relationality within black families became fundamental to the creation of interdependent African American communities.

Bullock Kreger, Meggan

[72] *Morbidity and Mortality in the Postclassic Urban Center of Cholula*

A paleodemographic and paleopathological study of 309 Postclassic skeletons from Cholula was completed to characterize morbidity and mortality in this Mesoamerican city. Several new methodological approaches, including transition analysis, a parametric model of mortality, and a multistate model of health were incorporated into the analyses. Strontium and oxygen isotope studies were also carried out to identify immigrants in the population and determine how they affected the demography of the city. Results suggest that the cultural and epidemiological environments of Cholula contributed to the formation of demographic patterns that differed from those observed in preindustrial Old World cities.

Buonasera, Tammy (University of Arizona)

[61] *GC/MS analysis of Lipids from New and Old Experimental Grinding Tools*

Very little is known about the preservation of ancient lipid residues in ground stone artifacts. If techniques currently used for analyzing lipid residues in ceramics can be applied to ground stone, they may provide a valuable new means of probing artifact function and addressing long-standing questions about changing patterns of resource use. As an early step towards this end, lipids extracted from new and old experimental grinding tools, each used to process a single, known substance were compared via GC/MS. Old samples were last used

between 10 to 25 years ago. Implications for preservation and identification are discussed.

Burant, Eric [104] *see Schuetz, Eric J.*

Burchell, Meghan (McMaster University), Aubrey Cannon (McMaster University), Nadine Hallmann (University of Mainz) and Bernd Schöne (University of Mainz)

[205] *Linking High Precision Seasonal Inference with Structures of Site Use on the Central Coast of British Columbia*

We apply high-resolution sclerochronology and oxygen isotope analysis of butter clam shells from shell midden sites to differentiate seasonally structured intensive production and more casual supplemental use of shellfish at different locations. Combined, these methods allow for very precise identification of shellfish collection by providing greater seasonal amplitude in isotope profiles. Beyond issues of accuracy and precision, we also confront the problem of sample selection. We use our results to gauge the capacity of archaeology to infer millennia-long patterns of site use from limited samples representing particular shellfish collection events.

Burghardt, Lucy (University of Cambridge), Donna Nash (University of North Carolina - Greensboro) and Mark Golitko (Chicago Field Museum)

[193] *Obsidian sourcing points to inclusive exchange for the people of Cerro Mejía*

Peru's Moquegua Valley was a popular locale during the Middle Horizon, and became home to many travelers. The settlements Cerro Baúl and Cerro Mejía represent the southernmost extent of Wari expansion during the Middle Horizon. However, the supply network these sites used appears not to have been exclusive. In 2009, excavations of two households on Cerro Mejía produced 140 obsidian artifacts which were sourced using p-XRF equipment. The presence of diverse obsidian sources has indicated that the inhabitants of Cerro Mejía had a complex trade network shaped by migration, affiliation with the Wari capital, and interaction with Tiwanaku neighbors.

Burge, Thomas (Sequoia and Kings Canyon National Parks)

[57] *Archeological Surveys in Sequoia and Kings Canyon National Parks - The Higher Elevations of the Southern Sierra Nevada*

Archeological surveys were conducted in the higher elevations of Sequoia and Kings Canyon National Parks from 1997 to 2004. A total of 88 sites were recorded or revisited. Seasonal occupation of alpine and sub-alpine zones is documented. Site types and artifacts are summarized, with a prevalence of Late Prehistoric projectile points being noted. Fifty-five obsidian specimens were submitted for sourcing and hydration analysis. Ten obsidian specimens were submitted for protein residue analysis. The results of these analyses are presented and summarized.

Burger, Paul (California State University Long Beach)

[105] *Landscape Models for Early Human Occupation in Offshore Contexts of Southern California*

There is increasing evidence to support Fladmark's 1979 hypothesis that the earliest occupation of North America

included movement of populations down the west coast. With some of the earliest evidence of human occupation located in coastal and island contexts and a sea level that was as much as 100 meters lower than today, there are ample reasons to believe that remains of human occupation will be found in offshore contexts of Southern California. Using high-resolution bathymetric data and estimates of sea level change, we develop a model of now-underwater locations that potentially contain evidence of prehistoric human activity.

Burger, Richard (Yale University) [267] *Discussant*

Burgess, Robin [162] *see Wescott, Konnie*

Burham, Melissa (University of Arizona)

[225] *The Preclassic Occupation in the East Court at Ceibal*

Recent excavations of the East Court of Group A at the Maya lowland site of Ceibal, Guatemala, have revealed that this area was occupied for an extended period of time in the Middle Preclassic period. Several structures that form a patio may indicate a residential occupation. These data are similar to findings from excavations in other areas of Group A. They provide new insights into the nature of the Middle Preclassic occupation at Ceibal.

Burke, Ariane [205] *see Julien, Marie-Anne*

Burke, Chrissina (University of Nevada - Reno)

[30] *Beyond the Puncture: Examining the Relationships between Carnivore Feeding Behaviors and Modification Marks Present on Zooarchaeological Skeletal Remains*

To identify carnivore taxa responsible for modifying animal bones in archaeological assemblages, the feeding behaviors of carnivores must be observed and recorded. This presentation describes a pilot study where captive North American carnivores were fed articulated hind limb elements of Bos and Ovis. Videography, photography, and ethological recording methods were employed to collect behavioral data. Subsequent to feedings, modified bones were cleaned then described following Binford (1981) and Lyman (2001), and degree of utilization follows Haynes (1982). Results are discussed in the context of human and carnivore paleoecology and the usefulness of carnivore behavior in deciphering taphonomic events.

[30] *First Chair*

Burkholder, Jo (University of Wisconsin - Whitewater) and Erika Simborth Lozada (Proyecto Arqueológico Pisanay/CIARQ)

[33] *Putting Interdisciplinary Work at Pisanay, Peru in Context*

How has the Pisanay Archaeological Project helped to foster interdisciplinary collaboration, undergraduate research, and advancement of women in science? This poster will examine several factors that contributed to these areas of success and discuss the context for the undergraduate research the project has inspired.

Burn, Michael [202] *see Bain, Allison*

Burnett, Katherine (Indiana University-Bloomington)

[195] *Preliminary Investigations at the Nostrum Springs Stage Station, Thermopolis, Wyoming*

Located on the Red Canyon Ranch southwest of Thermopolis, Wyoming, the Nostrum Springs Stage Station is adjacent to the Wind River Indian Reservation. During the summer of 2010, I undertook preliminary investigations on the stage station. Through this research, I intended to investigate Shoshone intersections with other travelers utilizing the area during the reservation area and into the 20th century. I discovered many additional areas of inquiry ranging from the presence of a potential blacksmith's shop in the station to a cartridge found behind the building that may indicate that someone at the station had connections to the Russian Revolution.

Burns, Inna [81] *see Shah, Sudha A.*

Burstrom, Mats (Stockholm University, Sweden)

[254] *"As Long as the World Lasts..." Time perspectives within cultural heritage management*

Preservation is an essential part of cultural heritage management; sites and monuments are protected in order to be kept intact for the future. Accordingly site managers encounter difficulties dealing with sites whose foremost qualities are the processes of change and decay that they are undergoing. It would seem that cultural heritage should be forever or not at all. The belief in this kind of 'eternal' perspective is in no way new, but the present preoccupation with sustainability has reinforced it and placed it in a new discourse.

Burton, James H [116] *see Sierra Sosa, Thelma*

Burton, Margie (San Diego Archaeological Center) and Jenny Adams (Desert Archaeology, Inc.)

[22] *Ground Stone Tool Analysis: Contributions of a Use-Wear Approach*

In the world of lithic analysis, it is rare for use-wear techniques to be applied to the study of ground stone tools. Yet ground stone tools are used to make sweeping generalizations about subsistence strategies, notably in California where mortars and pestles are assumed to have been used for processing acorns and viewed as hallmarks of a lifestyle distinct from coastal adaptations. Experimentation with processing tools and use-wear analysis techniques have both broadened and refined the kinds of inferences made about prehistoric foraging and farming activities. Tool designs and the nature of processed substances are discussed.

Busby, Colin (Basin Research Associates)

[230] *Alas, poor Billy, I wish I knew him well (with apologies to Shakespeare)*

Two graduate student generations removed from the heyday of Great Basin archaeology under Bob Heizer at UC Berkeley, I soon learned of the legacy and larger than life legend of Billy Clewlow and assorted cohorts. The group had received their doctorates and had moved on but had left lingering memories among the faculty, hanger-on graduate students and admirers and museum staff. Among other things, the laboratory and museum back rooms harbored the residues and detritus of his past research which proved most helpful with my future research.

Bush, Jason (Colorado State University) and Christopher Fisher (Colorado State University)

[58] *Architectural Form and Space in the Lake Pátzcuaro Basin, Mexico*

Ancient architecture is an expression of past human settlement, reflecting the manner in which the larger society was organized. Despite its ubiquity, Prehispanic architecture is poorly understood in the Lake Pátzcuaro Basin, Michoacán, Mexico. However, recent settlement pattern survey in the eastern Lake Pátzcuaro Basin provides new insights into the relationship between architecture, social space, and the formation of the Purépecha (Tarascan) Empire. Here I examine the form and spatial organization of prehistoric architecture at Sacapu Angamucu to gain new insights into the development of social complexity and the built environment.

Bustinza, Reynaldo Bustinza [269] *see Rodriguez, David M.*

Butler, Don [159] *see Hodgetts, Lisa*

Butler, Sarah [220] *see Friedman, Elizabeth S. [158]*
see Dodd, Lynn S.

Butler, Virginia (Portland State University) and J. Tait Elder (ICF)

[126] *Does the absence of evidence mean an evidence of absence? Applying zooarchaeological records to fish conservation issues in the Upper Columbia River*

Zooarchaeological records can greatly assist conservation efforts by providing base-line knowledge of pre-development species distributions. As Lyman demonstrated over a decade ago, transferring archaeological data to conservation biology introduces several interpretive challenges, including determining whether species scarcity in the archaeological record reflects true absence or some other factor (e.g., sampling, taphonomy, past cultural practices). Questions of past salmon distribution in the Similkameen River of central Washington/British Columbia have arisen in response to proposed dam construction. Our recent study of the faunal record from the river basin and surrounding areas illustrates the analytical steps required to assess faunal data adequacy.

[126] *First Chair*

Butler, Virginia [178] *see Hofkamp, Anthony R. [178]*
see Stevenson, Alexander E. [210] *see Sterling, Sarah L. [108]* *see Gilmour, Daniel M.*

Buttles, Palma (Carnegie Mellon University/Software Engineering Institute) and Fred Valdez (The University of Texas at Austin)

[119] *Material Culture and the Maya of Tikal: Results from Recent Research*

Various material culture (ceramics, lithics, etc.) from the 2009 and 2010 field seasons of the Tikal Program was analyzed for morphological description as well as chronological assessment. Each artifact category studied is reported in terms of a brief description as well as interpretations for particular contexts and the collection as a whole. Although many of the contexts are from within reservoirs at Tikal, the range of the material culture represented is surprisingly broad and impressive.

Buttles, Palma [191] *see Valdez, Fred*

Buzon, Michele [152] *see Smith, Stuart T.*

Byrd, Brian (Far Western) and Adrian Whitaker (Far Western)

[263] *Was Abalone a Low-Ranked Resource along the Central California Coast?*

Prehistoric middens dominated by abalone shell occur in a variety of contexts along the Central and Southern Coast of California. Typically, abalone is considered a high-ranked resource indicative of favorable environmental conditions and an absence of dietary stress. In the Monterey Peninsula area, abalone exploitation explodes around 700 years ago, characterized by numerous abalone shell "pavement" sites. We examine potential causal factors for this sudden focus on abalone. Drawing on insights from optimal foraging theory, we suggest that abalone represent a low-ranked resource requiring intensified procurement and should be considered, in this case, a marker of resource intensification.

Byrd, Julie (Florida State University)

[30] *Florida's Middle Archaic Bone Tools: Microwear Analysis and Experimental Replication*

This study examines Middle Archaic organic technological organization through microwear patterns. Modified bone and antler artifacts from six sites in Florida's St. Johns River Valley were analyzed to reconstruct the processes of tool production and use. Existing classification systems are inconsistent because archaeologists have assumed technofunction based merely on general tool shape. This study's correlations between use-wear and tool morphology help tease apart possible tool functions. Experimental replication proved especially useful in understanding observed microwear. By incorporating data from sites with exceptional preservation, in-depth studies of organic tools contribute to a more realistic picture of prehistoric technological organization.

Byrne, Roger [222] *see Cowart, Alicia*

Byrnes, Allison (Mercyhurst College) and David Pedler (Mercyhurst College)

[29] *Technological Continuity and Site Use at 41CV115A, A Rockshelter in Coryell County, Texas*
Site 41CV115A is a rockshelter located on the Fort Hood military installation in Coryell County, Texas. With occupations beginning in the Early Archaic and continuing through the Late Prehistoric/Protohistoric periods, this multi-component site provides excellent avenues for examining the apparent continuity in site use and lithic technology between the Archaic and Late Prehistoric, as well as more subtle discontinuities. Analysis of the 41CV115A lithic artifact assemblage is employed to illustrate temporal trends in technology and site use. Comparisons with other sites identified on the Fort also are made to place the 41CV115A in a broader regional context.

Cahiza, Pablo (INCIHUSA CONICET - UNCuyo), J.Roberto Bárcena (INCIHUSA-CONICET / FFyL-UNCuyo Argentina), María José Ots (INCIHUSA-CONICET / FFyL-UNCuyo Argentina) and Jorge García Llorca (INCIHUSA-CONICET / FFyL-UNCuyo

Argentina)

[103] *Territories, boundaries and communities in the Central West of Argentina (XV and XVI centuries): Archaeological research on relations between local groups and Incas in south-eastern Collasuyo*

The expansion of the Inca state included vast areas south of Cuzco integrating the current Argentine provinces of La Rioja, San Juan and Mendoza. Our research focuses on the processes that formed and maintained the border with the Inca state in Collasuyo, taking an approach that emphasizes settlement and land-use patterns to understand local communities, Inca landscapes, and their transformations. We also analyzed the ceramic's production and distribution in state context. Our project takes a dual perspective that encompasses that of the empire and its expansion, as well as the dynamics and responses to the empire within local communities

Cail, Hannah (University of Montana)

[70] *Feasting on Fido: Dogs as a Delicacy at Bridge River*

The remains of dogs showing visible signs of trauma were recovered during the investigation of emergent status inequality at the Bridge River site, an aggregated winter housepit village in southern British Columbia. The region's ethnographic record indicates the utilization of dogs as a resource for food, clothing, hunting, packing, and trade. Evidence suggests that the elements from this wealthy house's cache pit resulted from a single event of feasting. The use of dogs as a delicacy is unique compared to the Keatley Creek site, where analysis concludes many of the dogs died of natural causes.

Cajigas, Rachel [10] *see Blair, Elliot*

Caldwell, Megan (University of Alberta), Dana Lepofsky (Simon Fraser University) and Michelle Washington (Sliammon First Nation)

[263] *A Regional Understanding of Northern Coast Salish Intertidal Management*

Understanding the advent and ongoing use of intertidal management features (fish traps and clam gardens) is central to exploring Northwest Coast socioeconomic development. Our multi-sited research creates a regional dataset from which to examine site specific changes and larger regional fluctuations in intertidal resource use. We present the results of faunal analyses, focusing on marine resources, from a series of sites in two sub-regions of Northern Coast Salish territory in southwestern British Columbia. We compare and contrast our results both within and between the two sub-regions to create a fuller understanding of Northern Coast Salish intertidal management features.

Caldwell, Megan [232] *see Springer, Chris L. M.*

Call, Jeremy (AECOM)

[50] *Setting the scene: visual resources analyses of National Historic Trail scenic quality and scenic integrity*
High potential route segments of National Historic Trails offer visitors a high quality recreation experience where greater than average scenic values occur, or afford visitors an opportunity to vicariously share the experience of the original users of the route. As part of managing these segments, agencies face the challenge of

consistently identifying and documenting the scenic quality, and relative freedom from intrusion, of trail settings. This paper discusses how the Bureau of Land Management's Visual Resource Management and U.S. Forest Service Scenery Management System methodologies are being applied to evaluate the scenic quality and scenic integrity of long-distance trails.

Callaghan, Michael [9] *see Kovacevich, Brigitte*

Cambra, Rosemary [194] *see Gardner, Karen S. [194]*
see Monroe, Cara

Cameron, Catherine (University of Colorado) and Steve Lekson (University of Colorado)

[99] *The Chronology of Political Interaction on the Southern Colorado Plateau*

Regional and political centers on the southern Colorado Plateau appear to have "cycled" at approximately 150-year intervals, beginning about A.D. 500 and ending about A.D. 1280. We reconstruct this historical series, and illustrate one episode or "cycle" using chronological and other data from Chaco Canyon and several northern Chacoan great houses (Bluff, Farview, Chimney Rock). We explore the historical and processual implications of these developments.

[46] *Discussant*

Cameron, Catherine [117] *see Hurst, Winston*

Camino, Byron [15] *see Brown, David O.*

Camp, Stacey (University of Idaho)

[175] *Masculinity and Material Culture at Idaho's Kooskia Internment Camp (1943-1945)*

Between May 1943 and 1945, 265 men called Northern Idaho's Kooskia Internment Camp, a World War II Japanese American internment camp, home. There, internees were charged with the dangerous and daunting task of completing U.S. Highway 12: an event that is considered to be the U.S. government's first attempt in using internees as a labor force. As the first all-male Japanese internment camp to be excavated, the Kooskia Internment Camp provides a unique glimpse into how men coped with isolation and unjust imprisonment using material culture.

[175] *Second Organizer [175] Second Chair*

Campbell, Jennifer (University of Toronto)

[146] *Using Two-dimensional Data to Form Three-dimensional Worlds: Moving from Survey to Structure in a Virtual Realm*

This paper presents the process of, and results from, creating a three-dimensional architectural model using published two-dimensional architectural surveys of the Mughal Caravanserai Nur Mahal. This process, and the resulting model, is used to highlight the ability of three-dimensional models to further our interpretation of previously collected two-dimensional data. These models can be used in the comparative analysis of structures and as representations of structures now ruined. The interplay of model subjectivity and data dependency will be considered as they (a/e)ffect the kinds of archaeological research questions that BIM's (Building Information Models), constructed through reverse engineering, can address.

[146] *First Chair*

Campbell, Meadow [206] *see Amadio, Ayla M.*

Campbell, Sarah K. [210] *see Sterling, Sarah L.*

Camps, Marta (George Washington University)

[218] *The Past and Present of the Mid-Upper Paleolithic Transition in Iberia*

In the past decades, Iberia has gone from a peripheral region to a key area in modern human origins research. This paper explores the current debate on the Transition to the Upper Paleolithic in northern Spain. It reviews the context in which the current state of affairs originated, by focusing on the studies of key sites and regions, both from Spanish and foreign perspectives. These studies still influence present day work, despite the existence of modern interpretations which try to highlight crucial characteristics of this area, unlike classical theories. Their effect and prevalence in front of classic studies is assessed.

[218] *First Chair*

Cannon, Amanda (AECOM) and Janet Griffiths (SRI)

[151] *From Land to Sea: The Worked Shell and Bone Collections from the Ballona, West Los Angeles, California*

More than 100,000 pieces of worked shell and bone recovered from ritual and domestic contexts from sites in the Ballona wetlands in west Los Angeles. The diverse collections of locally available and exotic faunal worked materials attest to use of rich terrestrial, marine, and wetland resources, as well as trade interactions with neighboring groups in southern California and afar. The spatial and temporal distributions of these tools and other utilitarian and domestic items provide unprecedented insight into cultural continuity and change in the last 8000 years.

Cannon, Aubrey [205] *see Burchell, Meghan*

Cannon, Kenneth (Utah State University), Chris Morgan (Utah State University) and Molly Boeka Cannon (Utah State University)

[57] *Looking for a Long-Term Record in the Greater Yellowstone Ecosystem: Some Thoughts About the Stinking Springs Rockshelter, Teton County, Wyoming*
The recovery of vertebrate remains is of particular interest for the study of post-glacial biotic community structure and Native American economies in the Greater Yellowstone Area. However, despite intense work, the recovery of organic remains has been elusive. Preservation and site location are probably key factors; with shallow, acidic soils fostering chemical and mechanical breakdown. Sites in particular geologic settings, such as rockshelters, provide research opportunities for extracting organic remains that provide direct evidence of paleoenvironmental conditions and subsistence patterns that are not typically preserved in open mountain sites. The potential importance of the Stinking Springs Rockshelter will be discussed.

Cannon, Mike (SWCA Environmental Consultants)

[126] *Experimental Data on Relationships among Bone Fragmentation, Quantification Measures, and Volume Density*

Experimental data, derived from an incremental bone crushing protocol, provide important insights into the relationship between NISP and specimen fragmentation. They also have practical implications regarding the effectiveness of potential measures of the degree to which an assemblage has been fragmented. In particular, they suggest that specimen size—which is a more direct measure and which can be determined easily through digital image analysis—is a more useful gauge of fragmentation than is the ratio of MNI (or MNE) to NISP. Finally, the experiments allow exploration of how assemblage-level bone volume density characteristics respond to the effects of mechanical crushing.

Cannon, Molly Boeka [262] *see* Pitblado, Bonnie Lynn

Canouts, Veletta (Smithsonian Institution Research), Ronald Bishop (Smithsonian Institution) and M. James Blackman (Smithsonian Institution)

[187] *Compositional Complexity on the Colorado Plateau* Two decades of chemical analysis by instrumental neutron activation have been carried out on ceramics from the Colorado Plateau. Archaeological interpretations have followed from patterns observed in the data matrix. At times, a surprising lack of expectable patterning has been encountered. We have revisited the data sets and find that patterning—and lack of patterning—may be due as much to the geochemistry of the Plateau's resources as to human behavior. We present aspects of the underlying causes for compositional complexity among the ceramic materials and describe the implications for archaeological understanding.

[187] *First Chair*

Cantarutti, Gabriel (University of Illinois at Chicago)

[267] *Inca Mining and Control in North-Central Chile: The Los infieles Mining Complex*

This work discusses the preliminary results of an archaeological survey designed to investigate the Los Infieles, an Inca Period mining complex located 35 km northeast of the coastal city of La Serena, in north-central Chile. The sites are grouped in three clusters that include different types of buildings associated with dozens of open-cut trenches, as well as a hilltop shrine. The survey provides new information on technological aspects of mining operations centered on the exploitation of chrysocolla. The study also provides data on the level of control exercised by the Inca state over the local mining communities.

Canto Carrillo, Rodolfo [221] *see* Clark, Dylan J.

Canuto, Marcello A. [31] *see* Bell, Ellen E.

Cap, Bernadette (University of Wisconsin-Madison)

[190] *A Marketplace System at the Classic Period Maya Site of Buenavista del Cayo, Belize*

A small number of scholars have suggested that the Classic Maya used marketplaces as a means to exchange goods. Recent identification of the physical location of Maya marketplaces confirms this idea but what does the use of marketplaces mean for the organization of Maya economic systems? Drawing on data from the Late Classic Buenavista del Cayo marketplace, this paper addresses this question by looking at the kinds of goods available at the marketplace

and the access to raw materials, organization of production, and transport systems required to bring these goods to market.

[190] *First Chair*

Capawana, Jamie [175] *see* Allen, Josh M.

Capone, Patricia [184] *Discussant*

Capriata Estrada, Camila and David Chicoine (Louisiana State University)

[174] *Building Sequence, Spatial Planning and Mound Construction: Recent Excavations at a Formative Raised Platform Complex at Caylan*

Preliminary results on the excavations of the main mound at Caylan, a Final Formative site located in the Nepeña Valley, north coast of Peru, reveals new evidence on construction techniques for that period of time. Although differences observed in the construction materials indicate the existence of at least two construction phases, focus seems to have shifted from an emphasis in vertical construction to the reorganization of horizontal space. This paper will present results of the 2010 season and a tentative explanation for these changes.

Capriles, José (Washington University in St. Louis) and Juan Albarracin-Jordan (Fundación Bartolomé de las Casas)

[231] *Late Pleistocene human occupation in highland Bolivia: Archaeological evidence from the Sora River caves*

In this paper, we report unique findings from recent archaeological research in the Sora River valley, located in southwest Bolivia. Excavations carried out in two high-elevation dry caves produced radiocarbon dated (12,900 cal BP) evidence of Late Pleistocene human occurrence. Early human evidence consists of deeply buried occupation surfaces situated underneath Early and Middle Holocene naturally accumulated deposits. Contextual findings include hearths associated with scatters of chert, chalcedony, and obsidian tools and debitage, along with camelid and rodent faunal remains. Taken together, these findings suggest extremely early colonization of the highland Andes, possibly in correspondence with improved environmental conditions.

Capriles, José [129] *see* Langlie, BrieAnna S.

Cardillo, Marcelo [22] *see* Charlin, Judith E.

Cardinal, J. Scott (New York State Museum)

[115] *Facilitation of site delineation and assessment through GIS*

Geographic Information System (GIS) software has become a nearly ubiquitous and indispensable tool in many fields of resource management including archaeology. It is applied most frequently, however, to regional data warehousing and management or regional analysis. Such applications under-utilize the scale-independent nature of GIS, which is equally potent for intra-project data assessment. This paper describes techniques for the initial assessment of survey data in the identification and delineation of site boundaries, tools for intra-site analysis of cultural material to facilitate the assessment of site integrity, and expedient visualizations of these data through spatial correlation overlays.

Cardona, Augusto R. [129] *see Hackner, Stacy L.*

Carlson, Eric [176] *see Billy, Nora*

Carlson, Kristen (Northern Arizona University)

[64] *Bison Procurement: A Comparative Analysis of Jump Drive Lane Topography*

Bison jumps represent the oldest evidence for communal hunting in North America. Typically the focus of the archaeologist centers on the bone bed beneath the jump site, overlooking the complex drive lane systems behind the cliff. GIS spatial analysis can run simulations such as a least cost analysis of a landscape. I plan to present a poster outlining a comparison of least cost pathways to the drive lanes of sites in Alberta Canada, and Northern Wyoming. Does it appear that the path of least resistance drives bison or do other factors play a role in drive lane construction?

Carlson, Risa (University of Cambridge) and James Baichtal (US Forest Service)

[181] *Raised Marine Beach Predictive Model results in New Early Holocene Sites in Southeast Alaska*

During the 2009/2010 field seasons Carlson and Baichtal tested a predictive model designed to locate 7,000 to 9,200 YBP archaeological sites in the remote Alexander Archipelago of Southeast Alaska. This model was based on the elevation and age of *Saxidomus giganteus* shells in the highest marine beach deposits from the maximum early Holocene transgression of the sea, circa 8,200 YBP. Not only were six 18 meter terrace sites discovered dating from 6,890 to 9,090 +/-40 YBP containing microblades and classic wedge-shaped microblade cores and a flaked argillite industry, but also a series of progressively younger sites on lower terraces.

Carmody, Stephen (University of Tennessee, Knoxville) and Kandace D. Hollenbach (Archaeological Research Laboratory, UT-Knoxville)

[129] *The Role of Gathering in Middle Archaic Social Complexity in the Midsouth: A Diachronic Perspective.*

Archaic mound building and social exchange networks are argued to be related to risk-sharing strategies. "Risky" conditions are generally based on evidence for increasing population density and decreasing environmental richness associated with the rise and fall of the Hypsithermal period. Plant data are seldom brought to bear on this discussion. Here we compare available data from Middle Archaic sites in the Midsouth to construct evidence for changes in storable foodstuffs prior to and during the Mid Holocene, and discuss the relevance of these changes for arguments regarding economic risk in the region.

Carmody, Stephen [129] *see Bissett, Thaddeus G.*

Carpenter, John (Centro INAH Sonora) and Guadalupe Sanchez (Museo de Sonora INAH)

[147] *Burial Practices in Viejo Cinaloa*

The colonial Spanish province of Cinaloa comprised the Pacific coastal plain and adjacent foothills of the Sierra Madre Occidental between the Río Sinaloa and the Río Mayo. This region encompasses the heartlands of both the Huatabampo and Serrana archaeological traditions. In this paper we describe the various burial types that

have been documented in northern Sonora and southern Sonora and offer some observations regarding socio-political organization and regional interaction between approximately 700 and 1450 CE. Additionally, new insights into the use of funerary mounds are also presented.

[147] *Second Organizer*

Carpenter, John [120] *see Sanchez Miranda, Guadalupe*

Carpenter, Kim [256] *see Carpenter, Tim R.*

Carpenter, Tim (ArchaeoMetrics, Inc.) and Kim Carpenter (Far Western Anthropological Research Group, Inc.)

[256] *Prehistoric Faunal Resource Use along the Lower Sacramento River, California*

Faunal data from sites located along the lower Sacramento River provide fine-grained dietary information for about the last 5000 years. These data are examined in light of documented climatic changes and regional settlement shifts. We then compare the results of our analysis to previous studies which indicate a shift from high ranked artiodactyls to lower ranked small mammals and fish.

Carpenter, Tim [256] *see Darwent, John*

Carr, Christopher (University of Cincinnati), Eric Weaver (University of Cincinnati), Nicholas Dunning (University of Cincinnati) and Vernon Scarborough (University of Cincinnati)

[119] *Bringing the Penn Tikal Project Maps into the Era of Electronic GIS*

From 1957 to 1960, the University of Pennsylvania measured and mapped the central sixteen square kilometers of the archaeological site of Tikal, Guatemala. This paper reports on our effort to convert these paper maps, and the wealth of information they contain, into electronic format for use in Geographic Information Systems. Our experience may provide methodological lessons for other projects. We also checked the accuracy of the original maps with a Global Positioning System. One end product of this work, GIS layers of topography, will enable watershed modeling, which will assist in understanding how the ancient Maya managed critical water resources.

Carr, Christopher (Arizona State University) and Robert McCord (Arizona Museum of Natural History)

[53] *Fantastic Creatures of Ohio Hopewell Cosmoses*
Hopewellian peoples in southwestern, south-central, and northeastern Ohio sculpted, engraved, and cut out depictions of fantastic creatures that combine the bodily elements of ordinary animals. Zoological identification of the animals represented, contextual analysis of the placement of the creature depictions within mounds, mound stratigraphy, and historic Woodland Native American narratives shed light on the nature of the cosmoses envisioned by Ohio Hopewellian peoples and some of the creatures that inhabited those universes. The roles of certain creatures in journeys of the deceased to land(s) of the dead are also addressed.

Carr, Christopher [119] *see Dunning, Nicholas P. [119]*

see Scarborough, Vernon [119] see Weaver, Eric M.

Carr, Philip (University of South Alabama) and Andrew Bradbury (Cultural Resource Analysts Inc.)
[22] *An Organization of Technology Approach: Paradigm-Like or Jumble of Jargon?*

For 30+ years, some lithic analysts have taken inspiration from Lewis Binford's work involving technological organization (TO). Twenty years ago, Margaret Nelson developed a too-little cited diagram of research levels in a TO approach. Here, we assess the lithic literature to determine if a TO approach is paradigm-like and to identify exemplars of the approach. We work back and forth between these exemplars and Nelson's diagram to aid in the exploration and modification of a model of TO. This model serves to demonstrate the complexity of lithic assemblage formation, potential range of inferences possible, and bring focus to lithic analysis.

Carr, Philip [257] see Price, Sarah E

Carrasco, Michael (Florida State University) and Joshua Englehardt (Florida State University)

[157] *The Cascajal Block and the Olmec Origins of Mesoamerican Writing*

The discovery of the Cascajal Block has pushed the evidence for Mesoamerican writing back to the Middle Formative period. Despite intense scrutiny since its discovery, its sign system resists interpretation. This paper suggests that the Cascajal Block and other Olmec writing is best understood within the context of contemporary iconographic systems, since many signs found on the Block cite objects depicted in iconography. Importantly, on the Block these objects are divorced from the larger compositional framework in which they are usually contextualized. This abstraction from "normal" contexts offers important insights into the origin and development of writing in Mesoamerica.

Carrión, Yolanda [25] see Badal, Ernestina

Carroll, Ed (California Office of Historic Preservation)
[112] *Discussant*

Carroll, Rebecca (University of Houston) and Rebecca Storey (University of Houston)

[237] *The Posthumous Treatment of Multiple Inhumations: Evidence of Companion Sacrifice?*

During the Formative period, the Maya village of K'axob, Belize, had primary inhumations and secondary ones. During the Late Formative/Protoclassic (400 BC to 250 AD), a mortuary pattern of a primary inhumation accompanied by one or several secondary ones is present. In the past, researchers have thought of these secondary individuals as sacrifices, in this case, of companions. The skeletons have no evidence of violence, but are poorly preserved. The context and taphonomy of these accompanying individuals reveal a pattern more consistent with prolonged ritual gatherings of deceased kin, rather than sacrifice. Age, sex, and skeletal inventory are the keys.

Carter, Alison (University of Wisconsin-Madison)
[100] *Proveniencing Stone Beads: New Insights from LA-ICP-MS analysis of stone beads and geological sources*

from South and Southeast Asia

Stone beads, especially those made from agate and carnelian, are amongst the earliest indicators of contact with South Asia found at Iron Age period (500 BC- AD 500) sites in mainland Southeast Asia. However, the exact provenience of these beads is still under debate. Stone bead artifacts from Cambodia and Thailand and geological sources from South and Southeast Asia were examined using LA-ICP-MS in order to determine from where the beads came. Preliminary conclusions regarding the origin of the beads, trade and interaction networks between the two regions, and the benefits and limitations of this analytical technique will be discussed.

[100] *First Chair*

Carter, Brian [155] see Bement, Leland

Carter, Tristan (McMaster University)

[97] *From characterisation to Neolithisation: Using obsidian sourcing to reconstruct the dynamics of socio-economic change in Anatolia during the 10th-7th millennia BC*

Forty years of characterisation studies gave us a detailed image as to which of Anatolia's many obsidian sources were used and where their products circulated. Such rich data now warrants more critical interrogation, a re-engagement with major social science questions. This paper briefly reviews the region's sources and then discusses how an integrated chaîne opératoire mode of obsidian characterisation enables us to map population interaction ('communities of practice'). This data arguably provides us with the social networks through which new ideas and practices were transmitted, focusing here on the process of Neolithisation from the Near East to the Aegean.

[97] *Discussant* [97] see Anovitz, Lawrence M. [63] see Brown, Kelly [63] see Grant, Sarah [63] see Freund, Kyle P.

Casana, Jesse (University of Arkansas)

[10] *Settlement Systems of the northern Fertile Crescent: Results from the Corona Imagery Atlas Project*

This paper presents initial results of a NASA-funded project to analyze ancient settlement systems in the northern Fertile Crescent utilizing a new database of orthorectified Cold War-era satellite imagery known as Corona. Because most archaeological sites, particularly mounded tells, appear with great clarity on the imagery, it is now possible to map definitively the density and distribution of sites, beyond the limits of archaeological surveys and across national borders. Site distributions are then compared to the region's highly variable climate regime, as revealed through a variety of space-borne sensors, to show their correspondence with zones of sustainable agriculture.

Cascella, Melissa [3] see Schneyder, Stacy L.

Caseldine, Christopher (Arizona State University)

[36] *Social Irrigation: An Analysis of Irrigation Usage and Management Characteristics.*

My research is concerned with the human response to socio-environmental variation contained within irrigation practices. This research culminates with the development of a general model, which demonstrates characteristics that dictate controlled hydrological resource usage and

management. I survey a number of modern irrigation communities throughout the world to identify social variables, which commonly appear and contribute to the success or failure of an irrigation system. Although the scope of this research is multi-environmental and worldwide, superimposition of these historically obtained characteristics over the Hohokam sequence holds promising areas of future research.

Caspari, Rachel (Central Michigan University)

[17] *Demography and the Middle/Upper Paleolithic Transition*

Ecological and demographic influences on behavior have been dominant themes throughout John Speth's career, and his influence can be seen in the research presented here. This paper focuses on the Middle/Upper Paleolithic transition, one of the many topics of longstanding interest to John. Here I examine the implications of changing patterns of adult mortality in the Paleolithic. In contrast with earlier groups, humans of the Upper Paleolithic demonstrate significantly lower levels of young adult mortality. Results of fertility estimates are reviewed. These results help explain the success of modern human populations.

Cassedy, Daniel (URS Corporation)

[105] *Three Hundred Years at the Great Carrying Place - Excavations in the Upper Hudson River Valley*

Fort Edward is located on the Hudson River in upstate New York at a key portage point along the Hudson/Champlain corridor. Research conducted here as part of General Electric's PCB remediation project has documented a range of archaeological resources associated with the military and transportation themes of this strategic corridor. These include portions of the 18th century French and Indian War fort site, submerged wrecks from early wooden canal boats, the remains of one of the largest private estates in upstate New York in the early nineteenth century, and a shipyard that built concrete canal barges during World War I.

Cassidy, Jim (Maritime Museum of San Diego)

[123] *A Technological Exploration of Prehistoric Native American Seafaring*

Native American occupation of the Southern California Channel Islands during the Pliocene/Holocene transition is now widely accepted. However, systematic technological approaches to identify watercraft construction in the prehistoric record have yet to be formally established. The application of a number of exploratory methods targeting composite boat building in the early Holocene occupation layer at Eel Point (CA-SCLI-43), on San Clemente Island, has proven productive. The comparative application of these methods to archaeological research and extant collections among the Channel Islands, and adjacent mainland, would reveal a more sophisticated understanding of prehistoric seafaring than presently exists.

Casson, Aksel (McGill University), James Feathers (University of Washington), Albert LIN (University of California San Diego) and Fred Hiebert (National Geographic)

[5] *Luminescence Dating of Ceramic Roof Tiles from Central Asia*

In this poster we present chronological information derived from luminescence dating of ceramic roof tiles from two archaeological sites in Central Asia. Luminescence was used to determine whether or not these sites, thought to be burials from within the last millennium, were multiple use sites.

Casson, Sarah (Grinnell College)

[6] *Sinagua Point Lithics: a Comparison of Four Sites in the Flagstaff Region*

Projectile points from four Sinagua sites near Flagstaff, Arizona were analyzed to better understand variability in chronology, point attributes and functional types during intermittent Sinagua occupation between A.D. 1064–1300. The Sinagua were making small arrow points from flakes of mostly obsidian and collecting large Archaic atlatl dart points. Abundant points showing a high degree of variability without much chronological change characterize Sinagua sites. We looked for overall correlations among the small point collection in notching, material, damage and other categories. Some materials and types correlated in ways that probably indicate "cultural" affiliations.

Castaneda, Quetzil (OSEA Open School of Ethnography & Anthropology) [197] *Discussant*

Castillo, Patricia [9] *see Kovacevich, Brigitte*

Castillo, Victor (Universidad de San Carlos de Guatemala)

[225] *The Preclassic Architecture at Ceibal: A view from the excavations at the A-24 Platform*

Recent investigations conducted by the Ceibal-Petexbatun Archaeological Project have revealed important data about the foundation and early development of Ceibal during the Preclassic period. In particular, extensive excavations carried out at the A-24 platform have discovered numerous Preclassic structures and many associated features of critical importance for the study of the early development of the site. These data provide significant implications on the origins and development of complex societies in the Maya lowlands.

Casto, Kara (University of South Florida), Scott M. Fitzpatrick (North Carolina State University) and Michiel Kappers (In-Terris Site Technics)

[163] *GIS-based Analyses of Archaeological Assemblages from Two Prehistoric Caribbean Sites*

In recent years the value of GIS and associated spatial and statistical analyses have helped archaeologists better understand past cultural behaviors. Point pattern and trend surface analyses are here used to locate densities of various categories of archaeological material and to extrapolate how these materials may have been discarded within and between plans at two prehistoric sites in the Lesser Antilles. By subjecting data to such analyses, spatial and temporal distribution patterns can be examined and used to decipher site formation processes in conjunction with previous analyses of recovered cultural remains.

Castro, Alicia (alicia castro), Manuel Cueto (Universidad Nacional De La Plata) and Frank Ariel (Universidad Nacional De La Plata)

[59] *New approaches in Functional analysis for the*

discussion of Lithic technological organization: cases from Patagonia Argentina.

We understand the functional analysis of lithic material, not as a particularized analytic approximation of knowing how and in which way a tool was used, but as a methodology inserted in a bigger context. To know how a tool was used allows us to discuss the main factor that determines the different ways of production, typological structures, assemblage's variability and issues related to style. It will be proposed to include Functional analysis in a wide approach chained to a complex process of knowledge of technological organization, where Ethnoarchaeology and Experimental Archaeology must be involved. Cases from Patagonia will be presented.

Catella, Luciana [101] *see Barrientos, Gustavo*

Cau Ontiveros, Miguel Ángel [92] *see Pecci, Alessandra*

Cavelier, Inés [25] *see Archila Montanez, Sonia*

Cazares, Irma [95] *see Garcia, Dante*

Ceballos Gallareta, Teresa (INAH), Thelma Sierra (Centro INAH Yucatán) and Agustín Peña (Centro INAH Yucatán)

[14] *Nuevas Aportaciones sobre Sitios Preclásicos del Cono Sur, Yucatán*

Excavaciones realizadas en sub-estructuras domésticas en diversos sitios del cono sur en el norte de Yucatán, tales como: San Diego Buenavista, Nohbec-El Escondido y Tigre Grande, revelan que en el Preclásico medio ya existía una comunidad que compartió rasgos comunes tanto en la forma de sus estructuras y la decoración de sus cerámicas. Asimismo, parece ser que el repertorio cerámico de dichos sitios forma parte de un horizonte cerámico, distinto al horizonte Nabanché temprano, aunque contemporáneo al mismo. Por lo que en este estudio propondremos preliminarmente una nueva comarca cerámica para esta parte de la península de Yucatán.

Cecil, Leslie (Stephen F. Austin State University)

[190] *Maya Blue in Central Peten: Further Evidence of the Exchange of Ideas and not Things*

Maya Blue traditionally has been thought to have been manufactured only in northern Yucatán and traded throughout the Maya region. Chemical analysis of a blue pigment excavated from a Postclassic temple at Ixlú, Petén, Guatemala demonstrates that Maya Blue was made in at least two regions. These new data show that the knowledge of Maya Blue manufacture was transferred to central Petén. In support of the transfer of knowledge hypothesis, chemical and petrographic data from other artifact categories that are commonly thought to have been traded, especially Postclassic incensarios, further indicate that ideas were being exchanged instead of actual artifacts.

Centra, Alexandria (San Juan College) and Linda Wheelbarger (San Juan College)

[219] *The Point Site Great Kiva: Description and Comparison of Architectural Characteristics*

The Point Site is a great house situated near the center of the Point Community, a group of puebloan sites built

along the San Juan River near Farmington, NM. San Juan College field school excavations from 2008-2010 have concentrated on the great kiva. Testing has revealed the great kiva to have originated during the Chacoan time period, possibly as early as A.D. 1000-1050, with evidence of later post A.D. 1200 remodeling. Architectural characteristics are described and compared with other great kivas of the same time period in the Middle San Juan and Chaco regions.

Cerezo Roman, Jessica [147] *see Cruz Guzmán, Carlos*

Cerezo Roman, Jessica (University of Arizona) and Barbara Mills (University of Arizona)

[226] *Pathways to Personhood: Cremation as a Social Practice among the Tucson Basin Hohokam*

Mortuary practices among the Hohokam of the Tucson Basin varied depending on the individual and/or mourners intersecting identities (i.e., their personhood). This paper compares Hohokam variation in treatment of cremated bodies (including fragmentation and spatial context) to examine ways in which personhood was differentially expressed in the final disposition of Hohokam bodies. The variation is compared to ethnographic and ethnohistoric records on Southwestern indigenous groups where similar social practices were documented. While contexts of final disposition varied, cremations and some objects of material culture appear to pass through similar pathways that suggest parallel perceptions of and intra-community differences in personhood.

Cervantes, Gabriela (Catholic University of Peru), Izumi Shimada (Southern Illinois University) and Haagen Klaus (Utah Valley University)

[260] *Multiethnicity in Sicán World: Figurines and other lines of evidence*

Societies with extensive territorial domains and intensive inter-regional interaction often have a multiethnic composition and complex interethnic relationships. The late prehispanic Middle Sicán (900-1100 CE) society of the Peruvian north coast is no exception. We discuss information from a cache of figurines found together in the cemetery associated with the Huaca Loro temple mound displaying diverse hairdos and dress, as well as from other lines of evidence (e.g., funerary treatments, sacrificial and technological styles, ancient DNA and biodistance) that together suggest that this society was characterized by at least two sympatric ethnic groups that had different social status.

Cervený, Niccole (Mesa Community College), Casey Allen (University of Colorado - Denver) and Ronald Dorn (Arizona State University)

[134] *The Rock Art Stability Index: Contributing to Resource Preservation while Engaging Introductory Level College Students in Science Through Culture*

Introducing cultural heritage preservation helps science students actively engage in learning. An NSF-CCLI project uses Native American rock art in an interdisciplinary study of Archaeology, Geosciences, and Biology through the Rock Art Stability Index (RASI). RASI is a triage assessment for rock art panels in danger of natural or human-induced decay. Community college students participate in research at Petrified Forest NP,

providing park management with data for resource assessment and allocation. Analysis of student assessment data since Fall 2008 reveals understanding of complex scientific concepts increase when students interact within a scientific field-based setting centering on culturally relevant issues.

Chacaltana, Sofia [227] *see deFrance, Susan D.*

Chada, Bill [83] *see Lincoln, Thomas R.*

Chadwick, Oliver A. [261] *see Browne Ribeiro, Anna T. [261]* *see Vitousek, Peter*

Chadwick, William (John Milner Associates, Inc.) and Peter Leach (John Milner Associates, Inc.)

[265] *Coring Methods to Locate Buried Archeological Sites and Assess Buried Landscapes during Intertidal Archeological Surveys*

Through field research at numerous tidal-freshwater and salt marshes in the Middle Atlantic and New England regions, methods have been developed for minimizing field time and maximizing scientific data collection. Methodological considerations included sampling instruments, spacing, and recordation of detailed sedimentologic and stratigraphic information. Field research on core spacing has shown that an 8m grid is a compromise between data collection and speed of coring. Core stratigraphic recordation emphasizes the changes in facies and is focused on identifying buried upland landscapes. This type of sampling strategy facilitates high-resolution paleogeographic reconstruction of transgressed upland landscapes allowing an assessment of site integrity.

Chaisuwan, Boonyarit [100] *see Lankton, James W*

Chamberlin, Matthew (James Madison University) and Julie Solometo (James Madison University)

[136] *Religious life in troubled times: ritual and conflict in the early plaza pueblos, Salinas, New Mexico*

Recent excavations in the Salinas Pueblo Province highlight the negotiation of religious and defensive concerns in early plaza-oriented pueblo villages (1200-1400 A.D.). Patterns in architectural design, growth, and burning suggest that conflict shaped decisions about site placement and layout, admission of newcomers, and, in some cases, village abandonment. In this environment, neighboring villages differed sharply in their ability to develop and maintain religious facilities. Some built, remodeled, and added new ritual spaces and features throughout their occupations; others did not. The Salinas evidence increases our understanding of the variable experience of conflict and religiosity in villages constructed around enclosed plazas.

Chamberlin, Matthew [53] *see Solometo, Julie P.*

Chan, Keith (University of Missouri-Columbia)

[72] *Life in a Prehistoric State at Armatambo, Rímac Valley, Perú*

The Late Intermediate Period (AD 1000-1476) of the Andean Region bridged the time between two horizons of empires. Results are presented from a study of a skeletal collection associated with Armatambo, a Late Intermediate Ychma city located in the central Andean

coast. Measures of non-specific stress and degenerative joint disease prevalence are compared between Armatambo and earlier sites in the region, showing changes in health trends over time.

Chang, Claudia (Sweet Briar College)

[54] *Revisiting Iron Age Landscapes in the Semirechye Region of southeastern Kazakhstan*

Iron Age sites of Semirechye are identified as burial mounds or habitations. The interrelationship between the mortuary complex and the 'lived-in' places of villages and hamlets remains poorly understood and thus disarticulated. Clusters of circular living houses around a central structure may reveal the nature of agro-pastoral village organization. These settlement data coupled with the location of burial mounds provide the basis for interpreting a unified symbolic and socio-political system on the periphery of the Eurasian steppe. Whether the Talgar Valley represents a local center or not, and its spheres of interaction within a regional context will be discussed.

Chang, Vanessa (Antiquus Archaeological Consultants Ltd.)

[96] *Technology of South Yale: an analysis of lithic use to project sedentary lifestyle*

Located alongside the Fraser River, the South Yale site has been subjected to numerous studies. CRM studies have dated as early as the 1960s. It is estimated to be 4,128 m in length and 1,696 m wide and spanning 5 terraces. Through the analysis of lithic deposits may reaffirm the cultural type of South Yale. Variant raw materials provide information upon the resources these people had in the past. Striations of these materials can uncover the vegetation and dietary habits of the people. The analysis of lithic use depict a longstanding – sedentary culture of the South Yale.

Chapman, Richard (University of New Mexico) [37] *Discussant*

Charles, Douglas (Wesleyan University)

[43] *Two-timing Archaeologists*

Time is central to the practice of archaeology: When did an event occur? Over what period was a style produced? Is this form earlier or later than another? Archaeologists are also interested change, a function of time: directions, rates, rhythms, patterns, mechanisms. Archaeologists have consciously or unconsciously incorporated A-series (tensed) or B-series (fixed) time into their approaches to the past (even contending the existence of a past). Our constructions and investigations of archaeological questions or problems are structured and guided by our prior commitment to A- or B-series time. A discussion of Hopewell will serve as an example.

Charles, Mona (Fort Lewis College)

[188] *Ornaments and Bone Tools from the Falls Creek Burial Crevice*

Reanalysis of the ornaments and bone tools from the Falls Creek Burial Crevice have contributed to the overall project mission to reunite associated funerary objects with individual human remains. The collection contained a few bone tools but numerous objects of ornamentation such as siltstone and lignite beads, Olivella dama and Olivella biplicata shell beads, juniper berry beads, deer

mandible bangles, a few bone beads and a tubular siltstone pipe. These artifacts impart information about the people and the culture of the Durango Basketmakers specifically about social status, gender and possible relationships with other Basketmaker II populations.

Charles, Mona [188] see *Graham, Carole L.*

Charlin, Judith (CONICET), Karen Borrazzo (CONICET-IMHICIHU) and Marcelo Cardillo (CONICET-IMHICIHU)

[22] *Artifact and environmental related variations in Fuego-Patagonia (Argentina)*

Diversity in environmental conditions has a variable effect on technological strategies employed by hunter-gatherers worldwide. Here we assess this pattern within Fuego-Patagonia, which comprises several ecological areas including forest, steppe and maritime coast. The study explores the relationship between environmental variables and lithic assemblages structure, richness and composition by applying multivariate statistical analysis (constrained ordination). Artifactual samples were recovered from Late Holocene stratigraphic and surface contexts located between 50° and 53° S. This research contributes to regional and worldwide discussions about the role of environmental factors and the spatial scale of technological diversity.

Chase, Arlen (University of Central Florida) and Diane Chase (University of Central Florida)

[90] *An Ancient Maya Urban Landscape: Integrated Settlement and Terracing in the Vaca Plateau*

The ancient Maya city of Caracol, Belize provides an excellent New World example of tropical low-density urbanism. The center housed 100,000 people at A.D. 650 and was sustained through the intensive use of agricultural terraces. Combining excavation data and on-ground survey information with a 200 square kilometer LIDAR Digital Terrain Model makes it possible to model how Caracol developed into a huge metropolis by A.D. 650 and to correlate this development with heightened infrastructural organization and intra-site integration. These data suggest that the ancient Caracol Maya maintained a long-term, highly complex relationship with their anthropogenic landscape.

Chase, Arlen [116] see *Chase, Diane Zaino [6]* see *Martindale Johnson, Lucas R.*

Chase, Brad (Albion College)

[189] *The production of Harappan Gujarat: materiality and identity in the borderlands of the Indus Civilization*
During the second half of the third millennium BC, the residents of Gujarat came to make and use articles of material culture characteristic of the major cities of the Indus Civilization such as Harappa and Mohenjodaro. Traditionally, sites with this so-called Harappan material culture have been considered together as evidence for a migration into the region. Recent research, however, demonstrates considerable material diversity within this category of settlement. Here, I present the results of this ongoing work and discuss how the production of Harappan things in Gujarat was integral to the production of Harappan people in this borderland region.

Chase, Diane (University of Central Florida)

and Arlen Chase (University of Central Florida)

[116] *An Ancient Maya Economic System:*

Archaeological Data and Caracol, Belize

Because neither Maya art nor hieroglyphic texts contain explicit economic information, many archaeologists view Maya economies as de-emphasized in the Classic Period (A.D. 550-900). Scholarly reconstructions vacillate between complex and simple systems. This paper positions 26 years of archaeological data from Caracol, Belize in terms of current debates about ancient Mesoamerican economy. Research at Caracol has identified venues for marketplaces and shown that ancient residential households were actively involved in specialized production. Data suggest that Caracol's elite were concerned with controlling distribution in an economic system far more complex than that implied via simple models of feasting.

Chase, Diane [6] see *Martindale Johnson, Lucas R.* **[90]** see *Chase, Arlen F.*

Chase, Zachary (The University of Chicago)

[24] *Material and Spatial Performances of the Past in Huarochirí, Peru (ca. AD 1400-1700)*

To understand the social and political instrumentality of active, animated materials and living landscapes—long-emphasized in studies of the indigenous Americas—it is crucial to investigate how the cogency of such phenomena was produced and perpetuated through particular historical processes, cultural practices, and agentive exercises. Ethnohistorical and recent archaeological data from Huarochirí, Peru, show that, before and through Inka and Spanish colonizations of the area, numinous objects/places, “the past,” and political legitimacy were inseparable, making their “adoption” and/or “conversion” paramount foci in these local-imperial encounters. A performance/performativity approach to these processes facilitates comprehension of their varying suasive efficacy through time.

Chataigner, Christine [114] see *Varoutsikos, Bastien*

Chatters, James (AMEC Earth & Environmental) and Jason Cooper (AMEC Earth & Environmental)

[29] *Understanding Olcott, an Early Holocene Lithic Industry in Western Washington.*

Olcott, an early to mid-Holocene manifestation of the Old Cordilleran Culture, is one of the enduring mysteries of Northwest Archaeology. Despite being widely represented and known for 50 years, this lithic assemblage of Cascade projectile points, large bifaces, and a variety of scraping tools remains undated. The technology remains un-described; nothing is known of subsistence; and the overall adaptive strategy is understood only with reference to similar assemblages from eastern Washington. Detailed analysis of assemblages of lithics, FCR, and fauna excavated in 2009 from sites 45SN28 and 45SN303 has taken strides toward understanding this ancestor of Northwest cultures.

[29] *First Chair*

Chatters, James [22] see *Prentiss, Anna Marie*

Chauhan, Parth (Stone Age Institute)

[218] *From Ramapithecus to Robert Bruce Foote:*

Paleolithic research histories in the center of the Old World

The impact of early discoveries in Africa and Europe heavily influenced the way some of the Indian evidence was initially interpreted and also the way associated stone tool classification frameworks were subsequently presented. Specific examples of changing concepts and interpretations over the last century are presented at thematic, regional and site-specific research histories. Recent discoveries are briefly mentioned to illustrate the growing significance of the Indian Subcontinent for understanding Paleolithic transitions in Asia. The intellectual direction in which South Asian paleoanthropology is heading including new questions and research issues that have emerged in recent years is also presented.

[218] *Second Chair* [218] *Second Organizer*

Chavez, Sergio [233] *see Juengst, Sara*

Cheetham, David (ASU)

[157] *Cunil Horizon Pottery at Pulltrowser Swamp, Belize*
Ceramics from deeply buried deposits at Pulltrowser Swamp, Belize, belong to the Cunil Horizon, dated elsewhere to ca. 950-800 bc (uncalibrated). I discuss the early Pulltrowser pottery and the implications of its discovery in this habitable environmental zone. Cunil material dates cultural activity at Pulltrowser Swamp to an era when sedentary village life began in the central Maya Lowlands and subsistence practices emphasizing maize agriculture were heightened. The early Maya may have been using swampy lands to increase agricultural productivity. I discuss and compare the contexts of Cunil Horizon material at other sites with that of Pulltrowser Swamp.

Chen, Pochan (National Taiwan University)

[23] *Exploring the spatial relationships of the Yangfutou cemetery, Yunnan, China*

Dian is an ancient state in Dian Lake area of Yunnan from the Warring States period (475-221 B.C.) to Western Han Dynasty (206 B.C. – 8 A.D.). Since 1950's, archaeologists discover many Dian cemeteries, including Shizhaishan, Lijiashan, Tianzimiao, Batatai and Yangfutou. Each cemetery has several hundred burials with abundant burial materials. Many scholars adopt multivariate statistical techniques to analyze these complex cemeteries; however, very few of them emphasize spatial variants. In this paper, I will use GIS techniques to analyze the spatial relationships among the burials in the Yangfutou cemetery and reconstruct their social structures.

Chenery, Simon [142] *see Rockman, Marcy*

Chenoweth, John (University of California, Berkeley)

[195] *Negotiating Race and Religion on an Eighteenth Century Caribbean Plantation*

This paper considers a context where race and religion, two major structuring factors in social life, were both at the forefront of social negotiation. The focus is an eighteenth-century plantation in the British Virgin Islands, operated ca. 1725-1770 by an active member of the Religious Society of Friends ("Quakers"). Despite commitments to equality and non-violence, Lettsom, like most BVI Quakers, was a slave owner. This study takes

the contradictions between religious ideology and slavery as a starting point, aiming to provide a window into how the identities of religion and race came into conflict and were negotiated.

Cheong, Kong (Trent University), Terry Powis (Kennesaw State University) and Paul Healy (Trent University)

[75] *Music and the Maya: Late Classic Ocarinas and Flutes from Pacbitun, Belize.*

Musical instruments occur among Pre-Columbian cultures across Mesoamerica. In the Maya subarea, specifically in the Belize River Valley, they are found at Baking Pot, Blackman Eddy, Cahal Pech, and Pacbitun. At the latter, in the 1980s, musical instruments were found in three elite graves in the Epicenter and dating from the Late Classic period. During the 2010 season a Late Classic burial with more than a dozen ceramic, wind instruments was discovered. These are described, and compared with those from elsewhere in the Valley, and across the Maya Lowlands. Possible roles of music in Classic Maya culture are examined.

Cherian, P. J. [100] *see Abraham, Shinu A.*

Cherry, John F. [163] *see Pecoraro, Luke J.*

Chesley, John [135] *see Thibodeau, Alyson M.*

Chesson, Meredith (University of Notre Dame) and Morag Kersel (DePaul University)

[236] *Following the Pots: Groundtruthing a Looted Cemetery, Assessing Loss, and Utilizing What Remains*

Follow the Pots employs archaeological and ethnographic research into first and second lives of artifacts in Early Bronze Age (c.3600 – 2000 bce) cemeteries on the southeastern Dead Sea Plain, Jordan. In 2011 we mapped the extent and groundtruthed sample areas of the extensively-looted site of Fifa. We conducted a systematic survey of the cemetery, groundtruthing looters' pits to assess "success rates" and recording materials in spoil heaps to aid in comparing data from looted tombs to 60 previously excavated tombs. Our research demonstrates the necessity for groundtruthing and multidisciplinary approaches in analyzing heritage destruction and materials from looted sites.

Chiarulli, Beverly (Indiana University of Pennsylvania) and Donna Smith (Indiana U of PA)

[138] *Geophysical Investigations of Two Locales Near Hermosa, New Mexico*

During the 2010 field season of the GAP, two locales near Hermosa, New Mexico were subject to geophysical surveys. Based on preliminary surface surveys, one was thought to have been the location of a community school, while the other was thought to have been a blacksmith shop. For comparison, sample grids were established at the locales and then each surveyed by ground penetrating radar, conductivity, and magnetic susceptibility surveys, as well as systematic surface and metal detector surveys. The results allow us to evaluate the effectiveness of each instrument in this environmental setting.

[268] *Discussant*

Chiarulli, Beverly [209] *see Neusius, Sarah W.*

Chicoine, David (Louisiana State University)
and Hugo Ikehara (University of Pittsburgh)

[125] *Cercaduras, Cuidadelas, and Early Urbanism on the North Coast of Peru: A Reconsideration of the Salinar Phenomenon*

Carol Mackey's work contributed significantly to our understanding of urbanism in ancient Peru. In Nepeña, a coastal valley in Ancash, our recent work has brought insights into early forms of enclosure compounds and lifestyles during the first millennium BC. Here, we review enclosure designs ascribed to the Salinar phenomenon. By considering and comparing variations at the regional level, we suggest that Salinar is best understood in terms of situated historical processes that included increased intergroup conflicts, and differential political patterns of integration and fragmentation, both linked to the demise of the Chavín sphere and the emergence of dense settlements.

Chicoine, David [174] *see Capriata Estrada, Camila*

Chilcote, Celise [183] *see McCafferty, Sharisse D.*

Childs, S. (Department of the Interior) [118]
Discussant

Childs-Johnson, Elizabeth (Old Dominion University)
[258] *Erligang bronze vessels and early Shang hegemony*

Two major events marked the beginning of the Shang dynasty: 1) the expansion of military and political power to the south Yangtze river valleys, beyond the northern capital in the Yellow river valley, and 2) the creation of large-scale tetrapod bronze ding as the most important symbol of divine kingship. This paper explores dynastic expansion to the south due to the exploitation of valuable ores and the pyramidal hierarchy that recognized divinity of the king as symbolized by the large-scale sacrificial tetrapod ding bronze vessel.

Chilton, Elizabeth (UMass Amherst)

[254] *Museum as artifact: a case study from (colonial) New England*

Museums are often venues where historians, archaeologists, and curators seek to both study "the past" and educate "the public." But in what way are museums themselves an artifact of contemporary (and past) heritage practice? My case study is Historic Deerfield, Inc., an open-air museum of the history, art, and architecture of colonial New England. My goal is to examine how changing approaches to research and interpretation, as viewed through the museum's landscape-level public interpretation (e.g., the location and re-construction of houses, narrative of interpreters and sign text, public presentations, and publications), reflect heritage discourse.

[254] *Second Chair*

Chiou, Katherine (University of California, Berkeley)

[250] *Discussant* **[45]** *Second Organizer* **[45]** *Second Chair*

Chiou-Peng, TzeHuey (Univ. Illinois UC)

[23] *Ancient Yunnan Metals in Current Studies of Bronze/Iron Age Asia*

Archaeologically excavated metal materials from Yunnan have assisted in studying cultural/technological interactions between Bronze and Iron Age sites in southwest China and surrounding regions. However, occasional misinterpretations of aspects in the material culture in Yunnan have led to misleading conclusions as well as controversial issues when viewed in the chronological, cultural, and technological frameworks of Asian prehistory. In the light of recent metallurgical studies of Yunnan artifacts and new archaeological finds from 2nd millennium sites in western Yunnan, this work investigates the research strategies used to generate such debatable issues.

Chisholm, Brian (University of British Columbia), R. Kyle Bocinsky (Washington State University)

and Brian M. Kemp (Washington State University)
[46] *Basketmaker III Turkey Husbandry: Multiple Lines of Evidence*

A small site on Cedar Mesa from the late BM III Mossbacks Phase (ca. AD 650-725) yielded partial skeletons of several turkeys of varying ages, clusters of gizzard stones, and a few eggshell fragments. Stable carbon and nitrogen isotope values of bones were used to characterize diet. MtDNA analysis tested whether the birds displayed the distinctive SW domestic turkey haplotype. Experimental analysis of DNA microsatellites was used to investigate possible parent-offspring or sibling relationships among the birds. Eggshell fragments were examined with a SEM to see if the eggs had hatched at the site.

Chiu, Scarlett (Academia Sinica, Taiwan)

[228] *Stylistic analysis using the online Lapita pottery database: A case study of a Lapita pottery assemblage excavated from Kamgot, Anir Islands, Papua New Guinea*

Attributes related to vessel forms, decoration motifs, potter-making techniques, as well as petrographic and chemical compositional data, have been employed by Pacific archaeologists in various attempts to postulate the rate and direction of stylistic and technical changes observed in Lapita ceramic assemblages. A comprehensive online database has been constructed to provide an analytical tool for recording, sequencing, and comparing various formal, decorative, and compositional attributes of Lapita pottery assemblages. Using the pottery assemblage of Kamgot, Anir Islands, Papua New Guinea, this paper illustrates the usefulness of such a database, and how may it contribute to the study of Lapita prehistory.

Chiykowski, Tanya (SUNY Binghamton)

[96] *Domestic production in lithic analysis from Northwest Mexico*

Access to raw material, procurement strategies, control in distribution, sharing of technical knowledge and exchange of both raw and finished materials all relate to the dynamics of production of lithics at a local level. Lithic analysis from the Viejo Period in Chihuahua, Mexico illustrates these points by examining connections at a community, inter-site and regional level. Research in the region demonstrates a lack of specialized production of lithic tools, so variation in this non-discursive material culture reflects the domestic production of material culture in a transitional period between hunter-gathering

and adoption of agriculture.

Chovanec, Zuzana [19] *see Rafferty, Sean M.*

Christie, Heather [100] *see Abraham, Shinu A.*

Christie, Jessica (East Carolina University)

[103] *Exporting Inkness: An Argument For Replication in Architecture and Sculpture in the Ayacucho Region*
This paper discusses how certain aspects of Inka administration as well as ideology were materialized in architecture and sculpture at Vilcashuaman and the associated site Intihuatana in the Departamento Ayacucho. The center of Vilcashuaman clearly reflects the layout of Cusco and conceptual similarities extend to the poorly known Intihuatana site. The latter exhibits a palace compound structured around several sequential courtyards, carved rocks, and visual orientation toward Vilcashuaman. It is argued that not only the urban design of Cusco but also the materialization of ideological concepts as well as cultural landscapes were exported as markers of Inka identity.

Chuijka, Jason (Woods Canyon Archaeological Consultants)

[117] *The Legacy of Chaco in the Upper San Juan Region, A.D. 900-1200*

The region north of the San Juan River and east of the Animas River was sparsely settled immediately prior to the Pueblo II period and almost entirely abandoned after A.D. 1150. This paper will examine how involvement in the Chacoan regional system acted as a catalyst to the entrenchment of traditional social practices rather than spurring emulation or change. This contradictory consciousness appears to have tempered the influence of Chaco in the region and likely influenced later populations that also resisted social trends occurring to the south and west in the post-Chacoan world of the A.D. 1200s.

Chung, Steven [59] *see Stemp, William James*

Churnside, Robyne [259] *see Smalldon, Sue S.*

Cinquino, Michael [60] *see Hayward, Michele H.*

Ciolek-Torrello, Richard (Statistical Research, Inc.), Seetha Reddy (Statistical Research, Inc.), John Douglass (Statistical Research, Inc.) and Donn Grenda (Statistical Research, Inc.)

[151] *Contributions of Ballona Research to Gabrielino/Tongva Prehistory and Ethnohistory*
Over 20 years of archaeological, geoarchaeological, and ethnohistorical research by Statistical Research, Inc in the Ballona region of west Los Angeles has produced a rich and detailed record of over 8,000 years of human adaptation to a dynamic coastal wetland and a diverse cultural environment. This record provides a unique perspective on Gabrielino/Tongva culture from its ancestral origins in the Millingstone period, to its development as a distinctive coastal culture in the Intermediate period, and finally its emergence as a complex culture during the Protohistoric and Mission periods. We discuss these developments using the concepts of cultural continuity and ethnogenesis.

Ciolek-Torrello, Richard [151] *see Grenda, Donn [151]*
see Altschul, Jeffrey H. [151] *see Van Galder, Sarah J. [151]* *see Douglass, John G.*

Clark, Dylan (Harvard University), Mauricio Germon Roche (Universidad Autónoma de Yucatán) and Rodolfo Canto Carrillo (Universidad Autónoma de Yucatán)

[221] *The Port-Keepers and Fisherfolk of Isla Cerritos: New Perspectives on Island Occupation Before, During, and After Chichén Itzá*

Isla Cerritos has long been interpreted as the principal coastal port of Chichén Itzá. This paper will discuss recent excavations in two structures and a patio of a residential group that demonstrate that a small community of people lived and worked on the island prior to and during the apogee of Chichén Itzá and that significant changes took place with the rise of this inland center. Household archaeology provides additional insights into the nature of the relationship between Chichén Itzá and Isla Cerritos and enhances our understanding of the dynamics of social organization and daily life in Maya coastal port communities.

Clark, Geoffrey (Arizona State University)

[218] *Research Advances in the Levantine Paleolithic, 1990-2010*

With an archaeological record extending back 1.4 my, and paleolandscapes relatively accessible to investigation, the Levant is a prime example of an area where methodological advances since 1990 have had a dramatic impact on perceptions of pattern and what it might mean. In particular, advances in chronology have affected the duration and geographical extent of the major analytical units, and by extension, their implications for biological and cultural evolution. I summarize these changes and examine their consequences for human evolution. Although much recent controversy has centered on the Middle Paleolithic, the Lower and Upper Paleolithic have also been affected.

[108] *see Culley, Elisabeth V.*

Clark, Jamie (University of Utah)

[91] *Obsidian in Range Creek Canyon: A Sourcing and Hydration Analysis for Lithic Debitage and Tools.*

Several archaeological sites in Range Creek Canyon have yielded significant quantities of lithic debitage and stone tools. Material types observed include quartzite, chert, chalcedony and obsidian. In order to better understand prehistoric land-use patterns and trade routes, a sample of obsidian lithic debitage and tools were sent for obsidian hydration and sourcing analysis. A discussion of the results will include elements of the field transport and processing model, obsidian source locations, and new implications for Fremont flintknappers on the western Colorado Plateau.

[17] *see Stutz, Aaron J.*

Clark, Jeffery (Center for Desert Archaeology), Steven Shackley (University of California at Berkeley), Robert Jones (Center for Desert Archaeology/University of Arizona) and Stacy Ryan (Desert Archaeology, Inc.)

[52] *Through Volcanic Glass: Measuring the Impact of Ancestral Puebloan Immigration on the Hohokam World*

Dramatic changes in the procurement and exchange of obsidian occurred throughout the Hohokam World during the early 14th Century A.D. Some regions experienced substantial increases in exotic obsidian while other regions were suddenly cut off from sources that had been exploited for centuries. Using more than 3000 sourced obsidian samples from nearly 100 sites, we argue that small groups of ancestral Puebloan immigrants both facilitated and disrupted the circulation of this valuable raw material within the Hohokam World. This represents another line of evidence for the disproportionate power possessed by this minority group. [52] *Second Chair*

Clark, Jeffery [52] *see Hill, Brett [201]* *see Dungan, Katherine A. [52]* *see Lyons, Patrick D.*

Clark, Joelle (Northern Arizona University)
[139] *Footprints of the Ancestors: Hopi Intergenerational Learning*

Hopi footprints are the archaeological landscapes and the oral history that surrounds them. They connect people to place, to the environment, to the past, and to the future. The Footprints of the Ancestors project is an intergenerational partnership that facilitates Hopi cultural preservation. The primary goal is to bring together Hopi youth and our established team of Hopi elders, cultural specialists, and archaeologists in an experiential and collaborative endeavor. This poster depicts the project, its accomplishments, and impact on Hopi youth.

Clark, John (Brigham Young University)
[157] *Tracking the Origins of Agriculture in Middle America*

Scholars have pursued the origins of domesticated plants and agriculture the world over for at least two centuries, with no final resolution in sight. Provisional answers along the way have depended on primary definitions of phenomena, research agendas, excavation luck, academic politics, improved techniques for recovering plant residues, and analytical methods for extracting chemical signatures from bones and artifacts. I review a century of shifting evidence and narratives for the origins of agriculture in Middle America and the current contenders for a master narrative.

[88] *Discussant*

Clark, John E. [22] *see Woods, James*

Clark, Julia (University of Pittsburgh) and Jean-Luc Houle (University of Pittsburgh)
[54] *Exploring Communities in Central Mongolia: An Ethnoarchaeological Perspective*

Pastoralist communities in the central Mongolian Steppe may provide unique insight into the ways we conceive of community organization in semi-mobile, dispersed populations. Ethnographic interviews, census records and detailed maps depicting modern day land-use provide information about the social, economic, and ritual organization of communities in Central Mongolia today. This information can then supplement some of the ways in which we approach the archaeological investigation of communities in the area.

Clark, Terence (University College London)
[232] *Archaeology of communities within the Salish Sea:*

grappling with issues of scale and identity.

According to Redfield (1955), the community is the principal unit of biological and cultural reproduction. It is the scale at which culture is replicated and innovation adopted. As such, communities may be the most relevant emic classification of culture therefore, understanding the nature of past communities is critical to understanding past cultures. Building on the "archaeology of communities" (Canuto and Yaeger 2000) framework which has previously been employed to delineate community-level groups in more complex societies, this paper will attempt to identify and describe emically meaningful scales of interaction, communities, within the prehistoric hunter gatherer cultures of the Salish Sea.

Cleghorn, Naomi [108] *see Koetje, Todd A.*

Cleland, Jamie [50] *see Wahoff, Tanya L.*

Cleland, Robin (Arizona State University) and Ben A. Nelson (Arizona State University)

[36] *Resource Depletion and Food Supply at La Quemada: A Zooarchaeological Approach*

Faunal analysis is used to evaluate resource depletion in relation to the growth of La Quemada, northwest Mexico. Scholars have offered differing interpretations of the size and permanence of the site's population. This Epiclassic site provides a good case study to examine socio-ecological issues because of its large size, fragile environmental context, and position as the first major center in the region. If resource depletion were occurring we expect to see increasing reliance on lagomorphs compared to artiodactyls, increasing bone fragmentation for nutrient extraction, and increasing abundance of less desirable species. Initial results are presented.

Clewlow, C (Ancient Enterprises Inc) [230] *Discussant*

Clifford, Walter (University of South Carolina)

[148] *The Distribution of Paleoethnobotanical Remains from a Late Classic Maya Site in Northwestern Belize*
Most studies of ancient Maya subsistence are based on ethnohistorical accounts that model a reliance on maize, beans, and squash. Our investigations of botanical remains recovered from an array of shovel tests at Guijarral, a Late Classic (AD 600-900) Maya farmstead, have shown an expanded botanical repertoire beyond the aforementioned trinity. Some plant distributions suggest the importance of wild plants, and allow construction of hypotheses regarding the locations of activities within the site and begin to reconstruct the agroecology associated with Late Classic provisioning. Data presented here demonstrate the importance of considering the potential for local control of perennial foodstuffs.

Clinton, Jennifer (UC Santa Barbara), Robin Lyle (Crow Canyon Archaeological Center) and Steve Wolverson (University of North Texas)

[135] *Changes in Turkey Exploitation by Ancestral Pueblos: Remodeled Bone Breakage from the Mesa Verde Region and Beyond*

Turkey was a valued resource among Ancestral Pueblos in the American Southwest. Mature turkey from several earlier occupations in Colorado exhibit damage to skeletal elements, making survival in the wild

improbable. Given the degree of bone remodeling, these specimens received post-injury care, no matter breakage intentionality. In earlier sites, turkey exploitation occurred for various economic reasons and healed breakage frequency is comparatively high. As other resources became scarce during later periods, exploitation shifted to turkey as meat and healed breakage frequency decreased. This poster demonstrates how turkey were tended until resource depression changed the role of turkey in the diet.

Coats, Jennifer (California State University, Los Angeles)

[266] *Caves and Burial: A Critical Examination of Maya Ideology Surrounding Cave Interment*

During three years of survey, the Midnight Terror Cave Project recovered large quantities of human remains. This raised the question as to why the Maya utilized caves for interment. A frequently utilized model suggests that caves were viewed as being "the land of the dead" or the pathway to the "land of the dead," and, therefore, an appropriate place for interment. This model, however, has never been explicitly formulated or rigorously tested though it continues to be a factor in interpretation. The author analyzes the theoretical roots and inception of the cave-underworld model and cautions its use in cave interpretation.

[266] First Chair

Coats, Larry (University of Utah)

[91] *The Distribution and Variety of High Elevation Sites in Range Creek Canyon, Utah*

Most of the recorded sites in Range Creek Canyon, Utah are less than 50 meters in elevation above the alluvial floodplain. But intuitive surveys since 2006, focused on major ridge lines, have revealed numerous high elevation sites far above the canyon floor. These sites are between 1800 m and 2400 m in elevation, ranging between 120 m to 600 m above the nearest alluvial floodplain. These sites exhibit a variety of forms, from residential or camp sites, to storage features, or rock art panels. Diverse artifacts have been recorded at these sites, including ceramics, lithics, and ground stone items.

[91] see Brunelle, Andrea

Cobb, Allan and James Brady (California State University, Los Angeles)

[266] *The Implications of Ritual Pathways in Midnight Terror Cave Belize*

In the last two decades, archaeologists have begun to map ritual pathways in Maya caves but these features are still poorly understood. Midnight Terror Caves contains the longest and most elaborate ritual pathway yet reported. This paper describes the construction and shows that it forms a documentable circuit that permits archaeologists to reconstruct movement through the cave. Finally, we offer possible reasons for the construction of such a feature in the cave and make comparisons with other known examples.

Cobb, Charles (South Carolina Inst of Archaeology & Anthropology) and Dawnie Steadman (Binghamton University)

[198] *The Class Process, Symbolic Capital, and Mississippian Epidemiological Transitions*

The class process—the production and distribution of

surplus labor—can undergo profound changes during epidemiological transitions. Heightened morbidity in the Mississippian Southeast (USA) is traditionally attributed to a growing reliance on maize agriculture and demands on surplus labor. However, evidence from the Illinois and Cumberland Valleys demonstrates that an upsurge in regional conflict greatly impacted subsistence strategies and patterns of adverse health. We argue that these trends are linked in part to historical alterations in the organization of surplus labor and symbolic capital, where social reproduction via moundbuilding and other large-scale ceremonial enterprises diminished in importance relative to rituals surrounding warfare and other activities.

Cobos, Rafael (Universidad Autónoma de Yucatán)

[90] *Built Environment and Green Landscape: Settlement at the Ancient City of Chichén Itzá*

Archaeological data recovered at Chichén Itzá provide an excellent opportunity to analyze the way in which elite members, food producers, and commoners got together and permanently occupied the same settlement through several centuries. These individuals organized their space used for the construction of elaborate and non-elaborate architecture as well as zoning the land that functioned for agricultural purposes. To understand Chichén Itzá's intrasite morphology can help us to explain how a dispersed settlement sheltered population capable of managing the organization of their space and resources. This also mirrors social, political, and economic aspects of the internal.

[221] Discussant

Cochran, Jennifer [51] see Brown, M. Kathryn

Cochrane, Brett [12] see Garvey, Jillian

Codding, Brian (Stanford University) and Douglas Bird (Stanford University)

[11] *A Land of Work: Foraging Behavior and Ecology*
California's prehistoric record encompasses a broad array of forager adaptations to environmental, social and historical variability. Active research in this area frequently draws on models from behavioral ecology to understand how and why changes in subsistence patterns occur across time and space. Synthesizing some of this recent research, this paper explores how by focusing on work, California archaeologists have come to understand a great deal about the colonization of the region, the relationships between human foraging decisions and environmental change and how these dynamic interactions intertwine with historical perturbations to produce the diversity of life-ways represented across the state.

Codding, Brian [192] see Bird, Rebecca [74] see Zeanah, David W.

Coffey, Grant (Crow Canyon Archaeological Center)
[117] *Transition and Continuity: Settlement Patterns and Social Implications in the Goodman Point Area*

Using data compiled through the Village Ecodynamics Project, a GIS analysis of sites within and around the Goodman Point Unit of Hovenweep National Monument suggests changing settlement patterns and the spatial distribution of special-use sites might point to continued intercommunity organization spanning the collapse of the

Chaco regional system.

Coffey, Tonya [59] see *Kimball, Larry R.*

Cogswell, Lucy (California State University, Northridge)

[186] *Jade as a Prestige Good at La Blanca, Guatemala*
In terms of clear cut social distinction being determined by prestige goods, most archaeological focus gets put upon Classic sites. However, the Middle Preclassic should not be fully ignored, and should instead be stressed upon as supporting the beginnings of this tradition. The site of La Blanca offers an interesting look at different types of household assemblages and suggests basic jade production at the site.

Cohen, Anna (University of Washington) and Christopher T. Fisher (Colorado State University)

[58] *Constructing social space (part 1): multi-scalar organization at Sacapu Angamucu*
In early urban centers, social and political authority were exerted through the production and manipulation of space. At the Postclassic site of Sacapu Angamucu, Michoacán, inhabitants carefully produced and managed space through architectural forms and settlement patterns. Here I consider the implications of open and restricted settlement areas and make preliminary observations concerning the extension of socio-political authority at the site.

[58] *Second Chair*

Cohen, Anna [4] see *Marwick, Ben*

Colaninno-Meeks, Carol (University of Georgia)

[132] *Comparing the Growth of Late Archaic and Modern Hardhead Catfish (Ariopsis felis) Populations from the Georgia Coast (USA)*

Throughout the Holocene, people seriously impacted some animal populations. This may hold true for fish populations of the Georgia coast (USA), which were heavily used. To examine whether humans impacted fish populations in the past, growth increments in Late Archaic and modern hardhead catfish (*Ariopsis felis*) otoliths were analyzed. Growth curves and growth rates indicate that modern catfish populations grow to larger sizes at comparable ages compared to archaeological populations. Under the density-dependent model of animal growth, this suggests that modern populations are experiencing environmental disturbances impacting growth which may be related to human activities.

Cole, David [97] see *Anovitz, Lawrence M.*

Cole, Sally (Utah Museum of Natural History)

[188] *Place, Color, and Image: Chronology and Social Identity in Basketmaker II-Associated Rock Art at the Falls Creek Shelters*

The spatial distribution and organization of rock paintings (colors and imagery) and material culture at North and South Falls Creek Shelters and the site chronology, including a radiocarbon date from a typical San Juan Basketmaker II-style form, provide a context for examining the social significance of the paintings over time. Black appears to be the predominant color used by early Basketmaker II occupants; later Basketmaker paintings present a variety of colors. Along with colors,

distinctive types of images and techniques were used to mark discrete spaces and clusters of archaeological features within the two shelters.

Coleman, Julie

[188] *"The Worst and Best of Durango Archaeology: Falls Creek Rock Shelters Revisited"*

The history of archaeological investigations at the Falls Creek Rockshelters over the past 70 years provides an example of both the worst and best of Southwestern archaeological endeavors. The site has long been considered to be one of the best collections of "Eastern" Basketmaker II materials and is currently be re-analyzed as part of the cultural affiliation and NAGPRA process. Historical background and introduction to current research on the artifacts, human remains, and rock art will be presented.

[188] *First Chair*

Coles, Melissa [107] see *Gunter, Madeleine*

Collard, Mark (Simon Fraser University), Briggs Buchanan (University of Missouri), Marcus Hamilton (University of New Mexico) and Michael O'Brien (University of Missouri)

[155] *Testing hypotheses about the Early Paleoindians with radiocarbon dates*

This paper has two goals. One is to summarize the results of an on-going program of research in which we are using large samples of radiocarbon dates to shed light on important issues concerning the Early Paleoindians, including the speed of colonization of North America, the timing and nature of the Clovis-Folsom transition, and whether Clovis disappeared as a result of an extraterrestrial comet impact in the Great Lakes region. The other goal is to highlight several major flaws in a recent critique of the main methods we have employed in this research, diffusion analysis and summed probability distribution analysis.

Collard, Mark [22] see *Buchanan, Briggs*

Collette, Jim

[20] *[My Definition of Shinarump Can Beat Up Your Definition of Shinarump: Thoughts from the Eastern Grand Canyon]*

During the MNA/GRCA River Corridor Archaeology Project in the Grand Canyon ceramic analysis confirmed the introduction of three sequential ceramic traditions. Ceramics and architecture appear to reflect a growing reliance on local pottery production and permanent occupation of river level sites in the Canyon. However, ceramic analysis also demonstrated considerable variability within the late wares, such as the Shinarump series of gray, white and red wares. This paper summarizes temper and firing attributes that may (or may not) be useful in defining the characteristics of "classic" Shinarump on the southeastern periphery of its distribution.

[20] see *Webber, Charlie C.*

Collins, Antoinette (University of Leicester)

[154] *Resting in the Shadow Of The Ruins: The Weymouth Burial Grounds Mapping Project*

Rapid growth in the utilization of technology in research and education can link a small 18th century New Jersey

cemetery with the history of the region and people who settled there. Hyperlinks, audio tours, multilayered GIS maps for spatial analysis and digital video will allow for a more thorough understanding of the history of this region. Through technology this small cemetery can provide educational and research opportunities to the community and about the region as a whole. A mixed media approach to data storage and dissemination will allow for a more individualized approach to information access and utilization.

Collins, Brian [259] *see Fairley, Helen*

Collins, Joshua [222] *Discussant*

Collins, Laurel

[222] *Fluvial Geomorphology of Quiroste Valley and Whitehouse Creek during the last 200 Years*
During Portola's 1769 exploration of coastal California, Whitehouse Creek was already incised within Quiroste Valley. Carbon dates from the uppermost terrace indicate the valley was building upwards by 8000 BP. By 1769, the creek had developed an inner floodplain with several inset terraces that supported groves of coast redwood. Archeological evidence indicates the valley flat and inset terraces were used contemporaneously. Based on tree coring and stream surveys, the creek bed has incised 5-7ft since Portola's visit, due mainly to twentieth century upstream dams and water diversions. Historical stream incision has probably dewatered the valley floor relative to pre-contact conditions.

Collins, Lori (University of South Florida), Travis Doering (University of South Florida, AIST) and Mary Pohl (Florida State University)

[157] *The La Venta Stone Monument Documentation Project: New Directions in Iconography and Preservation Opportunities for Carved Stone Monuments in Mesoamerica*

This paper reviews the procedures utilized in the 3D documentation and analysis of more than 25 stone altars, stelae, monuments, and objects from La Venta, Tabasco, Mexico. Monument studies have relied primarily on photographs and derived drawings. Because many of these Formative Period multi-ton sculptures are carved in the round, traditional photos and drawings are often unable to depict these pieces adequately, with their faint and fragile carved surface details difficult to discern. Using close range 3D laser scanning, these data are now being used for iconographic and epigraphic research and have potential for preservation, restoration, and replica production.

Collins, Lori [82] *see Mcleod, Bart*

Collins, Ryan (Brandeis University)

[28] *The Raised-Heel and Ritual Process*
Among scholars, the raised-heel pose in late Classic Maya art has had a quarter century-spanning visual and hieroglyphic linkage to dance. However, this connection is rendered problematic when comparing the contextualized chronology and distribution of the raised-heel to that of the T516 sign, representative of the verb *ak ot*, "to dance." This paper reexamines the raised-heel pose through a discussion of the associated semasiographic, epigraphic, and archaeological contexts.

By focusing on continuities between ceramic and sculpted representations, this paper argues for a new interpretation of the raised-heel, expressing a theme of liminality in the process of death, internment, and resurrection.

[28] *First Chair*

Coltrain, Joan (University of Utah)

[91] *Evidence for Fremont Maize Farming in the Soil Organic Chemistry of Range Creek Canyon*

The density of granaries and other structures in Range Creek Canyon suggests that Fremont groups likely farmed the best-watered sections of the canyon bottom. However, shallow middens with relatively limited assemblages of refuse raise questions about both the intensity and duration of Fremont occupation. Here I present evidence for maize farming in the soil organic matter of a meter deep core taken from a spring-watered flat adjacent to the creek. The stable carbon isotope signature of soils dating to the Fremont period clearly indicates the presence of organic material consistent with the isotope chemistry of maize.

Comer, Douglas (Cultural Site Research and Management (CSRM)) [110] *Second Chair*

Commendador, Amy (Idaho Museum of Natural History), Bruce Finney (Idaho State University /CAMAS) and John Dudgeon (Idaho State University/CAMAS)

[180] *Isotopic Analyses of Small Mammals from the Wasden Site, Idaho as Indicators of Climate Change on the Eastern Snake River Plain*

Previous research on the small mammal population recovered from excavations at the Wasden Site, southeastern Idaho suggests that changing frequency distributions through the Holocene represent a shift in climate from a cooler, wetter regime to a warmer, drier one. This conclusion is re-evaluated using carbon and nitrogen isotope analyses of bone collagen from the two primary species of small mammals from the previous studies: pocket gophers (*Thomomys talpoides*) and pygmy rabbits (*Brachylagus idahoensis*). Isotopic evidence from the small mammal distribution over time may help refine current models for climate change, by providing alternate forms of evidence to test these hypotheses.

Coningham, Robin (University of Durham) [90] *Discussant*

Conkey, Margaret (UC-Berkeley) [84] *Discussant* **[196]** *see Sykes, Becky M. [218]* *see Lacombe, Sebastien*

Connell, Samuel (Foothill College), Chad Gifford (Columbia University) and Eric Fries (UCLA)

[15] *What Happens After You Resist the Inka Invaders for a Decade and They Sacrifice Everybody? You Get Colonized by the Spanish*

Investigations at the Pambamarca Fortress Complex continue to piece together the culture history of indigenous Cayambe-Carangue resistance along Tawantinsuyu's northern frontier during the early 1500s. New research seeks evidence of Inka-Cayambe post-conquest relationships to better understand aspects of continued resistance in colonial contexts. Results from

recent excavations provide supporting evidence for a locally vibrant Cayambe population living under Inka control. Our paper details excavations at an Inka colca site, a Cayambe fortress occupied by the Inka, and a Cayambe pyramid in the shadows of a Cayambe stronghold.

[79] *Discussant*

Connell, Samuel [190] *see* *Kindon, Andrew W.*

Connolly, Cara (University of Nevada, Las Vegas)
[61] *Groove and Cupule Rock Art Style in the Mojave Desert: An Experimental Study*

The groove and cupule rock art style is widely dispersed throughout the Mojave Desert. This rock art style is defined as boulder or rock slab covered with incised grooves, rarely more than a quarter inch in depth, and small rounded depressions (cupules), usually one or two inches in diameter and half inch to inch in depth. This study examines a number of rock art sites in Southern Nevada with this style of petroglyph, and the final analysis of an experimental project conducted to determine what tools were used to create groove marks and the purpose of this petroglyph.

Connolly, Thomas [160] *see* *Baxter, Paul*

Connolly, Tom, Craig Skinner (Northwest Research Obsidian Studies Laboratory) and Paul Baxter (University of Oregon Museum of Natural & Cultural History)

[160] *Ancient Obsidian Trade Routes in the Pacific Northwest*

Obsidian is important in tracing ancient trade relationships, as geochemical profiling permits both its place of origin and final destination to be identified with precision. We review the previously reported evidence for the role of Newberry Volcano obsidian in a Pacific Northwest trade network, then examine the distribution of obsidian from the widely used Obsidian Cliffs source, located in Oregon's Cascade Range. Obsidian Cliffs material exhibits similar geographic, and probably temporal, distributions as the Newberry obsidian, suggesting that both sources were part of the same economic network, primarily destined for consumers to the north.

Conrad, Geoffrey (Indiana University), Charles Beeker (Indiana University), John Foster (Indiana University), Jessica Keller (Indiana University) and K. Harley McDonald (Indiana University)

[69] *Cultural and Faunal Remains from Padre Nuestro, Dominican Republic*

Padre Nuestro is a flooded cavern in the southeastern Dominican Republic that is under investigation by a team from Indiana and Duke Universities. The site contains ceramics of the Taino culture (800-500 BP) and much earlier "Casimiroid" stone tools (4000-6000 BP). It has also yielded remains of at least two genera of extinct sloths (*Acratocnus*, *Parocnus*) and one genus of extinct primates (*Antillothrix*). At present this set of associations is both unique in Caribbean archaeology and highly complicated. This paper presents a preliminary analysis of the chronological and cultural relationships among the different classes of materials.

[69] *First Chair*

Conrad, Geoffrey [260] *see* *Foster, John W.*

Constantine, Angelo

[231] *Early Settlements in continental Ecuador: New Evidences of Pre-Ceramic sites*

New research suggests that the settlement of Ecuador was initiated through the inter-Andean pathway, occupying the humid forest and continuing towards the coastline. The existence of two pre-ceramic sites on the western Andean foothills, as well as another on the eastern side, clearly indicate the presence of human groups.

[103] *see* *Damp, Jonathan E.*

Contreras, Daniel (Stanford University) and Nicholas Tripcevich (UC Berkeley)

[97] *Retrospect and Prospect for Obsidian Studies in the Central Andes*

Since investigation of the sources and circulation of obsidian in the Central Andes began in the 1970s, data generated by the geochemical characterization of obsidian have been used to examine prehispanic mobility, exchange networks, and spheres of political influence. We here review the successes and failures of 30+ years of obsidian sourcing studies in the region, discuss the research questions which remain foci of attention, and consider the prospects for research into prehispanic procurement, distribution, circulation, and use of obsidian in the Central Andes.

Contreras, Daniel [63] *see* *Freund, Kyle P. [267]* *see* *Tripcevich, Nicholas*

Conway, Meagan (University of Massachusetts Boston), Casey McNeill (Cultural Landscapes of the Irish Coast Project), Ian Kuijt (University of Notre Dame) and Katherine Shakour (Cultural Landscapes of the Irish Coast Project)

[107] *The Archaeology of an American Wake: 19th and 20th Century Immigration, Inishark, Co. Galway*
Irish immigration in the 19th and 20th centuries restructured communities in villages at home and in cities abroad. Drawing upon historical records, oral histories, and archaeological survey, we track individual immigrants from the island of Inishark, Co. Galway, to the United States. We explore the formation of transatlantic relationships and consider the impact of substantial immigration on social and economic life within coastal communities. Our research shows that significant population decline from the 1850's to 1960 brought about major changes in the fishing and farming industries, which forced modifications to the lifestyles of the remaining islanders.

[107] *First Chair* [107] *Second Organizer*

Conway, Meagan [107] *see* *McNeill, Casey M.*

Cook, Della [226] *see* *Schurr, Mark R.*

Cook, Gordon [255] *see* *Bonsall, Clive*

Cook, Greg [89] *see* *Horlings, Rachel L.*

Cook, Jackie [101] *see* *Yu, Pei-Lin*

Cook, Katherine (McMaster University)**[27]** *Placing History: Landscape, Memory and Heritage in Archaeology*

The tenuous, fluctuating and intangible nature of cultural connections to history challenges any archaeological attempt to access concepts of heritage that are tied to place. However, by deconstructing a temporal landscape, it is possible to separate and interpret the material accumulations of changing attitudes towards the past that have impacted historical spaces. Using landscape analysis and ethnoarchaeological research to establish a visual and experiential history of Hamilton Cemetery, from 1847 to present, this paper explores the transitions between memory and a more distant, collective history to contribute to our understanding of and approaches to heritage in the past and present.

Cook, Reese (Northern Arizona University)**[207]** *Raman Spectroscopy: Molecular Signatures Through Time*

The prehistoric Hohokam manufactured unique Red-on-buff pottery characteristic of their culture. This study subjected samples of Red-on-buff pottery, recovered from a Hohokam habitation site, to a molecular analysis called raman spectroscopy. Raman spectroscopy analysis was applied to Hematite pigment used in the application of red paint on Red-on-buff pottery. The analysis identified pattern signatures unique to the Hohokam chronological phases of Snaketown, Gila Butte, and Santa Cruz. The analysis identified changes in hematite sources through time. Identifying the differences and similarities of molecular signatures helped establish Hematite sources used in the manufacture of pottery from this unique out-lying site.

[135] *see Ryan, Kimberley A.***Cooke, Colin (Yale University)**

[267] *Geoarchaeological and paleoenvironmental archives of ancient cinnabar mining in the Andes*
Cinnabar mining has been occurring in Peru for over three millennia. Cinnabar was used as a pigment (vermillion) throughout the pre-Colonial era and is commonly found covering even the earliest gold artifacts. However, we still know very little about how this vermillion was traded and who controlled the resource. Here, I will present the results of an interdisciplinary geoarchaeological study that combines lake sediment cores, archaeological remains, and isotopic analyses to better understand the spatial and temporal evolution of cinnabar mining and trade throughout the pre-Columbian Andes.

Cooke, Richard (Smithsonian Tropical Research Institute, Panama) and Anthony Ranere (Temple University)**[213]** *[Radiocarbon dates from Panama between 13,000 and 7000 BP, a period of profound Climate, Environmental and Cultural Change]*

The 13,000-7,000 BP period in Panama relates to fundamental environmental and cultural changes. Evidence for human activities is not visible in the archaeological and lake sediment records until 11,500-11,000 BP and the Clovis technological horizon. Surface artifacts suggest earlier occupation. Twenty-nine dates come from five stratified rock-shelters and two open sites (all on the Pacific). Eighteen dates were recovered in

sediments from two lakes (La Yeguada and El Valle), which record human impacts on the environment. We assess radiocarbon chronology vis-à-vis climate and culture change during the transition from hunting and gathering to a mixed economy with intensifying agriculture.

Cooke, Richard [120] *see Ranere, Anthony J. [228]* *see Iizuka, Fumie [193]* *see Beaubien, Harriet F.***Cooney, Gabriel (UCD School of Archaeology)****[226]** *Traditions and Transformations in the Irish Neolithic*

There is a rich and varied record of mortuary practices in Ireland during the Neolithic (4000-2500 BC). These are documented in the deposition of human remains in specific settings in a series of burial traditions. Some of these traditions overlap geographically and chronologically, some are distinctive to particular periods and regions. This paper will explore the complex and varied role of cremation in these different contexts and how it was employed to both transform bodies and to create distinctive expressions of personal and social identities.

[226] *Third Organizer***Cooper, Jason [29]** *see Chatters, James C.***Cooper, Karen [76]** *see Doran, Glen H.***Cooper, Leslie [121]** *see Galle, Jillian E.***Copeland, Steve (Crow Canyon Archaeological Center)****[62]** *XRF Analysis on Ancient Copper from a Great Kiva in the Central Mesa Verde Region*

Crow Canyon Archaeological Center has been conducting excavations for the past three years at The Harlen Great Kiva site. As part of these excavations high input items have been recovered including a fragment of a copper bell. These copper items are rare in the Central Mesa Verde Region and when analyzed and compared with other copper in the Southwest could produce important data. This poster will explore the history of ancient copper in this region and present the results of XRF analysis on the copper bell fragment from the Great Kiva Site.

Corbett, Debbie [168] *see Hanson, Diane K.***Cordell, Linda (School for Advanced Research)****[196]** *The R. S. Peabody Museum and Pecos: The Legacy Continues*

In 1915, sponsored by the R. S. Peabody Foundation, A. V. Kidder began his legendary work at Pecos Pueblo to demonstrate the value of scientific excavation techniques. Nearly a century later, Pecos remains an icon in American archaeology having inspired a system of classification still in use today, a continuing forum in which to share research, a model for dialogue with descendant communities, a venue for continuing research, and an inspiration for youth from every quarter.

[18] *Discussant***Cordell, Linda [18]** *see Hays-Gilpin, Kelley A. [99]* *see Van West, Carla R.*

Cordero, Maria-Auxiliadora (University of Pittsburgh) and Richard Scaglion (University of Pittsburgh)

[73] *Prehispanic Ritual Vessels from Northern Highland Ecuador: New Interpretations from Carnegie Museum of Natural History's Henn Collection*

In the early 1910s Arthur Henn acquired more than 300 ceramic artifacts in El Angel, Carchi Province, for the Carnegie Museum of Natural History in Pittsburgh, Pennsylvania. The provenance of the artifacts seems to be deep-shaft tombs. This paper describes the collection and analyzes the ritual use of ceramics, focusing on those known as Piartal pottery. Overpainting of these vessels—part of local elite paraphernalia—may represent curation of serving bowls in relation to funerary rituals. Implications for a broader understanding of ritual vessels in the Northern Highlands are explored.

[73] *First Chair*

Cordero, Robin (Univ. of New Mexico)

[37] *Tiguex Mortuary Practices: Continuity and Migration in the Albuquerque Basin during the Northern Rio Grande Classic*

General trends in Northern Rio Grande mortuary practices during the Classic period (ca. AD 1325-1600) has resulted in the identification of a wide range of burial orientations, body positions, grave accoutrements, and age/sex variation. However, recent analysis of Classic period burial patterning in the southern area of the Northern Rio Grande region indicates the presence of a highly conservative set of burial practices throughout the Classic Period. In addition, this analysis reveals a potential disruption in the conservative nature of the burial practices after ca. AD 1450 suggesting an influx of non-Tiguex peoples into the area.

[37] *First Chair*

Cordova, Hector (CSULA)

[266] *Jades and Items of Personal Adornment at Midnight Terror Cave: A Critical Assessment*

Items of personal adornment, especially those made from exotic imported material such as jade, have traditionally been used in mortuary archaeology to infer status and develop ideas of social persona. In Maya cave archaeology such artifacts occur frequently, often in contexts not associated with human osteological material, suggesting that they were deposited as offerings because of their intrinsic value. The large numbers of human skeletons at Midnight Terror Cave complicates the interpretation of the artifactual material. An analysis of the context of each item in the assemblage provides a better picture of the function of jewelry at MTC.

Cordova, Isabel (California State University Northridge)

[186] *Determining the Role of Anthropomorphic Figurines in Social Complexity: Is there a Correlation?*

There have been many detailed analyses of anthropomorphic figurines from the Mesoamerican region, yet the meanings and uses of these figurines remains uncertain. In this paper, I pose to analyze different data sets from La Blanca to understand the role figurines may attribute to the social complexity of the archaeological site. This paper builds upon previous research regarding the theoretical applications of figurine

use throughout Mesoamerica, directly relating these theories to La Blanca. This previous study will be broadened to include complexity to gain a better understanding of the role figurines may have played in a Middle Preclassic society.

Cordy-Collins, Alana (University of San Diego)

[125] *Professor Carol J. Mackey: Homenaje*

The contributions to Andean anthropology made and ongoing by Dr. Carol Mackey are impressive and significant. From the Peruvian southern sierra to the north coast, this UC Berkeley-trained scholar has for over 40 years sought to enlarge our understanding of ancient Andean culture history by posing field-testable questions. Through Dr. Mackey's archaeological and iconographic research we now recognize both extensive patterns and critical details about cultural development, interaction, and succession on the Peruvian north coast. Equally important, however, Mackey has taught and mentored an impressive number of young scholars who have gone on to achieve their own successes in Andean archaeology.

[156] *see Tyson, Rose A.*

Cornejo, Norfelinda Cornejo [269] *see Rodriguez, David M.*

Coronel, Eric (Brigham Young University), David Lentz (University of Cincinnati), Nicholas Dunning (University of Cincinnati), Vernon Scarborough (University of Cincinnati) and Richard Terry (Brigham Young University)

[119] *Phosphate prospection for ancient middens at Tikal, Guatemala*

We used phosphate prospection at four ancient patio groups at the site of Tikal, Guatemala in search of middens. The intense decomposition in the warm, moist soils of the Tikal area precludes the identification of most organic remains but lithic, ceramics, and charcoal are generally preserved in middens. The results of P prospection at household mound groups will be presented.

Cortes Rincon, Marisol [148] *see Boudreaux, Sarah N. [148]* *see Brokaw, Nick*

Cortes-Rincon, Marisol (Humboldt State University), Sarah Boudreaux (University of Texas at Austin) and Jaimie Baxter (Humboldt State University)

[148] *Dos Hombres to Gran Cacao Settlement Survey Project: Preliminary Findings*

This paper provides an overview of recent investigations of the settlement between two Maya sites: Dos Hombres and Gran Cacao located in northwestern Belize. Settlement studies require multiple lines of data and multiple scales of analysis before sufficiently advanced settlement patterns can be discerned. Archaeological research data within the project area has produced a preliminary dataset including: settlement configuration, land use, ecological data, and water management. This paper will discuss the socioeconomic conditions within the context of the surrounding community, and the subsistence strategies practiced in this area will be examined in relation to the chosen environment for site placement.

[148] *Second Organizer*

Cossich, Margarita [8] *see Paredes-Umaña, Federico A.*

Costamagno, Sandrine [17] *see Rendu, William*

Costello, Sarah (University of Houston)

[47] *Methodologies in the Study of Seals and Sealing*
Early Dynastic banquet seals from Mesopotamia offer a case study of how a multiplicity of approaches directed at a small corpus of seals can yield a rich picture of social roles, in particular the roles of elite women. In this paper I combine approaches, looking at the material from which the seals are made, the images they bear and the meaning of those scenes, the performativity of seals as jewelry, and the disposal of some of the seals in a lavish public funerary rite. Together, these various approaches demonstrate how seals functioned to constitute power among elite Sumerian women.

Costin, Cathy (California State University, Northridge)

[198] *The Cooption of "Surplus": Social Costs and Political Benefits in the Inka Empire*

A hallmark of socioeconomic complexity is that people produce goods in excess of their individual or household needs (that is, a "surplus") in order to participate in exchange networks, pay "rent," and/or meet tribute demands. Depending on sociopolitical circumstances, this intensification of production can develop gradually or can be implemented abruptly. This intensification can have myriad affects within and among households. In this paper, I consider the various ways in which changes in the control over the power to mandate intensification of production (i.e., demands to produce or increase a "surplus") affected people with different social identities in the Inka empire.

[49] *Discussant*

Cottica, Daniela [92] *see Domínguez-Bella, Salvador*

Coupland, Gary (University of Toronto) and Gay Frederick (Vancouver Island University)

[232] *Diversity in the Salish Sea: The Case of the Sechelt of the Northern Georgia Strait*

Complexity in Coast Salish culture has been argued as resulting directly from access to Fraser River resources, especially salmon. The Sechelt, a northern Coast Salish Nation, did not have direct access to salmon. We consider how the Sechelt built a complex culture away from the Fraser River by taking advantage of a large territory with diverse resources, opportunities for trade with interior and coastal groups, and ease of access through their land via waterways that penetrated to the upper reaches of the territory. We use the Sechelt case to model an alternate path to complexity for the Salish Sea.

Covey, Ronald (Southern Methodist University) [227]
Discussant

Cowan, Andy [4] *see Marwick, Ben*

Cowart, Alicia (University of California, Berkeley) and Roger Byrne (University of California, Berkeley)

[222] *Changes in Vegetation and Fire Frequency in Central Coastal California as recorded in pollen and*

microscopic charcoal

Analysis of pollen and microscopic charcoal from two wetlands in central coastal California document changes in vegetation and fire frequency over long-term time scales. Ecological changes recorded in wetland sediments can be attributed to human impact or climate change, with the impacts of Native American burning being the focus of this study. The record from Skylark Pond (~3,000 years) covers the late Holocene, an important time period for assessing the impacts of Native American burning and the changes brought about with European settlement. The record from Laguna de las Trancas (~60,000 years) includes the Last Glacial Maximum and the Pleistocene/Holocene transition. This long-term record, much of which precedes the most agreed upon time of human arrival in North America, will provide a pre-human context with which to compare the late Holocene record.

Cox, Forrest [196] *see Abe, Hillary R*

Cox, Pamela [187] *see Lack, Andrew*

Crabtree, Stefani (Washington State University), Ziad Kobti (University of Windsor) and Timothy Kohler (Washington State University)

[257] *Archaeology Time Machine: Witnessing Social Interactions on the Pueblo Landscape through Agent-based Simulation*

Previous work within the Village Ecodynamics Project (VEP) has successfully established a detailed, semi-realistic, household-level model for Puebloan ecodynamics. In this paper I build on the framework of the VEP's agent-based simulation and examine the social interactions of our agents through exchange networks. Through an understanding of both kin and non-kin related exchange, we can better understand the complexities of social interaction in the archaeological record, potentially helping us understand the population shifts this area experienced.

Craib, Donald (Cultural Heritage Partners, LLC) [184]
Discussant

Craig, Douglas (Northland Research) and John Marshall (Northland Research, Inc.)

[52] *Architectural Visibility and Population Dynamics in Late Hohokam Prehistory*

Reconstructing population dynamics with archaeological data is a challenging task under the best of circumstances. The task is especially challenging in the case of the Hohokam of south-central Arizona, because room counts—the method used to establish population parameters in other parts of the Southwest—are difficult to obtain without large-scale excavations. Additionally, many Hohokam settlements were occupied for hundreds of years; hence, the various components need to be unraveled. This paper reviews lessons learned from recent excavations at several late Classic period sites to reexamine the sharp decline in population postulated by many current interpretive models.

[52] *First Chair [52] Second Organizer*

Craig, Oliver [42] *see Shillito, Lisa-Marie S.*

Crandall, John (University of Nevada, Las Vegas),

Debra Martin (University of Nevada, Las Vegas) and Jennifer Thompson (University of Nevada, Las Vegas)

[237] *Reconstructing Taphonomy at La Cueva de los Muertos Chiquitos*

The La Cueva de los Muertos Chiquitos site is located in a cliff face overlooking the Rio Zape just north of Durango, Mexico. It was excavated in the 1950s and has been in the UNLV repository since that time. This cave site, between 600 and 1000 AD, contained the remains of at least 9 children between the ages of birth and 3 years as well as the remains of at least 2 adults. This project is a reanalysis of the remains involving a detailed reconstruction of their taphonomic context. These children represent a unique collection in terms of the paleodemography and paleopathology present.

Crane, John [150] *see Nelson, Shaun R.*

Crassard, Remy (CNRS) and Michael Petraglia (University of Oxford)

[74] *Fluted point technology from Arabia: Convergence with American examples*

Fluting of projectile points in South Arabia has been discovered in the early 2000's in Yemen and the Sultanate of Oman. The fluting technique appears in stratigraphy at the site of Manayzah (Yemen) and is dated to the late 7th / beginning of the 6th millennium BC Cal. This paper presents the chaîne opératoire of the fluting operations from the examination of fluted pieces and channel-flakes in stratigraphic contexts. This paper will discuss the functionality of the tools and the technical investment of the knappers, as well as some first analogies with the technological similarities and differences of American fluted points.

[74] *First Chair*

Crawford, Kristina (California State University, Chico) and Arran Bell (California State University, Chico)

[77] *A Tale of Inter-twined Identities: Ishi and Northern Californians*

Ishi is perhaps the most written about Indian in anthropological and literary works; each published work presents different ways of knowing Ishi. A renewed interest in Ishi began with the publication of Ishi in *Two Worlds* in 1961 and the commemoration of his discovery site in Oroville in 1965. County historical societies published accounts of Ishi as told by locals, and Ishi became part of the California History curriculum taught to fourth grade. This paper will examine local knowledge, children's literary canon, and local stories to illustrate the importance of the idea of Ishi to Northern California identity.

[77] *Second Organizer*

Crawford, Laura (University of Alaska, Fairbanks), Claire Alix (University of Paris (Sorbonne)) and Nancy Bigelow (University of Alaska, Fairbanks)

[25] *Fuel Use in Thule Era Houses at Cape Espenberg, Northwest Alaska, AD 1200-1700*

The excavation of two Thule semi-subterranean houses at Cape Espenberg in 2010 revealed large hearths with thick layers of burnt soil containing abundant charcoal and burnt bones. They provide strong evidence that sea mammal oil burnt in lamps was not the sole fuel source. This paper presents the analysis of plant macrofossils

and charcoal remains collected across occupation layers and fill to investigate the function of the hearths, and the nature and availability of local fuel supplies between AD 1200-1700. One goal is to determine if, and how heavily, driftwood fuel was supplemented with bone or woody shrubs.

Crawford, Laura [159] *see Alix, Claire*

Creel, Andrea (University of California - Berkeley)

[258] *The Sense of Ritual in Votive Deposition at Kuntillet 'Ajrūd and the Southern Levant*

Votive deposition is a particularly constructive ritual act in which to explore the relationships between belief, ritual and object as materiality is so inherent to the act that it is simply incoherent without the dedicated item. My case study focuses on an 8th century BCE site in the Sinai desert. Its location in a liminal zone, fortress-like architecture and evocative art and inscriptions with the preponderance of small vessels suggests that votive deposition at Kuntillet 'Ajrūd was intentionally restricted to vessels and their contents. This highlights the tendency to ritualize quotidian objects and demonstrates the highly localized character of ritual.

Creese, John (University of Toronto)

[55] *Growing Pains: Spatial Dimensions of Northern Iroquoian Community (Re)Production]*

Analysis of Ontario Iroquoian village spatial order at three scales (hearth areas, longhouses, complete settlements) illustrates coordinated dimensions of social practice across a period of increasing settlement nucleation (A.D. 900 – 1500). Village growth is treated as a problem of community constitution that involved the emergence of systemic tensions associated with the scalar extension of collective social groups. A "local-to-global" spatial order, first established with the paired family hearth area, served as a precedent that was progressively exported to wider spatial scales so as to maintain a balance between sub-group or factional group formation, and the global integration of village communities.

Creger, Cliff (Nevada Department of Transportation) and Beth Smith (Nevada Department of Transportation)

[163] *Terrestrial LiDAR in Site Analysis: Practical Applications on a Prehistoric Antelope Trap in Northeastern Nevada*

The Nevada Department of Transportation Archaeology Section reanalyzed the Liza Jane Antelope Trap in northeastern Nevada using a terrestrial LiDAR survey of the topography and a Global Positioning System survey of the artifact point and feature polygon data. This study integrates terrestrial LiDAR data, digital photography, and artifact data collected using GPS to convey the three dimensional spatial relationships within the trap. The final representation demonstrates the importance of the view shed in gathering and containing antelope, while the spatial analysis of the lithic artifacts, features and topography suggests possible strategies used to harvest them.

Cremonte, Maria B. (Conicet-Idgym)

[27] *Social Landscape During Inca Dominion In Northwest Argentina*

Among the ways that the Inca Empire adopted to rule its

territory included actions into ideological, economic, and political sphere which explain in part the diversity and disparity that the state presence reached. Constructions like roads, tampos, pukaras, administrative centers, storage buildings, agricultural works, among others, were common in the entire annexed areas, but it is evident that its architecture, dimensions, monumentality and spatial density show contrasting regional differences. New evidence regarding Inca occupation in Northwest Argentina shows different situations along the period of Inca conquest and domination itself. According to the evaluation of data from a couple of archaeological sites, all of them characterized by Inca features, varied chronologies, and archaeological contexts like burial sites, production or agricultural sites, administrative, and fortified sites are examples of the complex process of population assimilation in Northwest Argentina. [68] see Williams, Veronica I.

Crider, Destiny (Arizona State University)

[36] *Ceramic Pastes, Past Connections, and Social Reorganization: Epiclassic and Early Postclassic Interaction in the Basin of Mexico*

Pottery styles, technology, and chemical characterization provide evidence to assess shifting relationships in the Basin of Mexico during the Epiclassic and Early Postclassic periods. By taking a multi-scalar perspective, the patterns for the adoption and distribution of new pottery styles and traditions reflect changing boundaries of sociopolitical and economic interaction for this five hundred year span. Technological and stylistic attributes within pottery types reveals instances of both emulation and direct knowledge of production. Differing identities are identified locally and at the regional level in particular pottery complexes and symbol sets, contributing to new understanding of this period of dynamic reorganization.

Crisci, Gino, Donatella Barca (Università della Calabria) and Domenico Miriello (Università della Calabria)

[92] *Mortars and plasters characterization and limestone provenance. A methodological approach*

Characterization of plasters and mortars, related to the architectural study, allows identifying the presence of different construction phases, which can be related to technological aspects and/or to the presence of different producers. This research identifies a new methodology to determine the provenance of raw materials employed in the making of mortars and plasters. The innovative method is based on the use of LA-ICP-MS on lime lumps preserved in the plasters and mortars. This study shows different examples of the application of this methodology to archaeological sites from both the "Classical World" and Mesoamerica.

Croatt, Stephanie (Trinity University)

[208] *Social Strands: Dyadic Relationships as Means of Integration for Lebanese Immigrant Entrepreneurs in early 20th Century Yucatán, Mexico*

In the late 1800s and early 1900s, the Yucatán peninsula saw an increase in the number of immigrants coming to Mexico to seek economic gain. The diverse immigrant groups, and their entrepreneurs, faced the problem of building a support network in an unfamiliar environment. In order to have the means to integrate into, and negotiate corruption in Yucatecan society immigrant

entrepreneurs in Yucatán, Mexico had to forge interpersonal relationships outside of their immigrant network. I seek to describe how early 20th century Lebanese immigrant entrepreneurs used dyadic relationships to become an influential part of Yucatán's social and political scene.

Crook, Robyn [35] see Taylor, Anthony W.

Cross, Guy [176] see Villeneuve, Suzanne

Crothers, George (University of Kentucky)

[82] *William S. Webb's Archaeological Legacy in Kentucky: From Adena to Indian Knoll*

Webb's administration of federal relief programs to conduct archaeology had a major influence on professionalization of the discipline in the southeastern U.S. In Kentucky, two of the most significant projects targeted excavation of Adena mounds and Archaic shell middens. Both topics remain a major focus of anthropological research today. Adena continues to be a topic of considerable debate on agricultural origins, ceremonialism, regional interaction, and social complexity. Osteological collections, best known from the Indian Knoll site, continue to have international impact on studies of paleopathology, growth and development, functional morphology, and hunter-gatherer population interaction.

Crow, Consuelo [124] see De Leon, Jason P.

Crowley, Erin (University of Wisconsin-Milwaukee) and Brian Nicholls (University of Wisconsin-Milwaukee)

[104] *A Comparative Perspective on the Schlage Site Oneota Lithic Assemblage*

Schlage site excavations recovered a modest lithic assemblage of approximately 200 artifacts including chipped stone and groundstone items. Raw materials are predominantly local but some exotic chert is present in the collection. This poster presents the results of an analysis of the Schlage site lithics and compares the assemblage to other reported Eastern Oneota assemblages.

Cruz Guzmán, Carlos, Silvia Nava (Centro INAH Sonora), Jessica Cerezo Roman (University of Arizona), James Watson (University of Arizona) and Elisa Villalpando (INAH Sonora)

[147] *Cremaciones de Tradición Trincheras*

El conocimiento de las prácticas funerarias de los grupos prehispánicos de la Tradición Trincheras se ha enriquecido recientemente de manera notable con las intervenciones derivadas de dos rescates: el primero en un cementerio de cremaciones secundarias y el segundo en un predio urbano del pueblo actual. La información obtenida nos permite ahondar en el conocimiento de las condiciones de salud de las comunidades agricultoras del Desierto de Sonora, así como proponer algunos rituales asociados con el tratamiento mortuario.

Cucina, Andrea (Universidad Autonoma de Yucatan) and Vera Tiesler (Universidad Autonoma de Yucatan)

[56] *Mortuary Paths and Ritual Meanings Related to Maya Human Disposals in Caves and Cenotes*

The ancient Maya conceived dry caves and cenotes as

sacred spaces and entrances to the Xibalba, thresholds that communicated the living with the underworld. Here, we reconstruct population profiles, vestiges of posthumous body manipulation and mortuary pathways in 21 human assemblages from Maya caves, shelters, and cenotes, putting emphasis on the Sacred Cenote of Chichen Itzá. Combining anthropological, taphonomic and contextual data sets, we highlight different ritual conducts, target populations for wet and dry cave deposits, pose new questions regarding the role of caves as human depositories and propose some ideas for future recovery techniques and analysis of human remains.

Cucina, Andrea [116] *see* Sierra Sosa, Thelma

Cullen Cobb, Kim [193] *see* Beaubien, Harriet F.

Culleton, Brendan (University of Oregon), Douglas Kennett (University of Oregon), Barbara Voorhies (University of California, Santa Barbara) and John Southon (University of California, Irvine)

[88] *Bayesian Analysis of AMS Radiocarbon Dates from a Prehistoric Mexican Shellmound*

We establish a high precision AMS radiocarbon chronology for the Tlacuachero shellmound (Mexico) within a Bayesian statistical framework. Carbonized twigs were sequentially selected from well-defined stratigraphic contexts based on iterative improvements to a probabilistic chronological model. Analytical error for these measurements is ± 15 -20 14C years. This greater precision and the absence of stratigraphic reversals eclipses previous radiocarbon work at Tlacuachero. We develop a chronological framework for a sequence of three clay floors (4960-4270 cal BP) and determine that the bedded shell that dominates these deposits accumulated rapidly during two episodes from 5050-4840 cal BP (2m) and 4380-4230 cal BP (3.5m).

Culleton, Brendan [108] *see* Gilmour, Daniel M. **[88]** *see* Kennett, Douglas J.

Culley, Elisabeth (Arizona State University), Gabriel Popescu (Arizona State University) and Geoffrey Clark (Arizona State University)

[108] *The Compositional Integrity of the Tabun Facies & the Nature of Pattern in the Levantine Middle Paleolithic* The Levantine Middle Paleolithic lasted approximately 200 kyr (c. 260-50 kya), extending from OIS 7 through the early part of OIS 3. Regional systematics are primarily based on three facies that were first defined by Garrod for the 'type site' of Tabun Cave, and yet these facies may not capture variation found in other Levantine assemblages. Here we examine the compositional integrity of the Tabun facies using a series of quantitative analyses on collections from 56 levels and 19 different sites to show that variability is often inconsistent with and can be masked by the classification system.

Culley, Theresa [119] *see* Thompson, Kim M.

Culver, Emily (University of Cincinnati) and Ken Tankersley (University of Cincinnati)

[124] *Chronology and Paleoenvironmental Record of Newark's Great Circle*

Newark is the largest complex of geometric earthworks in

the world. Despite their size and international recognition, its precise age and paleoenvironmental context has never been determined. Recent AMS radiocarbon dating, X-ray powder diffraction (XRD), magnetic susceptibility, and particle size analysis of sediments from the anthropogenic ditch of the Great Circle, a ceremonial center approximately 365.76 meters in diameter, provide important new insights into the paleoenvironmental and temporal records associated with the construction of the Newark Earthworks.

Cummings, Linda Scott (PaleoResearch Institute, Inc.) and Melissa K Logan (PaleoResearch Institute, Inc.)

[66] *From the Table to the Grave: Artifact Uselife and FTIR*

Application of infrared spectroscopy for examining organic residues on a variety of artifacts recovered from archaeological contexts can address questions regarding artifact function, such as for daily, special, and ceremonial activities. Information obtained can shed light on ceremonial use and/or reuse of artifacts, as well as the role of specific organic materials in the domestic and religious practices of past populations. Understanding artifact utilization in conjunction with artifact uselife aids archaeologists in understanding activities and processes for ritual and non-ritual settings.

[84] *Discussant*

Cummings, Linda Scott [66] *see* Niessner, Janet C.

[66] *see* Varney, R. A. **[66]** *see* Gear, W. Michael

Cunnar, Geoffrey (WCRM), Bill Schindler (Washington College), Ed Stoner (Western Cultural Resource Management), Charles Wheeler (Western Cultural Resource Management) and Mark Estes (Western Cultural Resource Management)

[61] *Replication of a Paleoarchaic, Levallois-like reduction technique in the Great Basin, trying to better understand one of America's earliest reduction strategies* We employed experimental archaeology to understand a Levallois-like (Cascade Technique) reduction strategy in the Central Great Basin. Our experiments focused on the removal of a Levallois flake from local basalt and were designed to elucidate the relationship between nodule morphology and Levallois flake. We also addressed issues of skill, intent and use to improve the recognition of residues from and overall understanding of this distinct early New World technology. The experiments demonstrated that local basalt is of sufficient size to produce Levallois flakes. They also have provided keys to recognizing and differentiating this technology from a bifacial trajectory.

Cunnar, Geoffrey [262] *see* Stoner, Edward J. **[262]** *see* Estes, Mark B.

Curet, L. Antonio [204] *see* Pestle, William J.

Curry, Ben (University of Arizona)

[30] *Butchery Patterns of Alta California*

Starting with the work of Sherry Gust on the Onterveros Adobe butchery patterns have been focused on in California Spanish Colonial Zooarchaeology. Analysis of element and cut distribution, and burning have been common since this work, however attempts to

reconstruct specific cuts and the butchery process itself have been rare. Studying these aspects of butchery form an important part of understanding the sociopolitical dimensions of food distribution in a multi-ethnic colonial setting and provide a means of examining the dynamics between colonially introduced and maintained aboriginal butchery practices.

Curtis, Jason H. [203] *see* LeBlanc, Steven A.

Cuthrell, Rob (UC Berkeley)

[222] *Archaeological Research on Indigenous Landscape Management in Quiroste Valley, California*

As part of a broader research project on indigenous landscape management in central California, our team conducted three field seasons of excavation at Late Period village site CA-SMA-113 in Quiroste Valley, CA. Excavation methods employed an intensive soil sampling strategy for the recovery of macrobotanical, faunal, and microbotanical remains, which will be used to test our indigenous pyrodiversity model. An overview and preliminary results of excavations will be presented.

[222] *First Chair* **[222]** *see* Evett, Rand R. **[250]** *First Chair*

Cutler, Joanne [167] *see* Fitzsimons, Rodney D.

Cutright, Robyn (Centre College)

[125] *Comparing Chimú and Inka Strategies at Farfán and in the Jequetepeque Countryside*

In her comparison of Chimú and Inka occupations at Farfán, Mackey (2006) posits that, while the Chimú imposed their architectural canons and administrative rule on the site, the Inka invented a new, conciliatory style that incorporated local architectural elements and focused on ideological as well as economic control. This paper draws on public and domestic architecture at Pedregal, a small agricultural village near Farfán, in order to compare the impact of Chimú and Inka conquests on the Jequetepeque countryside in the context of the strategies adopted by these empires at Farfán.

[125] *First Chair*

Cyphers, Ann (IIA-UNAM)

[182] *Early Olmec communal spaces*

It is well-known that Middle Preclassic La Venta's great plaza with its impressive stone monuments and mounds served as a communal space where messages about the cosmos were transmitted to large congregations of people attending special events and ceremonies. However, since Early Preclassic San Lorenzo does not show a similar design, the question arises whether public plazas were present there. This paper will explore archaeological evidence regarding the changing blueprint of the site, including possible pre-apogee communal spaces, trends in plateau construction and spatial organization, as well as complementary strategies for public experiences.

Czaplicki, Jon (Bureau of Reclamation) [251]

Discussant [118] *Discussant [251]* *Second Organizer*

da Silva, Graziela [265] *see* Evans, Amanda M.

Daehnke, Jon (Stanford University)

[197] *Using the Master's Tools: Activism in the Midst of*

Colonial Legacy

Audre Lorde wrote that "The master's tools will never dismantle the master's house," and as Les Field notes this presents a challenge to those anthropologists interested in restorative justice. In North America (and elsewhere) the discipline of archaeology historically was tied to the colonial project and played a central role in appropriating the pasts of descendant communities. Archaeology helped to create the very reasons why "restorative justice" is now needed in the present. This paper will explore whether archaeology -- after a rather questionable history as a discipline -- can now serve as a tool for "restorative justice."

Dahlin, Bruce [225] *see* Bair, Daniel A.

**Dahlstrom, Kristy (University of Connecticut),
Veronica Waweru (Research Affiliate, National
Museums of Kenya) and Cynthia Peterson
(University of Connecticut)**

[133] *Thermoluminescence dates from the Pastoral Neolithic GvJm Lukenya Hill site, Kenya*

Eastern Africa Holocene herders exploiting seasonally available resources provide data useful for models of food production among stateless mobile societies. The understanding of these parameters is however impeded by poor chronological resolution. Lukenya Hill GvJm 47 documents full-fledged pastoralism, a wide variety of cultural remains and activity areas. Thermoluminescence dates on pottery sherds have been reached using the additive dose method. The dates presented here from different depths show that the site was used seasonally for extended periods in the late Holocene. The age of the site and seasonal occupation suggest adaptation to ITZC weather patterns of the Later Holocene.

Dahlstrom, Kristy [208] *see* Waweru, Veronica

Dale, Emily (University of Nevada-Reno)

[208] *Ordinance 32 and the Creation of Aurora's Chinatown*

Aurora, one of Nevada's first mining boomtowns, contained one of the state's earliest Chinese populations. Ordinance 32, an 1864 by-law, relegated the Chinese to the northwest side of Aurora, ostensibly creating a Chinatown. The implementation of Ordinance 32, however, is questionable. The author will examine plat maps of Aurora, the 1864 tax assessment for Esmeralda County, reports from local contemporary newspapers, and the results of a 2010 survey of the town to test the amount of effort put forth to enforce and maintain Ordinance 32 and to interpret the ways in which the Chinese population reacted to the law.

**D'Alpoim Guedes, Jade (Harvard University) and
Robert Spengler (Washington University in St. Louis)**

[111] *Sampling Strategies in Paleoethnobotanical Analysis*

A well developed sampling strategy is essential to any archaeological investigation. It provides the basis on which archaeobotanists can answer questions about patterning of plant remains across sites, within sites and to document change in ancient landscapes. This paper reviews current methods of sampling in archaeobotany for macrobotanical remains as well as phytoliths, starch and pollen. On site and off site sampling in commonly

encountered contexts are discussed along with the integration of archaeobotanical sampling into the scope of regional analysis and survey.

Damp, Jonathan, Amelia Sánchez Mosquera (Museo del Banco Central del Ecuador, Guayaquil), Angelo Constantine Castro (Amelia Sánchez, Inc.), Nicholas Damp (University of Colorado) and Patricia Vargas Sánchez (URQO)

[103] *The Chorrera House: Los Samanes and the Late Formative of Ecuador*

The late Formative Chorrera culture of coastal Ecuador is known for its ceramic technology and speculated relationships with Olmec and Chavín. The excavation of a Chorrera house at the site of Los Samanes in the lower Guayas Basin (Guayaquil) provides the first example of vernacular house morphology. Multivariate analysis of the Chorrera house assemblage is applied to generate a view of daily practice in the late Formative. Results from the household analysis and a GIS based settlement pattern analysis indicate that the development of socio-economic transformations in the Ecuadorian Formative is rooted in domestic practice and economic pursuits.

Damp, Nicholas [103] see *Damp, Jonathan E.*

Daniel, Randy (East Carolina University) and Albert Goodyear (South Carolina Institute of Archaeology and Anthropology)

[120] *North Carolina Clovis*

The recognition of Clovis in North Carolina has largely come from a statewide fluted point survey. Studies have focused on style, raw materials, and geographic distributions. One important outcome has been the recognition of the Redstone type that likely just postdates Clovis. Raw material patterns suggest a single macroband centered on the fine-grained metavolcanic stone of the Uwharrie Mountains in the Piedmont. To the south, good tool stone is lacking until reaching the Allendale cherts along the Central Savannah River. Presumably, metavolcanic Clovis points observed in South Carolina represent the southern extent of movement away from the Uwharries.

Daniel, Tootsie [259] see *Smalldon, Sue S.*

Darling, J Andrew (Gila River Indian Community) and B. Sunday Eiselt (Southern Methodist University)

[18] *More Uses of the Past: Archaeology in the Service of the Tribe*

"[I]nterpretations, or uses, of the past are seldom value neutral." Don Fowler's oft-cited 1987 article, *Uses of the Past: Archaeology in the Service of the State*, deserves the status of seminal work. Fowler illustrates the manner in which nation-states control their past. Advances in tribal archaeology in the U.S. and Mexico illustrate his point, but not simply as exemplars of the usurpation of indigenous history. Archaeological futures reside in the "...critical awareness of all factors in the doing of archaeology..." including the explication of "real" Native histories and the roles that Tribes have come to play.

Darling, J. Andrew [139] see *Wright, David K.*

Darnell, John (Department of NELC, Yale University)

[12] *The Ostrich in Egyptian and Nubian Imagery*

A solar symbol in Egyptian iconography, by the early fourth millennium BCE the hunt of the ostrich is an elite activity in which human hunters realized the concept of the imposition of order over chaos. Ostrich hunting by desert dwellers, and delivery of ostrich feathers into the Nile Valley, mirrored the pacification of the solar eye goddess, who returns from the southern deserts into the Nile Valley at the time of the longest day and the coming of the Nile Inundation. Archaeological and epigraphic evidence for such rituals reveal interaction between Nilotic Egyptians and desert populations during a liminal period.

Darwent, Christyann (U of California, Davis)

[126] *Evolution of Pinniped Hunting: A View from the Top*

Detailed zooarchaeological analyses of pinniped remains were hit and miss prior to the late 1980s, and for those who undertook such studies, they consisted of single assemblages/sites at best. Lyman's "Prehistory of the Oregon Coast" (1991), and his various articles surrounding this publication influenced a generation of zooarchaeologists to tackle such issues as density/utility indices, patterns of butchery, prey demography, biogeography, and pinniped conservation. Following his pioneering research, I present an evolution of pinniped hunting in the circumpolar region and specifically focus on how the shift to walrus hunting signaled a major change in social organization across the Arctic.

[126] *Second Chair* **[126]** *Third Organizer*

[181] see *Bencze, Jennifer M.* **[159]** see *Foin, Jeremy C.* **[159]** see *Hoffecker, John F.* **[159]** see *LeMoine, Genevieve*

Darwent, John, Tim Carpenter (ArchaeoMetrics Inc.) and Richard Deis (AECOM)

[256] *Prehistoric lithic recycling in the lower Sacramento Valley, California*

There is a notable lack of stone resources in the lower Sacramento Valley, and with the exception of gravels from a few Pleistocene terrace remnants, all stone—whether for tools or hearths—needed to be imported. The prehistoric response to this deficit was partly to use less stone, as quantities of stone artifacts were low, but also to engage in extensive reuse and recycling of stone materials. Here we explore these solutions enacted by the occupants of components from early, middle, and late prehistoric periods from three sites excavated by AECOM in Sacramento County, California.

Darwent, John [159] see *LeMoine, Genevieve*

Daughtrey, Cannon [80] see *Natoli, Amelia M.*

Davenport, Bryce (Brandeis University)

[51] *Caves, courts, and countrysides: spatial rhetoric in West Mexican colonial manuscripts*

The imposition of Spanish legal authority over the myriad polities of Postclassic Mesoamerica underscored the vast differences in their understandings of territoriality. One of the best examples of these fractures comes from the Tarascan or Purépecha kingdom of Michoacán, the peaceful surrender of which initially preserved the indigenous political structure and led to a brief period of parallel governing bodies. In this paper, I explore graphic and phonetic techniques used to negotiate the space of and for historical narratives, land claims, and political

legitimacy in West Mexican colonial documents such as the Lienzo de Jicalán and the Relación de Michoacán.

Davenport, James (Tulane University) and Kit Nelson (Tulane University)

[142] *Compositional Analysis Using pXRF of Ceramic Pastes and Pigments from the Late Intermediate Period of the North Central Coast of Perú*

The Late Intermediate Period was a time of social change in the North Central Coast of Perú, indicated by the presence of material artifacts from three cultures, the Chancay culture, the Chimú empire from the north, and the Inca empire from the south. Using the relatively new technology of portable X-Ray Fluorescence, we aim to add clarity to the complex political upheavals experienced by this region during this time period by examining ceramic pastes and pigments found at five different sites as well as determine the effectiveness of pXRF for this application.

Davenport, James [63] see Nelson, Kit

Daverman, Blair M. [152] see Torres-Rouff, Christina

David, Robert (University of California, Berkeley)

[158] *The Archaeology of Myth: Rock Art, Ritual Objects, and Sacred Landscapes of the Klamath Basin*

Recent research in the Klamath Basin has shown that rock art and landscape are intimately connected, mutually informed by indigenous notions of sacred places. Modeling this landscape has been possible through an understanding of Klamath–Modoc myth, leading some researchers to interpretations of the rock art that are largely in agreement with Klamath–Modoc spiritual beliefs. I take this approach a step further and propose interpretations for specific rock art images and ritual objects, arguing that myth harbors the fundamental logic that underpinned shamanic rituals that led to the creation of Klamath Basin rock art symbols and ritual objects.

Davies, Gavin (University of Kentucky), Willem VanEssendelft (Harvard University) and Scott Hutson (University of Kentucky)

[38] *Migrants or Misers? Investigating function, duration and prosperity at mound groups along the Uci to Kansahcab sacbe in Northern Yucatan*

The construction of an 18 km long sacbe linking the sites of Uci and Kansacab in Northern Yucatan is hypothesized to have had a range of social, political and economic impacts on communities within its vicinity. In attempting to discern the nature of these impacts, intensive archaeological testing was conducted at several mound groups, including a ballcourt, within Uci's hinterland. A dearth of ceramics reoriented field methods and suggested unanticipated hypotheses regarding site function, duration, and prosperity. In this paper the authors present spatial patterns in artifact and soil chemistry data and discuss methodology, interpretations and future directions.

Davila Cabrera, Patricio (INAH)

[21] *Los xi'oi de Guadalcázar, S. L. P., y su relación con los grupos de la región Huasteca*

En esta ocasión comentaré, desde el punto de vista de la arqueología, sobre algunos datos relativos a la

interrelación entre los grupos teenek y nahua, quienes en el siglo XVI integraban los principales grupos huastecos, y los xi'oi (pames), sus vecinos al oeste. Entre los grupos nómadas del semidesierto potosino y la región Huasteca se encuentra la parte norte del territorio pame, esta fracción de las culturas otomíes alcanzo un importante desarrollo antes del primer milenio, avance que parcialmente conservaba al momento de la conquista europea, entonces gradualmente desaparecen trabajando en las minas.

Davis, Edward Byrd [108] see Gilmour, Daniel M.

Davis, Loren [262] see Jenkins, Dennis L.

Davis, Michael (University of Kansas), Thomas Wake (Cotsen Institute of Archaeology, UCLA) and Tomás Mendizabal (Patronato Panamá Viejo)
[67] *Towards a settlement chronology for Bocas del Toro, Panama*

Recent survey and excavation in Bocas del Toro Province, Panama, has provided a great deal of new data concerning settlement patterns and chronology. Approximately 60 ostensibly portable basaltic boulder mortars have been recorded at various localities on Isla Colon, an island with an entirely karstic geology. Many of these artifacts are associated with archaeological deposits of carbon and ceramics. Survey, radiocarbon, and stylistic data are used to refine a settlement chronology for Isla Colon and the surrounding coastal region of Bocas del Toro.

Davis, Sara (Archaeological Investigations Northwest, Inc.)

[160] *Reduction Technologies at the Stockhoff Basalt Quarry in Northeastern Oregon*

The Stockhoff Basalt Quarry (35UN52) is located on Craig Mountain in northeastern Oregon. Archaeological work conducted in limited portions of the site since the 1950s has documented the quarry's use as a toolstone resource since the early Holocene. Three excavations in particular have explored the reduction technologies discernible in the artifact assemblages. Recent investigations in 2009 and 2010 provide an extensive look at new data from site 35UN52 and from over 230 newly recorded archaeological sites nearby. These data are analyzed with respect to past studies regarding lithic reduction technologies at this extensive quarry site.

Davis-King, Shelly (Davis-King & Associates)

[230] *Somewhere Under the Rainbow: Trails From the Great Basin to the West*

This paper explores ethnic boundaries in the Tuolumne watershed (Yosemite region) and how these are related to seasonal movements and ranges of wildlife, plant populations, and ethnohistoric access to those resources. Resources influenced range and movement of people and their geopolitical boundaries were (are) crossed and serviced by trails. Some idea of trail function through time can be gained by characterizing the boundaries within which the trails occur. Forty-four Indian trails were documented that connect places between Yosemite and the Great Basin, provide a non-static look at mountain transportation networks, and for Billy, describe How to Get There From Here.

Dawson, Peter (Archaeology Dept. University of Calgary), Elizabeth Dixon (University of Calgary), Natasha Lyons (University of Calgary) and Lisa Hodgetts (University of Calgary)

[159] *Using GIS and social media to explore the relationships between archaeology and Inuit oral history in the Kivalliq Region, Nunavut, Canada.*

With the cooperation of Paatlermiut Elders from the community of Arviat, Nunavut, a large GIS database of Inuit Qaujimajatuqangit' has been constructed, which uses social media sites such as Facebook to provide opportunities for interactivity and user feedback. This paper explores how oral histories, place names, and traditional land use information contained in this GIS/social networking system are currently being integrated with archaeological data from the Kivalliq Region for the purposes of research and education.

Dawson, Peter [159] *see Pickering, Sean J. [159]* *see Hodgetts, Lisa [146]* *see Levy, Richard M.*

Day, Cynthia [5] *see Day, Zachary R.*

Day, Zachary (University of Kansas), Paul Thacker (Wake Forest University), Cynthia Day (Wake Forest University) and Carlos Pereira (SMPHAC – Archaeology Department, Camara Municipal de Rio Maior)

[5] *Clay Sourcing and Ceramic Production at Iron Age Castro de São Martinho, Portugal*

Iron Age archaeological deposits at the Portuguese hillfort of São Martinho reflect an increase in subsistence and secondary goods production as exchange and redistribution networks intensified during the first millennium BCE. X-ray diffraction, visual microscopy, and magnetic studies detail the mineralogies of twelve locally-available clays from six major geologic surface formations. Methodological protocols were designed to control for particle inclusions and changes in mineralogy resulting from firing and burial environments. Slipped fine ware and mass-produced thick ware sherds were analyzed with the aim of understanding the changing role of Castro de São Martinho in Iron Age exchange networks.

de Alarcon, Tessa (UCLA/Getty Master's Program in Conservation)

[220] *Improvements in the histological analysis of archaeological and cultural materials using photoluminescent semiconductor nanocrystals: a case study*

This study explores the potential of biochemical assays using quantum dots (Qdots nanocrystals) as biomarkers for the identification and mapping of proteinaceous binding media in paint cross sections. Specimens from selected wall paintings and experimentally prepared samples of known composition based on historic wall painting stratigraphy were tested. The performance of the Qdot nanocrystals was compared to traditional fluorescent dyes through analysis and examination using polarized light microscopy as well as variable pressure scanning electron microscopy.

De Anda Alaniz, Guillermo (Universidad Autonoma De Yucatan)

[266] *Life And Death in the Archaeological Record of*

Caves In Yucatan.

During the last six years, the research project "The Cult of Caves and Cenotes of Yucatán", has recorded over 30 dry and flooded caves. The archaeological record exhibits a big variety of ritual expressions related with the most significant form of complementary opposites: life and death. Through this work we present archaeological evidence of ritual activity in the form of human skeletal remains, rock art, cave shrines, and cave modifications and ceramics not previously reported for Yucatan.

de Kerckhove, Diane [167] *see MacDonald, Brandi Lee*

De la Rosa, Lucio [269] *see Rodriguez, David M.*

De Leon, Jason (University of Michigan), Robyn Dennis (CAST University of Arkansas), Aaron Naumann (University of Washington), Consuelo Crow (University of Washington) and Michael Wells (MWells Photography)

[124] *"By the Time I get to Arivaca": A Phenomenological Approach to Modern Undocumented Migration in Southern Arizona.*

Each day hundreds of undocumented migrants from Latin American attempt to cross into the U.S. on foot through the Sonoran Desert of Arizona. Despite great public and academic interest in this process, little empirical data on the physical act of desert crossing exist. Here we present data from the Undocumented Migration Project, a long-term anthropological study of this clandestine behavior. Using a combination of archaeology, ethnography, GIS, and digital media we employ a phenomenological approach to provide insight into the ways in which migrants experience crossings in Southern Arizona, as well as the archaeological fingerprint that this behavior leaves behind.

De Leon, Jason [154] *see French, Kirk D.*

De Lucia, Kristin (Northwestern University)

[198] *Why households choose to produce surpluses: An Early Postclassic perspective on household strategy and surplus production in Xaltocan, Mexico*

While archaeologists have traditionally studied surplus to understand the emergence of sociopolitical complexity and social inequality, we must also look at surplus from a "bottom up" perspective and consider the role of surplus production in ordinary households. This paper looks at small-scale production of craft and food products in Early Postclassic households to understand how commoner households distribute economic resources. Does surplus production result in greater economic or political success for individual households? How does the decision to produce a surplus influence social organization (including gender and age roles) as well as broader economic systems?

[198] *Second Organizer*

Deal, Michael (Memorial University of Newfoundland)
[10] *The Direct Historical Approach in North American Ethnoarchaeology*

The direct historical approach has a longstanding and sometimes controversial history in archaeological interpretation. Evidence from this and related approaches, such as ethnohistorical reconstruction, historical linguistics, and native folklore is widely

employed today by North American archaeologists. It is also commonly held that ethnoarchaeological models are most valuable when they can be linked through historical documentation to past cultures in the same region. The direct historical approach, where applicable, can provide a reliable form of analogical reasoning in ethnoarchaeological studies. This paper uses recent North American case studies to revisit the role of the direct historical approach in ethnoarchaeological research.

[10] *First Chair*

Dean, Emily (Katzie Development Corporation)

[29] *Delineation Of Site Chronology And Spatial Components Using Macroscopic Lithic Analysis At DhRp-52*

This presentation summarizes results of a stone tool analysis from site DhRp-52 to determine differences and similarities between its spatial and temporal components. DhRp-52 was an inland/riverine settlement that spanned approximately 2,500 years of occupational history contemporaneous with the Old Cordilleran Culture to the Locarno Beach Phase. My research analyzed tools to distinguish site components and structural features through time and in space, assessed similarities and differences between structures and non-structural areas, evaluated the presence of three temporal components at the site, interpreted site use through assemblage structure variation, and attempted to understand how DhRp-52 fit within the regional chronology.

Dean, Emily (Southern Utah University) and Barbara Frank (Southern Utah University)

[166] *A Public Private Partnership: Community Archaeology at the Little Rabbit Site in Kanab, Utah*
In 2008 a developer in Kanab, UT contacted us about studying and protecting the Ancestral Pueblo sites on his land. We subsequently collaborated with the landowner and an array of other parties, including the chamber of commerce, local schools, a nonprofit archaeology foundation, the Southern Paiute, and federal and state agencies in order to run an archaeological field school. The resulting project contributed to our understanding of the Virgin Anasazi as well as fostering friendly cooperation between public and private agencies in a region where local distrust of 'government' is not uncommon.

[166] *First Chair*

Dean, Jeffrey (University of Arizona)

[199] *Environment, Human Behavior, and Demography in the Prehistoric Southwest*

Archaeological investigation of human ecology involves assessing changing relationships among environment, culture, and demography. To better understand the role of agriculture in these interactions, weaknesses in the study of these processes must be rectified. Among these are problems in reconstructing past environmental variations and relating reconstructions to one another and to past human behavior and demography. Different paleoenvironmental techniques reconstruct different aspects and periodicities of environmental variation that must be reconciled to produce a more complete picture of past environment-agriculture interactions. Furthermore, modern Native populations' apparently anomalous agricultural success must be understood to

fully appreciate prehistoric farming in the region.

[99] *Discussant*

Dean, Rebecca

[53] *Sheep Kills and Shell Counts: The Historical Ecology of Contemporaneous Foragers and Farmers in Neolithic Portugal*

The Mesolithic to Neolithic transition in Portugal (8,000-4,500 cal BC) was protracted and complex, as shellfishing/hunting/gathering societies continued in estuary environments long after farming economies dominated most of the coastal regions of the Iberian peninsula. As seen through the lens of zooarchaeology, the landscape use of foragers in estuaries was radically different from that of farmers farther inland and on rocky coasts. Nonetheless, both farming and foraging societies show similar adaptations, including reliance on wild foods and decreasing foraging efficiency relative to earlier periods. Landscape change – possibly anthropogenic – led to the eventual abandonment of foraging economies in Portugal.

[180] *see Lexvold, Angela*

Deely, A.E [218] see Blackwell, Bonnie A. B.

deFrance, Susan (University of Florida) and Sofia Chacaltana (University of Illinois-Chicago)

[227] *The Inca Empire and Local Culture in Far Southern Peru: Settlement at Tambo Tacahuay*

Inca settlement of southern coastal Peru at Tambo Tacahuay documents empire expansion and the subjugation of the local Chiribaya and/or Gentilar populations. Approximately two kilometers inland the Inca constructed a small stone-masonry tambo in the indigenous community. Our research demonstrates Inca success in co-opting and amplifying the local agricultural system. Additionally, the Inca appropriated local ancestors through the introduction of highland chulpas for burial. However, our work also demonstrates the difficulty in discerning how Inca activities altered non-agricultural systems of production and the local political structure. We discuss our preliminary findings from Inca structures, domestic terraces, and tombs.

DeFrancisco, Nicole (University of California Riverside)

[148] *Water, Blood and Life: An analysis of Late Classic lowland Maya water management at the local level*

While a fair amount of literature documents how the elite Maya at large cities such as Tikal or Copan dealt with issues of water management, little is understood about the way these practices were managed at smaller, rural, farmstead sites. This paper will investigate and analyze the water management practices exhibited by the rural, common ancient Maya during the Late Classic period in the Lowlands when and where land and water resource availability were the scarcest. This paper will also discuss the possible implications of these practices on social and political organization at the local level based on archaeological evidence.

DeGayner, Jake [248] see Hubbard, Duane C

Degryse, Patrick [100] see Lankton, James W

Deis, Richard (AECOM)

[256] *Occupation and Settlement Patterns Along the Sacramento River*

Numerous sources of data have been gathered from well stratified sites that represent approximately 5000 years of occupation along the Sacramento River. A model of occupational seasonality will be developed using multiple classes of data and compared with previous research within a regional context. Finally, this model will examine the degree of sedentism and implied changes in social structure and complexity through time.

Deis, Richard [256] *see Darwent, John*

DeJongh, Jennifer [137] *see O'Brien, Helen L.*

Dekle, Victoria (University of Kentucky)

[82] *New Considerations of Old Distribution: Site Occupations at the Deptford Site (9CH2), Chatham County, Georgia*

Deptford (9CH2) is a large multicomponent prehistoric site located near Savannah, Georgia that was excavated by Catherine McCann, Joseph Caldwell, Antonio Waring and Preston Holder between 1939 and 1942. Although the site is often cited as an important Woodland site on the southern Atlantic coast, specific information about the site and the W.P.A. excavations is limited. The entire Deptford collection was analyzed in the 1990s, significantly expanding our understanding of the site and creating opportunities for further investigation. This poster will present the results of a site-wide spatial analysis that demonstrated the need for more fine-grained analysis.

Delaney-Rivera, Ph.D., RPA, Colleen [64] *see Hanes, Erin Saar*

D'Elia, Ashley [137] *see Tackett, Stephanie T.*

DeMaio, Justin (Desert Research Institute/UNLV)

[163] *Site Type Variation and Prehistoric Landscape Use across the Nevada Test Site*

The Nevada Test Site (NTS) is a 1,360 mi² plot of land in southern Nevada most widely known for being the site of atomic testing throughout the latter half of the 20th century. The Desert Research Institute (DRI) has managed the cultural resources on this land since the 1970's and has recorded evidence of a long history of inhabitants extending back to Paleoindian occupations. Geographic Information Systems (GIS) can be a useful tool when exploring the relationship between site location and landscape features such as hydrology, elevation, vegetation and geology.

Demarest, Arthur (Vanderbilt University)

[116] *International Exchange, State Controlled Craft Production and Political Hegemony at Cancuen: Changing Classic Maya Political Economy on the Eve of Collapse*

In the late eighth century there was a transformation of Cancuen, the great Pasión river port city and highland/lowland gateway. Earlier, more typical, Classic Maya economy, political structure, and residential patterns shifted to internationalism in material culture and long distance exchange, complex political hegemony, a huge administrative/ritual, largely non-residential palace, "hyper-segmented" lithic production, and direct state or

noble supervision of a jade workshop and of the ports of Cancuen, the latter being the economic engine of this head-of-navigation transport center. New evidence is presented on this eighth century change and its implications for theories of Maya economy and political collapse.

[116] *First Chair [191]* *see Suasnavar, Jose*

Demoulin, Thibault [162] *see Wagner, Ursel*

Dempsey, Patrick (avocationalist)

[240] *Shoshonean Votive Objects Along the Southern California Bight*

While surveying dry lake shores, I stumbled upon a 1900 era Death Valley mix of both historic and prehistoric religious vessel fragments leading to a different Death Valley site exhibiting only prehistoric fragments. An Inyo Mountains site played out today with modern vessel fragments. 1850 mission era dinnerware sherds from an offertory floor pit in the Indian barracks of La Purisima Mission discovered unstudied in a mission display case. A mission era glass sherd from a house floor offertory pit on San Clemente Island. Then, soapstone vessel fragments dated 1800 BP from the Landing Hill, Seal Beach, California.

Dennett, Carrie (University of Calgary) and Geoffrey McCafferty (University of Calgary)

[183] *Pottery and People: Reassessing Social Identity In Pacific Nicaragua*

Archaeological reconstruction of social identity in pre-Columbian Pacific Nicaragua has traditionally been based on ethnohistoric sources that suggest Chorotegan-speaking groups replaced local indigenous culture with new people, language and material culture ca. A.D. 800. Support for this reconstruction is typically based on the introduction of a white-slipped polychrome tradition that appeared around this time. However, recent research demonstrates that these "new styles" were likely not the result of aggressive population replacement and far-flung external influences. Instead, these changes seem to be the result of incremental internal development influenced by increased contact and exchange with southeastern Mesoamerican groups, particularly from Honduras.

Dennett, Carrie [183] *see McCafferty, Sharisse D.*

Dennis, Robyn [124] *see De Leon, Jason P.*

DeOliveira, Lauren [105] *see Kuiken, Garrett*

Derr, Kelly (Washington State University)

[192] *Intensifying with Fire: Pre-Contact Anthropogenic Fire and Landscape Management in the Gulf Islands, British Columbia*

Fire, both natural and anthropogenic, has played a role in shaping vegetation communities in the Pacific Northwest of North America. Determining the role of human-set fires has been difficult in part because the ecological footprint of human-environmental interaction is smaller than the regional fire record. Methods and data presented here demonstrate the importance of multi-scalar approaches to identifying anthropogenic fire events. On and off-site fire history reconstructions, considering both fire occurrence and charcoal morphology, from Galiano Island in the southern Gulf Islands, elucidate human

involvement in shaping local pre-contact landscapes.
[192] *First Chair*

Des Lauriers, Matthew (Cal State Univ Northridge)
[11] *The Deep Waters of Fishing Technology: Terminal Pleistocene Shell Fishhooks from Isla Cedros, Mexico*
The emergence of new forms of fishing tackle (hooks, nets, etc.) employed by ancient indigenous populations of the Pacific Coast of North America has been of archaeological interest for decades. It has been assumed that the sequential appearance of these technologies observed in Alta California represented a process of invention and innovation encouraged by demographically driven intensification of fishing. New evidence from excavations in Baja California suggest that these technologies have a deeper history along the California coasts and provide alternative models to explain their use at different times and places in the history of maritime adapted populations.

Des Lauriers, Matthew [132] *see Brown, Sean H.*

Desentis, Cristina [224] *see Alvarez, Damian*

Deskaj, Sylvia (Michigan State University)
[255] *In Search of Origins: The application of Strontium isotope analysis along the eastern Adriatic*
Along the Adriatic coast during the Early Bronze Age "indigenous" and "foreign" cultural practices merged. The region can thus serve as a testing ground for the study of Balkan migration and "ethnogenesis". As part of the summer 2010 field season of the Shkodra Archaeological Project, land snail shells (n=10) were collected in Shkodra, Kosova, and Dalmatia, then analyzed at MIT's Laboratory of Earth, Atmospheric and Planetary Sciences. This analysis will lay the groundwork for future study of human bone. This paper presents the results of the Strontium isotope analysis, as well as the implications for further research in the region.

Desrosiers, Pierre [159] *see Gendron, Daniel*

Devault, Alison (McMaster University), Hendrik N. Poinar (McMaster University), Joseph H. Tien (The Ohio State University), David J.D. Earn (McMaster University) and David N. Fisman (University of Toronto)
[72] *Ancient DNA analysis of 19th century North American cholera*

Multiple pandemics of cholera reached North America during the 1800s, with devastating results. While much is known about the epidemiology of modern strains, the genetics of early pandemics remain a mystery. We present the first successful sequencing of *Vibrio cholerae* ancient DNA from the 1800s, from alcohol-preserved human medical specimens from mid-19th-century Philadelphia. Our findings reveal the identity of this early pandemic strain. With the advent of new ancient DNA technology, coupled with high-throughput sequencing, genomes of past pandemics are within reach. We analyze our sequences in a phylogenetic framework, offering insights into the evolutionary history of this significant pathogen.

DeWitte, Sharon (University at Albany, SUNY)
[16] *Sex and Frailty: Patterns from Catastrophic and*

Attritional Assemblages

In most modern populations, sex differentials in morbidity and mortality favor women. Recent research suggests that such differentials existed in the past, as prior exposure to physiological stress increased the risk of death for men more than for women during the Black Death (c. 1347-1351). This paper compares the sex patterns of stress and mortality in a catastrophic Black Death cemetery from London to those in an attritional assemblage wherein individuals died from numerous causes. The results, which reveal similarities between the two assemblages, are examined in light of what is known about gendered access to resources in medieval Europe.

Di Giuseppantonio Di Franco, Paola [10] *see Galeazzi, Fabrizio*

Dias, Adriana [213] *see Bueno, Lucas*

Diaz, Alejandra [176] *see Richards, Michael P.*

Dibble, H.L. [2] *see Zhou, Cathy XY*

Dick, Lyle [146] *see Levy, Richard M.*

Dickson, Michael [237] *see Littleton, Judith H.*

Diederichs, Shanna (Aztec Ruins National Monument), Gary Brown (Aztec Ruins National Monument) and Kay Barnett (Mesa Verde National Park)
[201] *Thirteenth-Century Social Identities in the Middle San Juan Region: A Comparison with Mesa Verde*
Local populations occupied great houses and other large sites in the Middle San Juan region during the 13th century, long after the demise of the Chacoan regional system. These people appear to share aspects of social identity with the Mesa Verde region to the north. Our paper attempts to better understand the nature of this identity through a comparison of high-visibility architectural features at Aztec Ruins, Salmon Ruin, and alcove sites at Mesa Verde. We conclude that 13th-century social identity was complex and multi-faceted, although many highly visible identity markers were shared broadly across the Four Corners area.

Diehl, Michael [139] *see Herr, Sarah A.*

Dierker, Jennifer [20] *see Balsom, Janet R.*

Dietler, Michael (University of Chicago) [24]
Discussant

Diez, Maria Luz (Arte Accion Copan Ruinas - Honduras)
[128] *Arqueología Infantil en una Comunidad Maya-Ch'orti'*
El Proyecto Arqueológico "Casa de los Sapos" surge como iniciativa de la Asociación Cultural Arte Acción (arteaccionhonduras.org), bajo el patrocinio de MACHI (machiproject.org) y la participación de los niños de La Pintada, comunidad Maya-Ch'orti' de Copán Ruinas. Aprendiendo las prácticas básicas de arqueología de campo, los niños descubren un mundo fascinante que les facilita la comprensión sobre los grandes hallazgos

existentes en su entorno, a la vez que les acerca a su propio y desconocido patrimonio histórico, abriéndoles un posible futuro a participar en la investigación arqueológica del Valle de Copan.

DiGangi, Elizabeth A. [121] see *McKeown, Ashley H.*

Dillian, Carolyn (Coastal Carolina University), Emmanuel Ndiema (Rutgers University) and David Braun (University of Cape Town)

[97] *Archaeological Obsidian Studies in Africa's Rift Valley*

The study of archaeological obsidian in Africa is still very much in its infancy. The Rift Valley, with a long antiquity of human occupation offers a unique laboratory for examining changing patterns of lithic material procurement and use through time. Though there remain many undocumented and uncharacterized sources of obsidian, preliminary studies have already demonstrated unusual procurement strategies – including the use of boats during the Holocene. This paper will review the history of obsidian studies in the Rift Valley and surrounding region and will discuss how lithic sourcing has been used to address questions about cognition and mobility in prehistory.

[97] *First Chair*

Dinkelaker, Jacob (College of Wooster)

[3] *Historic Preservation versus Development: A Case Study at the College of Wooster, Ohio*

In the past decade, the College of Wooster, has undertaken its largest campus improvement project to date, building three new structures and renovating several more on its suburban 240-acre college grounds. The historic structures have seen much of this change, many of them being updated with a mixture of modern and historic features. I discuss whether during this unprecedented construction, the College has been guided by a comprehensive historic preservation plan, or has operated without one, using heritage only when convenient. I explore how these decisions affect the integrity of the College of Wooster's National Register Historic District status.

Dixon, Christine (University of Colorado, Boulder)

[8] *Rethinking Southeast Maya Agriculture: A view from the manioc fields of Cerén, El Salvador*

The Loma Caldera volcanic eruption allowed for detailed preservation of Classic Maya commoner life at Cerén, including agricultural production. The discovery of extensive manioc cultivation has challenged our understanding of Cerén agriculture. This paper discusses the evidence for manioc as a staple crop at the site. The Cerén manioc fields were organized by various land-use lines and show evidence of apparently different cultivators. All of the excavated fields had been harvested just prior to the eruption, with a few areas partially replanted. Given such extraordinary preservation, this evidence has the potential to greatly contribute to Maya agricultural studies.

[250] *Discussant* **[8]** *First Chair* **[8]** see *Gonlin, Nan*

Dixon, E. James [89] see *Monteleone, Kelly R.*

Dixon, Elizabeth [159] see *Dawson, Peter C.*

Dixon, Helen (University of Michigan)

[152] *Commemoration at Khaldeh: Reconstructing Burial Practices in the Phoenician Homeland*

Our knowledge of Phoenician mortuary practice is mainly extrapolated from cemetery landscapes in Phoenician / Punic settlements throughout the Mediterranean, despite over 100 years of archaeologically obtained burial evidence from the Phoenician Levantine homeland. The problem is not a dearth of evidence, but obstacles like early record-keeping, political divisiveness, and war-damaged archives. The Khaldeh cemetery, uncovered during the 1960s Beirut airport expansion, contained 422 Iron I-II burials. Though never fully published, and despite data lost to the Lebanese civil war, an investigative analysis of its contents, layout, and evolution can aid in understanding Levantine Phoenician commemoration

Dobney, Keith (University of Aberdeen, UK)

[126] *Big questions and new techniques: The role of zooarchaeology in 21st century research agendas*

Zooarchaeology is still considered one of the newer disciplines within the multidisciplinary that is archaeology. A recent revolution in biomolecular and morphometric techniques is providing new opportunities and directions for zooarchaeological research in a way not imagined a decade ago and is challenging traditional views and approaches. There is, however, a growing schism between the so-called "traditional" and the "new" approaches that is in danger of isolating this important discipline from many broader research agendas. This paper aims to discuss this problem, and presents some examples of research which highlights the continuing contribution of zooarchaeology to the "bigger picture".

Dodd, Lynn (USC), Sarah Butler (University of Southern California), Ashley Sands (University of Southern California) and Lucy Harrington (University of Southern California)

[158] *Visualizing the Native American Cultural Landscape: Significant Advances in Imaging and Dissemination*

A non-invasive method of site documentation, known as reflectance transmission imaging, is linked to GIS database to capture superior data and create preservation advocacy tools. This imaging technique creates research-quality images that often enable elusive features to be seen. Where appropriate, these images can be made available worldwide through the internet-accessible InscriptiFact image database in support of cultural heritage interests, research, or preservation goals.

[220] *Discussant*

Dodd, Walter (CSU-Fresno)

[10] *Ethnoarchaeological Study of Trash Deposited on City Streets*

Over a 3-year period, I collected a large sample of refuse along roadways in one California suburban neighborhood. I first present interesting quantitative data about the composition of the discarded items. They are shown to be diverse, repetitive, and nonrandom in nature. Second, I give evidence for a shared mindset of organized behaviors and symbolic meanings that generate street-litter assemblages of this kind. Finally, I argue that a significant fraction of modern road trash is

still in systemic context and plays a central role in promoting the sale of illicit drugs.

Dodge, Robyn (The University of Texas at Austin)

[40] *Preliminary Analysis of Maya Household and Commoner Ritual Activities at Hun Tun, Belize*

This paper examines data collected at the Maya settlement, Hun Tun in northwestern Belize. Ancient Maya household archaeology, commoner rituals and settlement patterns are ongoing research topics at Hun Tun. Excavations during the 2010 field season focused on structures A1, B4, and two limestone megalith features. Construction chronology and information related to changing household dynamics will be discussed as well. Previous research at Hun Tun has yielded information pertaining to socioeconomic status and construction chronologies. Potential hypotheses related to these topics will be presented based on material culture assemblages. Preliminary ceramic analysis suggests primarily a Late Classic occupation.

Doelle, William (Desert Archaeology, Inc.)

[18] *Anthropology "Off the Grid"*

Historically, anthropology developed and has been practiced within the museum and academic worlds. These traditional networks and funding sources for anthropology are taken here as a rough analog to the energy grid that is the underpinning of our modern world. The American Southwest, in particular, has been a place where anthropology has flourished in multiple private, nonprofit institutions, outside the traditional settings for support and employment for anthropologists—that is, “off the grid.” The history of this private, nonprofit setting for anthropology is traced and evaluated.

[52] see Hill, Brett [79] *Discussant*

Doering, Travis (University of South Florida - AIST)

[157] *Formative Period Obsidian Analysis*

This paper reviews the methods and results from the analysis of the obsidian assemblage recovered from excavations at San Andrés, near La Venta, Mexico. The outcome suggests the consistent, long-term importation of material from three specific sources that entered the area from two distinctive routes. As a consequence of this initial examination, analysis of three other Formative period obsidian collections were conducted; two from the Southern Gulf Coast lowlands, and one from the Soconusco Coast. These results will also be briefly discussed.

[82] see Mcleod, Bart [157] see Collins, Lori D.

Dogiama, Triantafyllia (McMaster University)

[205] *Moving on: evidence for seasonality in Early Neolithic Northern Greece- the case of Mikri Volvi*

This paper will argue for intermittent site occupation at the settlement of Mikri Volvi, the only Early Neolithic site found in Greek Central Macedonia. The absence of permanent architecture, the differences between curated and expedient chipped stone tools, and the use of largely non-local raw materials suggest that this flat-extended site was not permanently occupied, unlike the long-lived tell sites considered characteristic of this period. If more evidence corroborates this interpretation, then the Early Neolithic must be largely reconceptualized to accommodate the diversity with which the Neolithic people built their lifeworld.

Doheny, Marcelle (Phillips Academy, Andover), Malinda Blustain (Phillips Academy), Jeremiah Hagler (Phillips Academy), Claire Gallou (Phillips Academy) and Becky Sykes (Phillips Academy)

[196] *The Peabody gets Out of Trouble: Trial and Redemption*

Like many museums, the Peabody has had ups and downs that were a consequence of both internal and external factors. When times were tough the museum was forced to clarify its mission and role at Phillips Academy. Twice in recent years, the museum confronted difficult financial issues while simultaneously trying to develop its educational program. These difficult times helped lay the foundation for the success that the institution enjoys today. In an environment within which frank discussion and innovative ideas can be voiced, the museum is now integrated into the academic program at Phillips.

Dojack, Lisa [232] see Graesch, Anthony P.

Dolan, Patrick (Washington State University)

[232] *Rules and Roles: The Scale of Economic*

Production at Dionisio Point, a Marpole phase Village
The degree to which Marpole phase household economic strategies were integrated at the village-level remains unclear; were household labor and resources independent, or were there patterns of resource allocation and labor organization at the village-level? The scale of village-level organization raises the potential for the formation of new social roles based upon increasing material inequality. If such structures are present, the reproduction of social roles that distinguished household leadership is only part of the process of increasing social stratification. I examine these issues via analyses of village economics at the Dionisio Point site.

[232] *Second Chair [232] Third Organizer*

Dolan, Sean (New Mexico State University)

[62] *Evidence for obsidian source variation through time at Kipp Ruin (LA 153465)*

XRF analysis was performed on obsidian artifacts from Kipp Ruin (LA 153465), a multi-component site in southwestern New Mexico to assess temporal and spatial changes of obsidian sources during the pithouse and pueblo periods. Results show two interesting patterns about the site. 1) Obsidian sourcing varies through time with more sources being utilized during the pueblo period and 2) the occupant's utilized southern sources less than sources to the north during the pueblo period. This can be attributed to wider kinship ties throughout the Mogollon territory starting around A.D. 1000 when they switched to living in pueblos.

Dollar, Nathanael

[36] *Possible Alternatives to Agricultural Intensification in Texas*

The archeological record of Texas includes a great range of variation in the presence, timing, and extent of wild plant resources and maize horticulture. This project tests a proposition made by Johnson and Hard (2008) that hunter-gatherers should intensify on wild plant resources where economically important species are more abundant. Analysis using Binford's (2002) environmental frames of reference, geographic distribution maps for

economically important plants, and archaeological data produces an equation which can be used to predict the presence of maize agriculture in Texas. This research has implications for expectations of intensification on plant based subsistence resources resulting in agriculture.

Dolphin, Alexis (The University of Western Ontario), Katharina Lørvik (Norwegian Institute for Cultural Heritage Research) and Anna Karin Hufthammer (Bergen Museum)

[236] *Dental Indicators of Children's Responses to Urbanisation in Early Medieval Bergen, Norway*

By the 12th and 13th centuries Bergen, Norway, had developed into the first truly international trading centre of Scandinavia and, as such, experienced a relatively rapid period of urbanisation. The effects of such a shift in social organisation may have been felt especially by mothers and children as Norway's king levied heavy tax and fee burdens on households. An examination of the microstructure of teeth excavated from the St. Mary's churchyard at Bryggen allows us to draw conclusions regarding the frequency and timing of stressful periods common to children living in Bergen at this time.

Domenici, Davide (University of Bologna (Italy))

[56] *Children Sacrifice or Special Burial Place?*

Discussion and Interpretation of a Late Classic Archaeological Context from Cueva del Lazo (Chiapas, Mexico)

Cueva del Lazo (Chiapas, Mexico) yielded a group of ten children buried in the cave during the Late Classic period. Despite the fact that the context suggests repeated episodes of child sacrifice, no direct evidence of sacrifice was detected neither during excavations nor by the osteological analysis. The paper describes the archaeological context, the associated artefacts (including textiles and other perishable materials) and the results of paleobotanical and bioanthropological researches carried by various colleagues in order to reconstruct the ancient ritual event and to propose a possible interpretation of its meaning.

Domínguez, Silvia and Alejandro Pastrana (DEA-INAH)

[116] *Teotihuacan: Explotación, Talla Y Uso De La Obsidiana Verde*

Con base en las investigaciones en el yacimiento de La Sierra de Las Navajas (Pachuca), se presentan los aspectos organizativos de la explotación, de los procesos de talla y de la utilización de la obsidiana verde en el yacimiento. Se discute sobre los sistemas de suministro, la distribución y el control del estado teotihuacano.

Domínguez Carrasco, María del Rosario [67] see Folan, William J.

Domínguez-Bella, Salvador (S. Domínguez-Bella Earth Sciences Dept. UCA. SPAIN), Alessandra Pecci (Universitat de Barcelona), Darío Bernal (University of Cadiz) and Daniela Cottica (Università Ca Foscari)

[92] *Residues analyses of Roman floors at the Garum Workshop at Pompeii (Italy)*

We present the preliminary results of the analyses of

plastered and beaten floors with plaster traces of the Garum workshop at Pompeii, as part of a Project of the Cadiz and Venice Universities. In the first time this kind of analyses (spot-tests developed by Barba et al., 1991) are applied at Pompeii. The aim was to understand if the residues were altered by the Vesuvian eruption and to understand the use of space in the site, being some of the already known activities carried out: i.e. the conservation of garum (fish sauce) and cooking activities.

Dominique, Marguerie [25] see Steelandt, Stéphanie S.

Donahue, Randolph (University of Bradford) and Adrian Evans (University of Bradford)

[59] *Laser scanning confocal microscopy: a quantitative approach towards improving lithic microwear research*

Previous research by Evans and Donahue has shown that use of the laser scanning confocal microscopy (LSCM) combined with metrological analyses can exquisitely differentiate experimental specimens used to work a variety of raw materials. Here, the author examines the strengths and weaknesses of the application of LSCM to archaeological assemblages. Key issues are the impact of post-depositional surface modification and differences in raw material surfaces. Mathematical manipulation of the resulting metrological data can resolve some of the problems often encountered by microwear analysts.

Donaldson, Marcia [83] see Green, Margerie

Donaldson, Milford Wayne (Advisory Council on Historic Preservation)

[242] *Countdown to Disaster: The Preservation of Cold War Era Aerospace Resources and Beyond*

Cultural resources relating to Cold War Era aerospace history present a relatively unique collection of structures seldom seen by the public. Rocket test stands, accelerated gravitational sleds, world wide control and tracking facilities, space vacuum chambers, and enormous wind tunnels, where incredible events occurred, have been decommissioned and demolished. When the National Historic Preservation Act became law in 1966, the cultural heritage of these resources was off the radar. With the close of the Space Shuttle Program, federal agencies are now being challenged to develop programs to interpret their space legacy. Case studies will present the challenges of preserving our aerospace heritage.

Donis, Alicia (University of Western Ontario), Christine White (University of Western Ontario), Linda Howie (University of Western Ontario), Elizabeth Graham (University College London) and Fred Longstaffe (University of Western Ontario)

[56] *Diving into the Afterlife: Exploring a Distinct Burial Position at Postclassic Lamanai*

In this paper we examine reasons for the sudden appearance of an unusual face down burial position during the Postclassic period at Lamanai, Belize. A previous speculation that this position was a marker of geographic and/or ethnic difference is currently not supported by preliminary isotopic data on residence or diet, petrographic data on ceramic origins, skeletal markers of identity (cranial and dental modification), or any other mortuary data. Alternate explanations for this

distinct burial pattern are explored within the framework of the shifting ideology that accompanied the transition from the Terminal Classic to Postclassic periods.

Doran, Glen (Florida State University) and Karen Cooper (Florida Department of Law Enforcement)
[76] *[Forensic Anthropology/Archaeology training – a 34 year history]*

In 1977 FSU faculty began offering a Forensic anthropology/archaeology class. By 1980 the class morphed into a 1 week lecture, field and lab course targeting law enforcement staff. Since the mid-1980s it has been offered through the Institute of Police Training and Management. 2.5 days of lecture are coupled with field work including a surface body recovery and a burial excavation. Since 1980 over 600 law enforcement staff have taken the class and it may be the longest running forensic archaeology training program in the United States.

Dorn, Ronald [134] *see Cerveny, Niccole V.*

Doucette, Dianna (Public Archaeology Lab)
[6] *Style versus Occupation: Narrow Stemmed Points from the Tower Hill Site*

Narrow stemmed projectile points are ubiquitous in New England and can rarely be attributed to a single-component Native American archaeological site. The style is typically placed within the Late Archaic period, but also the early Woodland period depending on associated material culture. Excavations at the Tower Hill Road site yielded one of the largest collections of narrow stemmed points in association with radiocarbon dated features, permitting a unique opportunity to reassess the artifact typologies, cultural chronologies, and models of social organization that have been applied to the archaeological record of southeastern Connecticut between 5,000 and 2,500 years ago.

Dougherty, Jessica [150] *see Fruhlinger, Jake C.*

Douglas, Diane (SRI Foundation) and Jeffrey Homburg (Statistical Research, Inc.)

[151] *Paleoenvironmental and Landscape Reconstruction of the Ballona in West Los Angeles*
Long term research in the Ballona has provided the opportunity to reconstruct paleoenvironmental and landscape change in these coastal wetlands in west Los Angeles spanning the last 7,500 years. This research is based on analysis of the stratigraphy, radiocarbon dates, and paleoecological indicators (foraminifera, ostracodes, mollusks, diatoms, silicoflagellates, and pollen) of several core samples. Results indicate that sea level rise caused the Ballona to shift from a bay at the mouth of the Los Angeles River to a lagoon by about 6600 B.P. As the Ballona Lagoon filled with sediment, the ecological landscape also changed, providing a variety of resources for human exploitation through the middle- and late-Holocene.

Douglass, John (Statistical Research, Inc.), Steven Hackel (University of California, Riverside), Anne Stoll and Richard Ciolek-Torrello (Statistical Research, Inc.)

[151] *Early Historical Period Gabrielino/Tongva-Hispanic Interaction in the Los Angeles Basin*

The early historical period in the Los Angeles Basin was a challenging time for Native Californians. New Hispanic institutions, including missions, pueblos, and ranchos, intruded onto traditional Native lifeways. Native groups like the Gabrielino/Tongva responded to these Hispanic intrusions in a variety of fashions, including becoming incorporated into these new, introduced economies and religious institutions. Our paper discusses these interactions, focusing in part on archaeological data and Mission records associated with the Ballona area, located in west Los Angeles. By doing so, we offer unique clues into these interactions and economic and religious relationships.

[151] *First Chair [151] Second Organizer*

Douglass, John [151] *see Ciolek-Torrello, Richard [151]*
see Grenda, Donn [151] see Reddy, Seetha N.

Douglass, Matthew [22] *see Holdaway, Simon J. [3]*
see Lin, Sam C

Dowd, Anne (ArchæoLOGIC USA, LLC) and David Vleck (Pinedale Field Office, BLM)

[224] *Lithic Sources in Wyoming's Upper Green*
Lithic source areas in the Upper Green River drainage of north-central Wyoming, include cherts, other cryptocrystalline materials (porcelanite, or quartzite, obsidian), and steatite. Local versus non-local materials, and the characterization methods used to identify lithic raw materials in the region, are summarized. Riparian processes and glacial action have transported materials and modified the distributions of secondary deposits. A range of source areas and material types were popular at different times. Indications of the relative frequency of source use is discussed for workshop examples in the Upper Green.

[224] *First Chair [224] Second Organizer*

Downs, Robert T. [5] *see Rosenstein, Dana Drake*

Doyel, David (Barry M. Goldwater Range, USAF, Arizona) [52] *Discussant*

Doyle, Shane [113] *see Alegria, Crystal B.*

Dragosani, Gaia [263] *see Bond, Kristina J*

Drake, Douglas (Washington State University) and John G. Jones (Washington State University)

[88] *Spatial Analysis of Phytoliths at the Tlacuachero Site*
A detailed spatial analysis of phytoliths from Tlacuachero, a shell midden in southern Chiapas originally excavated by Barbara Voorhies in 1973, is revealing information on prehistoric plant use and human activity. Samples were collected from a prepared floor in a gridded pattern of 1m increments and are revealing distribution patterns of past plant use. These patterns appear to document the presence of short-lived drying racks or other structures on the floor. The presence of potentially economic types including grasses, palms, and Heliconia are particularly important. Phytolith data representing background forest taxa are also being explored.

Drake, Lee (University of New Mexico)

[255] *Isotopic Chemistry & You: New Ways to Detect*

Drought

New advances in carbon stable isotope research are helping to create a new type of drought index that can be applicable in archaeological sites where dendrochronology or pollen analysis are not available or feasible. The method can either give researchers an idea of the environmental variability in an area (tree data) or get direct data on the drought conditions by using plants that grow annually in the spring, summer, or fall.

Draut, Amy [259] *see Fairley, Helen*

Drew, Natalie [80] *see Maeyama, Kimberly*

Drigo, Marina [12] *see Ambrose, Stanley H.*

Driver, Jonathan C. [126] *see Schollmeyer, Karen Gust*

Drolet, Elizabeth (UCLA/Getty)

[220] *Differential burial environments: Effects on low-fired ceramics and implications for archaeological research*

This paper will investigate effects of heavy shell deposits on the condition of low-fired ceramics, using the Late Archaic fiber-tempered assemblage from St. Catherines Island, GA. Through combined non-destructive analytical techniques, including VPSEM, FTIR, and pXRF, the structural, chemical, and physical deterioration will be examined. The condition of ceramics recovered from dense shell deposits will be compared with those from shell-free areas of the site. The paper will discuss the effect that the burial environment has on changes in condition, and the consequences that these changes have on the excavation, storage, and analysis of these materials.

Dudgeon, John [236] *see Tromp, Monica [63]* *see Rauh, Whitney D. [63]* *see Meredith, Clayton R. [180]* *see Commendador, Amy S.*

Dueppen, Stephen (University of Oregon) and Daphne Gallagher (University of Oregon)

[17] *Seasonal Exploitation of Riverine and Aquatic Resources in the Iron Age West African Savanna*

The adoption of agriculture is often described as a gradual process in which low-level food production with domesticates precedes a full commitment to domesticated resources. In this paper, we explore the effects of this transition on the exploitation of wild foods, particularly the increasing localization of resource collection zones as villagers began to focus more on food production. Taking the Gobnangou escarpment in southeastern Burkina Faso (West Africa) during the late 1st millennium AD as a case study, we examine the shift towards utilization of aquatic resources from local floodplains and seasonal drainages rather than distant permanent river courses.

Duff, Andrew [135] *see Wichlacz, Caitlin A.*

Duffy, Paul (University of Pittsburgh)

[226] *Mortuary Practice and Diverging Social Trajectories in Bronze Age Hungary*

During the Bronze Age on the Great Hungarian Plain, both cremation and inhumation are associated with the development of wealth inequality and complex societies.

The association between cremation and inequality, however, did not hold along the Körös river tributaries, the area of the Ottomány/Otoman culture (2150-1650 BC). This paper traces how cremation may have come to be associated with a de-emphasis on competitive display, differing from the norms of neighboring areas.

Dugas, Lisa (Indiana University of Pennsylvania)

[209] *Searching for Social Identity in Monongahela Bone and Shell Artifacts*

Archaeologists currently debate the social and ethnic identity of Late Prehistoric Monongahela people. Traditional scholarship divides the Monongahela temporally rather than ethnically, based on regional analyses of lithics and ceramics. Ethnicity is assumed, but seldom explored, and Monongahela bone and shell tools have largely been ignored in these traditional approaches. This study investigates social identity through the analysis of bone and shell implements. In addition to being functional tools, bone and shell artifacts communicate important clues to the group identity of the Monongahela, which contributes to a richer understanding of these people and their traditions.

[209] *First Chair*

Dugmore, Jonathan [150] *see Guthrie, Brady H.*

Duke, Daron (Far Western), Jay King (Far Western Anthropological Research Group) and Craig Young (Far Western Anthropological Research Group)

[262] *A Chronological GIS Model for Paleoindian Land Use in the Great Basin*

Archaeologists working on the earliest Great Basin occupations are hampered by a lack of dated sites. As a consequence, the Paleoindian period is often discussed as a static cultural unit. Yet, early inhabitants relied heavily on wetland systems that underwent great change. In this paper, we discuss our first attempt to derive expectations for regional land use by modeling the distribution of wetland systems. Lake level geochronology, paleoenvironmental data, and basin geomorphology are used to predict change through time in the locations of areas that would support wetlands. These data are then compared against the archaeological record.

Duke, Guy (University of Toronto)

[73] *San Andrés: A town and its canal system*

The San Andrés canal system is a complex system of channels constructed from a variety of materials over its long history, dating back to at least the early Spanish colonial era and likely much earlier. The system is still in use today and is an important part of community identity. This presentation will follow the path of the canal pictorially and descriptively in order to represent its form and function as it is seen and used today, discussing how these perceptions and functions are embedded in the historical and archaeological position of the canal system in the region.

Dulanto, Jalh (DePauw University / Universidad Católica del Perú)

[228] *Pampa Chica: An Early Horizon Style from the Central Coast of Peru*

The site of Pampa Chica in the Lurin valley is one of the few sites with Early Horizon occupations that were

excavated in the Central Coast of Peru. Some of the most important findings at this site are several specimens of a previously unknown pottery style distinct for its negative decoration. In this paper I discuss the chronology of the Early Horizon in the Central Coast of Peru; the similarities and differences between the Pampa Chica style and previously known styles to the north and to the south; and the probable interregional connections responsible for these stylistic similarities and differences. [228] *First Chair*

Dumas, Ashley (University of West Alabama)

[208] *New Research at an Eighteenth-Century French Colonial Fort*

Located on the Tombigbee River in present-day Alabama, Fort Tombecbe was established by the French in 1736 as a listening post amongst their Choctaw allies and as a mustering ground for attacks against the English-allied Chickasaws. Because of wider political events, the fort eventually was occupied by other European powers, but recent research has focused on the discovery of French structural features, including the palisade wall and a midden associated with a bread oven, thus enabling an overlay of historic maps with a new topographic survey, the detection of other archaeological features, and accurate comparison of successive fortifications.

Duncan, Neil (University of Missouri-Columbia)

[129] *Early Tropical Forest Cultigens or Interregional Exchange? Exogenous Plants at Late Preceramic Buena Vista, Central Coast of Peru*

Common cultigens arrived on the central coast of Peru during the Late Preceramic as domesticates from the northern or eastern lowlands, such as cotton, chilies, manioc, and sweet potato. Newly discovered plants *Heliconia* sp., arrowroot, leren, and palms from macroremains, phytoliths, and starch grains in materials excavated in a ritual context at Buena Vista, an inland site in the Chillón Valley reveal additional lowland plants rare or unknown in contemporary contexts. This paper explores the role of lowland plants in agriculture and long-distance interaction or exchange connecting emergent complex societies in coastal Peru with lowland populations.

Duncan, Neil [93] *see Hayashida, Frances M.*

Duncan, William (East Tennessee State University)

[56] *Three mortuary violence events among the Postclassic Maya*

Identifying violation of enemies in the material record is a contemporary problem in bioarchaeology. Maurice Bloch remains the only theorist to propose a ritual model that explains mortuary violence cross culturally. Although useful in many contexts, Bloch's categories of positive and negative predation are not always easily applied to cultural contexts lacking a permanent, unchanging afterlife, such as the Postclassic Maya. This paper considers the applicability of Bloch's categories in Mesoamerica, arguing that positive and negative predation likely subsume at least three different events of mortuary violence seen among the Postclassic Maya. [217] *Discussant*

Dunford, Ashley [104] *see Richards, Patricia B.*

Dungan, Katherine (University of Arizona), Robert Jones (University of Arizona, Center for Desert Archaeology), Jeffery Clark (Center for Desert Archaeology) and Deborah Huntley (Center for Desert Archaeology)

[201] *Southern Living: A Tularosa Phase Settlement in Mule Creek, New Mexico*

The Fornholt site in southwestern New Mexico is a newly recorded 50 room masonry settlement dating to the 13th century. The site includes two roomblocks, one of which is associated with two-story rooms that enclose a large kiva. The architecture and ceramic assemblage suggest a strong affiliation with the Tularosa tradition to the north. The Fornholt site, located far away from the Tularosa heartland, is discussed in light of the Mimbres, Black Mountain, and Salado traditions that temporally bracket and overlap with the site occupation.

[201] *First Chair*

Dunn, Stacy (Tulane University)

[103] *Chancay Political Strategies and Economy: A Study of Rural Elite Residences at Quipico, Peru*

This paper discusses rural elite residences at Quipico in the Huaura Valley, Peru during the Late Intermediate Period (A.D. 1100-1435). Quipico was part of the Chancay culture, a coastal polity that developed in the space created after the collapse of Huari and Tiwanaku empires, and prior to Inca expansion. Excavation of elite residential adobe compounds examined potential function of specialized administrative activity areas. Architectural, botanical, and lithic analyses, along with part of a recently revised ceramic chronology, will be presented in relation to site's overall role within the larger Chancay political economy.

Dunning, Nicholas (University of Cincinnati), Robert Griffin (Penn State University), John G. Jones (Washington State University), Christopher Carr (University of Cincinnati) and Kevin Magee (University of Cincinnati)

[119] *Life on the Edge: Tikal and the Bajo de Santa Fe*

The ancient Maya city of Tikal lies near the southwestern margin of the sprawling Bajo de Santa Fe. Ancient residential settlement is relatively dense along the flanks of the bajo and on islands of higher ground within it. Archaeological and palynological evidence suggest that the residents in this area were engaged in agriculture focused on deep, cumulic soils along the bajo margins. The nature of Maya activities within the central portions of the bajo system, where hydrologic variations are more extreme, is more problematic.

[119] *Second Organizer*

Dunning, Nicholas [119] *see Jones, John G. [119]* *see Tankersley, Kenneth B. [266]* *see Smyth, Michael P. [119]* *see Coronel, Eric G [119]* *see Carr, Christopher [119]* *see Weaver, Eric M.*

Durand, Kathy [219] *see Waller, Kyle*

Durant, Michelle A. [87] *see Gebauer, Rachel Smith*

Dussault, Frederic [159] *see Foin, Jeremy C.*

Dussubieux, Laure (Field Museum of Natural

History), Maryse Blet-Lemarquand (Institut de Recherche sur les Archéomatériaux, Centre Ernest-Babelon) and Bernard Gratuze (Institut de Recherche sur les Archéomatériaux, Centre Ernest-Babelon)

[100] *Coloring technologies in ancient South Asian glass: transferred technologies or innovation?*

The study of glass ornaments (mostly beads) found in South Asia using different analytical methods to identify glass coloring technologies was used to attempt to determine whether glass technology was transferred from Mesopotamia to this region or if it developed independently in these two areas. Identification of very distinctive coloring technologies in South Asia, supports the first hypothesis. We argue that the very different natures of the glass material produced in South Asia (exclusively glass ornaments) and in the Middle-East (mainly glass vessels) created the need for different glass technologies.

Dussubieux, Laure [100] see Lankton, James W

Dutschke, Dwight (Dwight A. Dutschke) and Susan Stratton (California Office of Historic Preservation)

[166] *By the Numbers: Trying to Develop a Programmatic Agreement*

One toxic waste site, one public utility, two federal agencies, three different federal departments, two state historic preservation officers, one state agency, nine federally recognized Indian tribes, six properties listed on or determined eligible for the National Register of Historic Places, at least two traditional cultural properties, 165 archaeological sites assumed eligible for the National Register of Historic Places, on at least 1600 acres of land, trying to execute one agreement document with nine different appendices. Do the math, check your addition and see if it all adds up.

[112] *Discussant*

Duwe, Sam (University of Arizona)

[136] *A History of Immigration and Settlement in the 'New World' of the Rio Chama Valley, New Mexico*

Thousands of immigrants moved from the Mesa Verde region to the northern Rio Grande in the thirteenth and early-fourteenth centuries. New research suggests that these migrants were not a homogenous lot but rather expressed subtle, and sometimes striking, variability across both time and space. I explore three contemporaneous early-fourteenth century sites located in the Rio Chama valley on the northwestern frontier of the Tewa traditional homeland. Ceramic, architectural, and tree-ring data are interpreted to understand how disparate people (both immigrants and 'indigenous' occupants) negotiated settlement in the 'new world' of the Rio Grande and eventually became the historic Tewa people.

Dwyer, Rachel (SUNY-University At Buffalo)

[169] *Toward a paleoethnomedicine*

Ethnomedicine is a well-established subfield integrating medical anthropology and ethnobotany, providing rich studies into the healing and body concepts of various cultures and the social, political, and religious roles of healers within different societies. Research surveys show that currently around 80% of the world's population uses some form of traditional medicine. However, archaeology and paleoethnobotany has remained relatively silent on

the issue of healers and healing in the past. This paper addresses the importance and utility of a new sub-study, paleoethnomedicine.

[169] *First Chair*

Dye, Thomas (T. S. Dye & Colleagues) and Maurice Major

[153] *Mapping the Dynamic Traditional Hawaiian Built Environment*

Archaeologists are beginning to appreciate the dynamism of the traditional Hawaiian built environment, where religious sites provided fixed points of reference for more transient habitations. Mapping the dynamic settlement pattern poses several practical challenges. Here we employ stratigraphic principles of the Harris matrix to develop analytic symbology for use on large-scale architectural plans and sections. This approach is illustrated with a detailed example from Kaihola, Hawai'i Island.

[261] *Discussant*

Dyke, Arthur [126] see Saville, James M. **[159]** see Johnson, Donald S.

Dyrdahl, Eric (The Pennsylvania State University)

[73] *Resistance in Northern Ecuador: Settlement Survey in the Pais Caranqui*

How the Inka established and maintained their empire is a perennial issue in Andean scholarship. The Pambamarca Archaeological Project (PAP) has contributed to this literature by studying the Inka's conflict with indigenous populations in northern Ecuador. Most PAP research has focused on mountaintop fortifications that likely played a role in this conflict. My paper instead presents the results of a survey of the buffer zone between and around these fortifications. I discuss not only the characteristics of potential indigenous sites in this area, but also whether or not domestic settlements can provide any insight into the indigenous resistance effort.

Earn, David J.D. [72] see Devault, Alison M.

Eastaugh, Edward [159] see Hodgetts, Lisa

Easton, Norman [124] see Yesner, David R.

Ebert, Claire (University of Oregon), Keith Prufer (University of New Mexico) and Douglas Kennett (University of Oregon)

[145] *Terminal Long Count Dates & the Disintegration of Classic Period Maya Polities*

Terminal long count dates on carved stone monuments have long been used to examine the spatial distributions and dynamics of the Classic Period Maya "collapse" (~AD 730-910). Previous studies have pointed to a systematic disintegration of Classic Period Maya polities from west to east. We retest this hypothesis by analyzing 91 terminal dates from the Maya Hieroglyphic Database. We analyze the spatial patterning in the data using Nearest Neighbor and Inverse Distance Weighted analyses while considering site rank and ecological zones. Spatial patterning is not consistent with the previous hypothesis, but suggests a contraction in multiple core areas throughout the region.

Ebert, Ginny (University of Pennsylvania)**[49]** *Acllawasi: Structuring Chosen Women in the Inka State*

State development entails the establishment of a bureaucratic and physical infrastructure linked with transformation of existing social groups and formation of new institutions. In the Inka state, these processes were exemplified by the acllawasi, described by chroniclers as an elite institution of women, the acllas, chosen to perform both religious and secular tasks. Acllawasi also refers to the physical structure housing these women. I integrate a critical reading of the chronicles with spatial and architectural analysis of acllawasi to assess how the scope and variety of tasks the acllas performed advanced ideological, political, and economic goals of the Inka.

Echeverria, Jose and Tamara Bray (Wayne State University)**[15]** *At the End of Empire: The Late Imperial Site of Inca-Caranqui*

Located at the northernmost edge of Tawantinsuyu, the site of Inca-Caranqui likely represents the last imperial building event prior to the Spanish Conquest. Ethnohistoric accounts regarding who ordered the construction of this site and why are conflicting with some attributing it to Huayna Capac for commemorative purposes, and others to Atahualpa in preparation for his coronation. Recent investigations at the site have focused on documenting the different construction episodes, determining site function, and ascertaining the nature of Inca-local relations via architectural, geochemical, distributional, compositional, and stylistic analyses. In this paper we present some of our recent findings and preliminary interpretations.

Eckert, Suzanne (Texas A&M University)**[264]** *When is a polychrome? Slips, self-slips, and surfaces during the Pueblo IV period.*

Slip color is one of the defining characteristics of ceramic types across the Pueblo IV landscape. Over the past few decades many researchers have interpreted slip color as indicating ethnicity, kinship, religious practice or other social groupings. Few researchers, however, have questioned how slip color is used as an archaeological attribute. This paper considers whether or not slip color is characterized similarly across decorated types, and attempts to address whether or not the number of slip colors defined by archaeologists on decorated pottery are the same number of colors recognized by the producers and users of those pots.

[264] *First Chair***Eckhardt, William (ASM Affiliates), Antonio Porcayo (Centro INAH Baja California) and Martin Rojas (Museo Nacional de Antropología INAH)****[224]** *Around the 28th to the 32nd Parallel: Prehistoric Quarries of Baja California*

Annual archaeological program efforts undertaken by Centro INAH Baja California from 2006 to present have revealed prehistoric quarries representing different lithic industries and periods. Examination of the extractive methods, the types of tool stone technology and the distribution of raw material and artifacts allow us to propose that a diversity of rock types were quarried for local use within particular, specific periods, whereas

another raw material, in this case obsidian, maintains an ample distribution over time.

Edwards, Matt (HDR and UCSB), Katharina Schreiber (UCSB) and Craig Smith (UCSB)**[229]** *Wari Enclaves, Local Emulation, and Interregional Exchange: The Dynamics of Culture Contact in the Central Andes during the Middle Horizon*

As the other contributions to this symposium suggest, culture contact occurs under a wide variety of processes that, in turn, shape how people from different cultural traditions interact with one another as well as how such contact changes the internal dynamics of the societies involved. Culture contact that results from imperial expansion, as occurred during the Andean Middle Horizon (AD 750 - 1000) and the expansion of the Wari polity, can create an ethnic mosaic that results from the administrative needs of the dominant polity as well as the resulting interregional interaction that is caused and/or mediated by imperial expansion.

Edwards, Richard (UW-Milwaukee)**[104]** *Pits, Open Spaces, and Artifact Distributions: A Spatial Analysis of the Schlage Site*

Excavation of the Schlage site Oneota component failed to produce evidence of associated house floors, structure basins, or postmolds. A GIS-based analysis of feature distribution and pit fill contents was undertaken to investigate the possibility that the site may once have harbored structure remnants. Results of the analysis suggest that the arc-like arrangement of some of the feature groupings may reference the former location of domestic structures destroyed by earlier episodes of highway construction.

Eerkens, Jelmer (University of California, Davis)**[11]** *California: A Land of Style*

Culture historians used style, and changes in style over time, to impose chronological structure on the archaeological record. Style is used here to build on that structure, to examine rates, and changes in the rate, of evolution. Why is stylistic change more rapid during some periods than others? California is the geographic base for this analysis.

[181] *see Bencze, Jennifer M.* **[194]** *Second Organizer***[194]** *see Jorgenson, Gina* **[194]** *see Bartelink, Eric J.***[267]** *see Vaughn, Kevin J.***Efferson, Charles [43]** *see Richerson, Peter J***Egan-Bruhy, Kathryn (Commonwealth Cultural Resources Group)****[104]** *Oneota Subsistence Adaptation: A View from the Schlage Site*

The subsistence adaptation of Oneota populations in Wisconsin is commonly described as horticultural adaptation based on an emphasis on wetland resources. Increasing evidence from eastern Wisconsin reflects considerable variation in the subsistence adaptation of these late prehistoric populations. This variability is reviewed from the perspective of the Schlage Site floral analysis.

Egeland, Charles (UNC-Greensboro), Boris Gasparian (Institute of Archaeology and Ethnography, National Academy of Sciences of the

Republic of Armenia), Dmitri Arakelyan (Institute of Geological Sciences, National Academy of Sciences of the Republic of Armenia), Robert Ghukasyan (Institute of Archaeology and Ethnography, National Academy of Sciences of the Republic of Armenia) and Christopher Nicholson (Water Resources Data System, University of Wyoming)

[114] *Excavations at new open-air Middle Paleolithic sites in the Debed River Valley, Armenia*

This study outlines new excavations at two open-air Middle Paleolithic sites in Armenia's Debed River Valley. Both sites are located in terrace sediments of the Debed and appear to have suffered little post-depositional disturbance. At Bagratashen 1, test excavations have revealed a dense (126 finds/cubic meter) and well-preserved lithic collection from a discrete horizon. Typologically, the lithics signal a late Middle Paleolithic occupation. A handaxe discovered during surface survey may indicate a Late Acheulean component as well. At Ptghavan 4, a dense, in situ Middle Paleolithic assemblage that likely predates the occupation at Bagratashen 1 has been recovered.

Ehrich, Richard (German Archaeological Institute Eurasia Department)

[23] *The Neolithic Age in Sichuan*

When two huge Bronze Age hoards were discovered at Sanxingdui in 1986, it led to what could be called a 'boom' in prehistoric archaeology, mainly in Sichuan but also in other parts of Southwest China. However, only when it became clear in 1995 that the walled enclosures still visible in the Chengdu Basin are in fact Neolithic, did research into these earlier periods increase drastically. Today new phenomena are uncovered at a staggering rate, though many questions remain unresolved. This paper thus summarily presents the current state of research into the Neolithic Age in Sichuan.

Eidsness, Janet (THPO Blue Lake Rancheria, California)

[239] *Context of Place: Behind the Redwood Curtain, North Coastal California*

California's North Coast Region may appear to be geographically isolated due to its rugged terrain and lack of major highways. Its prehistoric archaeology infers a long record of habitation, climatic shifts, immigrations and shifts in exchange networks, changes in settlement/subsistence strategies, growth of large semi-sedentary hunter-gather populations, and development of complex Indian cultures. This paper will introduce its geographic setting, historic and contemporary tribes, give a brief history of past research, and identify a few challenges, to provide a contextual framework for recent research presented in this symposium and to offer ideas for future focused research.

Eiselt, B. Sunday (Southern Methodist University) and John Ives (University of Alberta)

[17] *Kinship--The Unattended Dimension of Paleoindian Studies*

Paleoindian colonization is typically modeled as biological population fissioning or with unwarranted assumptions about social organization and demographic parameters. Yet meaningful inferences can be made about Paleoindian kinship, with profound settlement implications. Paleoindian peoples were undoubtedly

aware of critical, kin-structured options for managing the sociogeographic boundary at which marriages could occur in small group sizes and extremely low population densities. By adopting this perspective, we provide alternative explanations to better apprehend enigmatic aspects of the Paleoindian record, including differential demographic success for colonization episodes, shifting styles of colonization, and social dimensions signaled by the spread of fluted point technology.

Eiselt, B. Sunday [18] *see* Darling, J Andrew **[207]** *see* O'Brien, Lauren

Ek, Jerald (SUNY Albany)

[51] *Political Intrigue in the Realm of Chakanputun:*

Warfare and Political Centralization during the Postclassic Period in Champotón, Campeche

During the ill-fated entrada into the Yucatán Peninsula in 1517, Spanish troops in search of water near the city of Chakanputun encountered fierce resistance from local warriors, leading to the death of Córdoba and cancellation of the expedition. Recent archaeological research in the Río Champotón drainage suggests that military success may have played a central role in the earlier history of Chakanputun. This paper reviews new evidence for military conflict in the consolidation of power and rise to regional prominence by the ancient city of Chakanputun during the Postclassic Period.

Elder, J. Tait [3] *see* Schneyder, Stacy L. **[126]** *see* Butler, Virginia L.

Ellick, Carol (Archaeological and Cultural Education Consultants) [268] *Discussant*

Elliott, Michelle (CNRS, UMR 8096) and Claire Alix (CNRS and University of Paris I)

[25] *What wood can tell us about past societies*

Whatever its preserved state (charred or not), wood or the traces of its presence are often omnipresent in archaeological sites even if regularly overlooked. Wood remains tend to be under-analyzed and their important role in human ecology and economies is minimized. Yet, detailed analysis of wood's anatomical features, its annual growth-rings, and the cut marks left on its surface, among others, can provide rich bodies of data about past environment and societies. In this paper, we review the diverse range of methods and problem orientations that have developed in wood studies and how they improve our understandings of ancient societies.

[25] *Second Chair*

Elliott, Michelle [25] *see* Turkon, Paula

Ellison, John [150] *see* Farquhar, Jennifer M.

Ellison, Leigh Anne (Arizona State University)

[31] *An Intrasite Analysis of Household Clusters at Las Canoas, Honduras*

This project takes a statistical approach to examining household clusters at the Late Classic (600-800 AD) polity of Las Canoas, Honduras. Residential structures, spatially clustered in patio groups, are compared statistically using k-means cluster analysis on the basis of artifacts recovered therein. These results reveal a

more nuanced picture of household organization at the site based on wealth, domestic ritual, external connections, and involvement in crafting activities considered in the context of spatially clustered patio groups.

Ellwood, Brooks [265] *see* Evans, Amanda M.

Elson, Mark (Desert Archaeology), Michael Ort (Northern Arizona University), Kirk Anderson (Museum of Northern Arizona), Paul Sheppard (University of Arizona) and Elizabeth May (University of Arizona)

[99] *A.D. 1064 No More? A Multidisciplinary Re-evaluation of the Date of the Eruption of Sunset Crater Volcano, Northern Arizona*

In 1958, Terah Smiley suggested that Sunset Crater Volcano erupted in A.D. 1064, a date now entrenched in the literature and important in reconstructing prehistoric human response to the eruption. The 1064 date was based on the initiation of suppressed and complacent tree rings from several beams used in the construction of the 100-room Wupatki Pueblo, ~20 km northeast of Sunset Crater. Recent multidisciplinary studies using chemical assays and tree-ring morphology indicate that this date may not be accurate. In this paper we present evidence suggesting that it is more probable that Sunset Crater erupted in the A.D. 1080s.

[99] *First Chair*

Elston, Robert (University of Nevada)

[230] *Washoe Archaeology Redux*

In the mid to late 1960s I was first a graduate student of Wilbur (Buck) Davis at University of Nevada, Reno working on his Washoe Archaeology project investigating the prehistory of the Washoe Indians of the eastern Sierra Nevada, and later, Robert Stephenson's assistant in the newly formed Nevada Archeological Survey. The Nevada-Berkeley archaeology axis was very strong then. The Washoe archaeology project was stimulated by previous research of UC Berkeley archaeologists Robert Heizer and Albert Elsasser who offered interest and encouragement to Buck and me. Robert Stephenson provided support to Billy Clewlow and Richard Cowan during their initial Black Rock Desert sojourn. I was fortunate to meet, interact with, and be influenced by all of the Berkeley graduate students working in the Great Basin at the time, including Billy with whom I have since shared overlapping research areas and interests (Black Rock Desert, Grass Valley, China Lake/Coso). This symposium is an opportunity revisit the Berkeley influence on my initial Great Basin research and compare what we thought we knew then about Washoe prehistory with current understanding

[12] *Discussant* **[12]** *Second Organizer*

Ely, Nancy (AUSD, Wood Middle School) [268]
Discussant

Emery, Kitty [206] *see* Olson, Elizabeth Joy

Encinas, Joe [138] *see* Adams, Christopher

Endacott, Neal (Central Washington University) and Steven Hackenberger (Central Washington University)

[178] *Late Holocene Increases in Artiodactyl Populations in the Columbia Basin: A Case Study from the Sanders Site, Southcentral WA*

The Sanders site faunal assemblage provides a test of data patterns noted by other researchers in the western United States suggesting climate change promoted improved artiodactyl habitat and population increases after about 4500 BP. This increased prey availability may have played an important role in the transition from mobile foragers to logistically oriented collectors in the Columbia Basin. The assemblage has the potential to provide significant paleoenvironmental, taphonomic, and subsistence data on the late Holocene inhabitants of the Columbia Basin during a time of increasing cultural complexity.

Endo, Naoko, Rebecca Wigen (Pacific Identifications Inc.), Louise Williams (Simon Fraser University), Suzanne Villeneuve (Simon Fraser University) and Brian Hayden (Simon Fraser University)

[176] *Examining Shifts in Subsistence Patterns throughout the Evolution of Keatley Creek*

Resource intensification and diversification have been key issues in understanding the conditions surrounding the emergence and collapse of aggregated villages in the Mid-Fraser Region. Recent research at Keatley Creek has resulted in large datasets of faunal and botanical data from varied contexts spanning all major occupation periods, from early village formation to the protohistoric period. These data, combined with new radiocarbon dates, provide an ideal dataset for addressing questions of shifts in subsistence due to environmental changes as well as intensification and diversification.

Endo, Naoko [176] *see* Billy, Nora

Eng, Jacqueline (Western Michigan University) and Vanchigdash Mergen (National University of Mongolia)

[236] *Health of Xiongnu and Mongol Period populations: a bioarchaeological analysis of pastoral populations from two ancient Mongolian empires*

Mongolia has been the home of many pastoral cultures, including several nomadic confederacies that developed into powerful empires. Two of the most well known are the Xiongnu, who clashed often with China's early dynasties, and the Mongol Empire, who over a millennia later conquered throughout Eurasia. Bioarchaeological comparisons of skeletal collections deriving from these two different periods of empire suggest that despite the hundreds of years separating them, and the probable attendant changes in the types of stresses, people from these pastoral populations nevertheless grew to similar statures and experienced similar susceptibility to health problems including fractures and dental disease.

Engelbrecht, William [55] *see* Hart, John P. **[164]** *see* Katz, Sandra

Englehardt, Joshua (Florida State University) and David Lentz (University of Cincinnati)

[157] *Early Precolumbian Agriculture and the Evolution of Anthropogenic Mesoamerican Landscapes*

Archaeological research combined with paleoethnobotanical approaches have provided a wealth of data regarding agricultural practices of the past as well

as landscape modifications caused by human occupants. This paper will present recent evidence for agricultural origins and landscape modifications that accompanied the emergence of complex societies in Mesoamerica. Not only were plants brought into domesticated cultivation systems over an approximately 10,000 year period, but also forests were restructured to provide optimum productivity to meet human needs. Paleoethnobotanical data will be presented from archaeological sites across the region including Cob, Pulltrowser, San Andres, Ceren, Chan, Aguatega and Tikal.

[157] *First Chair*

Englehardt, Joshua [157] *see Carrasco, Michael D.*

Ensor, Bradley (Eastern Michigan University)

[51] *The Crafting of Maya Kinship*

Past studies of prehispanic Maya Kinship include problematic assumptions: that a pan-Maya system existed, that naming and term systems predict social organization, that kinship is static, that different classes have the same system, and that archaeological data are too "limited". Political economic theory views kinship as dynamic, malleable, and variable by class. Three classes at the Late Classic period Islas de Los Cerros demonstrate distinct kinship behavior explained by their context in the political economy. Rather than fitting problematic ethnohistoric models to archaeological data, archaeology is actually better equipped to develop models for prehispanic Maya kinship.

Erb-Satullo, Nathaniel (Harvard University), Andrew Shortland (Cranfield University) and Katherine Eremin (Harvard University Art Museum)

[5] *Local Wares, Imperial Styles: Identifying Nuzi Ware Production Sites in the Near East through Petrography and Chemical Analysis*

The production and consumption of elite material culture in the Near Eastern Late Bronze Age (c. 1600-1200 BC) has long been an area of scholarly interest. Nuzi ware, a white-on-dark painted ceramic associated with the Mitanni Empire, appeared at this time. Stylistic analysis is ambiguous about whether these ceramics were imported from the empire's core, or whether production occurred locally among imperial vassals. Optical petrography provides a new perspective on this question, comparing mineralogy of the ceramics with local geology. Coupled with chemical analysis, this technique furnishes a means of distinguishing between production centers.

Eremin, Katherine [5] *see Erb-Satullo, Nathaniel L.*

Eren, Metin (Southern Methodist University)

[120] *Clovis Technology in the North American Lower Great Lakes region*

This paper reviews the processes and technology of the Clovis colonization pulse into the Lower Great Lakes region approximately 11,000 B.P. Mobility and land-use strategies of these early colonizers will be reviewed, and technological patterning will be assessed. Evidence of Clovis blades and overshot flaking in the region indicate that the earliest archaeological manifestation should indeed be called "Clovis."

[7] *see Morgan, Brooke M.*

Eriksson, Erik [153] *see Buckland, Philip I.*

Erlandson, Jon (University of Oregon)

[11] *California Archaeology: A View from the Sea*

Less than 50 years ago, California archaeology was seen through a terrestrial lens, with Paleoindian or Milling Stone peoples migrating from interior regions to the coast, where they gradually adapted to life by the sea. Today a growing body of data suggest just the opposite, with sophisticated maritime peoples colonizing the coast and Channel Islands very early, then migrating up river valleys into the interior. A new view proposes that the Paleocoastal and Western Pluvial Lakes traditions are closely linked to a coastal migration from northeast Asia to the Americas. What followed is reviewed through an aquatic lens.

[263] *see Bond, Kristina J* [263] *see Willis, Lauren M.*

[123] *see Braje, Todd J.*

Ermigiotti, Paul [99] *see Varien, Mark D*

Ernenwein, Eileen [64] *see Hargrave, Michael L.*

Eronat, Kristina (UCLA & The University of Kansas)

[235] *Marine Subsistence as Probable Cause for Dental Health Variations in Prehistoric Panamanians of the Caribbean Coast : Quantitative and Non-Metric Dental Analysis from Sitio Drago, Isla Colón, Bocas del Toro, Panama*

By focusing on bioarchaeological research, such as dental pathology analysis, a better model of how subsistence patterns affected humans on an individual as well as group level can be established. Due to a number of unique geological features, Sitio Drago, Northern Panama, offers excellent preservation for human and faunal remains, thus allowing for strong bioarchaeological analysis to be performed in the goal of ascertaining past subsistence patterns and their effects on health status. In this poster, the use of dental pathology analysis and comparison at Sitio Drago will be the focus of my research presentation.

Eschbach, Krista (Arizona State University) and Alanna Ossa (Arizona State University)

[216] *Archaeological Data Curation and the Use of Legacy Databases*

A common problem for legacy research is that data are often organized by artifact storage location rather than archaeological provenience, making future research difficult. Undocumented changes in data and loss of original organizational strategies can further compromise accessibility and integrity. Based on our experiences in curation and research analyses, we propose specific methods to make archaeological data curation and legacy use as flexible and useful as possible. This paper will deal with overcoming difficulties associated with the use of legacy databases and curation procedures that can increase the accessibility of archaeological and historical data for future research.

Estes, Mark (WCRM, Inc.), Ed Stoner (Western Cultural Resource Management, Inc.) and Geoffrey Cunnar (Western Cultural Resource Management, Inc.)

[262] *Preliminary Use-Wear Results from a Concentration of Western Stemmed Points in the Fire Creek Archaeological District, Central Great Basin*

Locus A/R is an open-air, single-component Western Stemmed Tradition site within the Fire Creek National Register Archaeological District in the Central Great Basin. Twelve fragmented basalt stemmed points were recovered from surface and subsurface contexts, most within a discrete concentration. Low power microscopy is employed to identify post-break use-wear and examine burin scars and breakage patterns to help determine tool and overall concentration function. Geochemical characterization provides the locations of toolstone sources, enhancing our understanding of the Prearchaic lithic terrane for this area. Preliminary results suggest this concentration may have served as more than just a discard and rehafting/retooling location.

Estes, Mark [61] *see* *Cunnar, Geoffrey E.*

Ethridge, Robbie (University of Mississippi)

[86] *The Colonial Indian Slave Trade and the Coalescences of Eighteenth-Century Southeastern Indian Nations*

Scholars understand that the Mississippian world underwent a fundamental transformation with the European invasion. The chiefdoms fell and people reorganized into what we now call coalescent societies. This paper examines the role that the colonial Indian slave trade played in the transformation of the Mississippian world during the first 150 years of European contact. The paper tracks the intensification of slave raiding for Indian slaves to sell to European merchants by Indian slavers, the subsequent dissolution of chiefdoms and dislocation of the people, and it begins to sketch the early coalescence of the Indian nations of the colonial American South.

[86] *First Organizer*

Etnier, Mike [210] *see* *Sterling, Sarah L.*

Eubanks, Mary

[196] *Origins of American Agriculture: A Retrospective Reinterpretation*

Since its founding in 1901, the Robert S. Peabody Museum of Archaeology has been at the vanguard of archaeological research to better understand human-environmental interactions. Following the pioneering paleoecological work of his predecessors Douglas Byers and Fred Johnson, Richard S. ("Scotty") MacNeish assembled an interdisciplinary team to bring together multiple lines of scientific evidence to investigate the origins of agriculture and settled life in the Americas. This presentation will take a retrospective look at the landmark Prehistory of the Tehuacan Valley project and review its findings in light of 21st century evidence for the origins of American agriculture.

Evans, Adrian (University of Bradford)

[59] *Learning from Blind Tests: Advancing the Technique Step by Step*

A technique developed over 30 years ago is still being confidently used today, mostly without any significant modification. However, since its inception there have been many criticisms, originating from different perspectives, which have questioned the validity of the results it is used to produce. As part of the proofing several blind tests have been conducted, showing variable results. This paper presents these studies from a

different angle and suggests that these, and future tests like them, should be used constructively to advance the technique. Examples are given of how this might progress and the potential benefit that this may have.

[59] *Second Organizer*

Evans, Adrian [59] *see* *Donahue, Randolph E.*

Evans, Amanda (Louisiana State University), Patrick Hesp (Louisiana State University), Brooks Ellwood (Louisiana State University), Graziela da Silva (Louisiana State University) and Sophie Warny (Louisiana State University)

[265] *Potential Prehistoric Sites in the Gulf of Mexico*
Results are presented for two cores extracted from the Gulf of Mexico, in water depths of 50 and 100 feet BSL, which both contained charcoal. Charcoal was not present in cores taken from the surrounding areas, suggesting two discrete occurrences of fire. Preliminary 14C analyses indicate that the inshore charcoal unit dates to ~9,500 years BP; the charcoal unit from the deeper core is awaiting results. Geophysical data and laboratory analyses suggest an environment favorable for possible habitation by prehistoric groups.

Evans, Jennifer (Missouri State University)

[219] *Burials of the Point Community: A Comparison to Chaco Canyon*

The Totah Region of northwestern New Mexico contains many Ancestral Puebloan sites which are believed to have had cultural ties with the communities of Chaco Canyon. This paper focuses on the Point Community, a potential Chacoan outlier located on the banks of the San Juan River south of Farmington, New Mexico. The Point Community sites contain numerous human burials and associated grave goods. In this study, I will compare the burials of the Point Community sites to those of Aztec Ruins, Salmon Ruin, and Chaco Canyon, illustrating the outlier status of the Point Community.

Evans, Susan (Penn State University) and Raúl Valadez Azúa (Universidad Nacional Autónoma de México)

[200] *Very Sad Sounds: An Omichicahuastli from Cihuatecpan*

The notched bone, or omichicahuastli, was part of the repertoire of musical instruments for Aztec and other native American cultures, and was used in mourning and other ceremonies. An omichicahuastli found in the Aztec village of Cihuatecpan, near Otumba (Postclassic and Early Colonial periods) is analyzed in terms of cultural and locational contexts, which reveal its sacred associations. Buried deep in a midden, it was well hidden from the vigilance of Colonial period authorities intent on eradicating traditional practices. Unlike many omichicahuastlis that were made of human femurs, the Cihuatecpan example is tapir bone, documenting interaction with the tropical lowlands.

Evershed, Richard [126] *see* *Outram, Alan Keith*

Everson, Gloria (Lyon College), Michelle Henley (Lyon College) and Christine Font

[82] *Edward Kennard, the Federal Writers' Project and the Birth of Public Archaeology*
Archaeology captured the attention of a larger audience

during the 1930s via the WPA state guides produced by the Federal Writers' Project. While these guides covered numerous topics, archaeology found its place. Edward Kennard, a former student of Boas, supervised and edited the "Indians and Archeology" section of each guide, and additionally created a series of driving tours highlighting significant archaeological attractions in each state. By establishing a rigorous standard of accuracy and skillfully dealing with the various writing styles and personalities types, Kennard brought each state's past into the present, paving the way for today's public archaeology.

Evet, Rand (University of California, Berkeley) and Rob Cuthrell (University of California, Berkeley)

[222] *Phytolith Evidence for the Extent and Nature of Paleo-Grasslands in Quiroste Valley, central California, USA*

Over the past decade, phytolith analysis has been used effectively to investigate the extent and nature of paleo-grasslands in California. As part of an interdisciplinary research project on indigenous landscape management, our research team collected ~150 soil column samples from Quiroste Valley on California's central coast, including a Late Period archaeological site and transects on the valley floor. Data analysis combined morphology-based phytolith classification with computer-assisted 3-D image analysis techniques to improve phytolith discrimination of plant taxa. In this paper we present preliminary phytolith data from Quiroste Valley and discuss the potential for expanding archaeological phytolith research in California.

Ewing, Thomas [148] *see Trachman, Rissa M.*

Fairley, Helen (US Geological Survey), Brian Collins (US. Geological Survey) and Amy Draut (U.S. Geological Survey)

[259] *Use of terrestrial lidar to monitor archaeological site condition in Grand Canyon, Arizona*

Terrestrial lidar offers a highly accurate, low impact, and relatively cost efficient means of quantifying surficial changes at archaeological sites. This presentation reports on results of a pilot study which employed terrestrial lidar, in conjunction with high resolution weather monitoring, to quantify the amount of erosion and deposition occurring seasonally at archaeological sites in the Colorado River corridor. We then discuss how these data can be used to elucidate the relative contributions of weather, human visitation, and the effects of Glen Canyon Dam on archaeological site condition along the Colorado River in Grand Canyon National Park.

[20] *Discussant*

Fajardo Bernal, Sebastian (Sebastian Fajardo Bernal)

[68] *Political Process of Centralization of a Community in the Leiva Valley, Colombia: Hierarchy and Negotiation Between Centuries XI-XVII*

The study evaluated if the construction of the social hierarchy between households of a community in the Muisca Area of Colombia was negotiated and if that possible negotiation allowed changes to the political structure between the centuries XI-XVII. The archaeological evidences suggest that in the social hierarchy of the community of Suta had minimal

differences between commoners and elite, however the social hierarchy it was not negotiated between elite and commoners. But elite didn't controlled the activities of households of the community, allowing actions or strategies defined by the environmental, economic and sociocultural context in which they were immersed.

Fakra, Sirine [220] *see Kakoulli, Ioanna*

Fang, Hui [3] *see Li, Min*

Farah, Kirby

[148] *Archaeology of Maya Water and Land*

Management: Past, Present and Future

Manipulation of water and land by the Maya was carried out to improve the function and efficiency of resource management across the immense and geomorphologically diverse region. While constructed with practicality in mind, water management was not independent from local politics, economy, religion, and other societal factors. Untangling the vast and nuanced factors that contributed to the development and sustainability of these systems has necessitated unique archaeological approaches. A grasp of the history and theoretical background of Maya water and landscape management is essential to understanding the trajectory of archaeology in the eastern Petén.

Farah, Kirby [148] *see Trachman, Rissa M.*

Farahani, Alan (University of California, Berkeley) and Benjamin Porter (University of California, Berkeley)

[26] *Resource Exploitation of Fresh-water Crustacean Resources in a Semi-arid Environment: A case study from early Iron Age Jordan*

Khirbet al-Mudayna al-'Aliya lies at the southern-most tributary of the Wadi Mujib, approximately 40 kilometers east of the Dead Sea in an area that is challenging for human subsistence. Excavations at the site have revealed architecture from a single-period occupation dating to the early Iron Age (ca. 1000BC) alongside numerous artifacts and ecofacts. Archaeofaunal remains of Levantine freshwater crabs (*Potamon potamios*) discovered at the site pose intriguing questions regarding the resource extraction techniques of the local community. Regression analyses of selected morphometric parameters alongside isotopic analyses provide information on harvesting, as well as seasonality, local environment, and cultural significance.

[250] *Second Chair [45] Third Organizer*

Fariss, Barker (University of North Carolina at Chapel Hill)

[229] *Using GIS and Settlement Pattern Archaeology to Better Understand the Nature of Highland/Coastal Interaction during the EIP in the Moche Valley, Peru*
Since 2002, my research on the North Coast of Peru has focused on combining traditional settlement pattern archaeology with advanced spatial technologies. To illustrate variation between ethnically diverse settlements, I analyzed explanatory variables derived from spatial analysis and survey of architecture and settlement organization at over one hundred highland sites located on the coast in the Moche Valley. My conclusions illustrate corollaries of volatile demographic

fluctuation during nascent Moche hegemony in the region. This research complements a growing corpus of archaeological theory and methodological practice toward a better understanding of contact and interaction among culturally diverse prehistoric settlements.

Farnsworth, Paul (WSA)

[229] *Comparative Perspectives on Culture Contact in California and the Caribbean*

The proposal of new theoretical frameworks over the last two decades has resulted in a critical reassessment of culture contact studies of both California and the Caribbean in the eighteenth and nineteenth centuries. This paper will review the approaches used since the early 1990s in the study of culture contact between the Spanish and Native Americans in California and between Europeans and enslaved Africans in the Caribbean. The paper will compare and contrast the approaches used and the way that they have been applied in archaeological research in these two areas to evaluate their effectiveness in different contexts.

[121] *Discussant*

Farquhar, Jennifer (Albion Environmental, Inc.), Ryan Brady (Albion Environmental, Inc.) and John Ellison (Albion Environmental, Inc.)

[150] *Flaked stone studies at Camp Roberts California Army National Guard Training Installation: Theoretical underpinnings and contributions to California Central Coast Prehistory*

Research on California's central coast has illustrated evolutionary trends in settlement and subsistence organization. Studies are often based on vertebrate and invertebrate faunal data, primarily from coastal environments. One often overlooked line of evidence is the role of lithic technology within these cultural systems. Recent research at Camp Roberts, located 40 km inland, has brought to light new data that provides insights regarding changing patterns of land use and social organization. These data are interpreted using Technological Organization theory, within a framework of Behavioral Ecology. Insights gained have implications for interpreting settlement organization on California's central coast.

Farquharson, Michael [167] *see MacDonald, Brandi Lee*

Farrand, William (University of Michigan) [249]
Discussant

Farris, Glenn (Farris, West & Schulz)

[194] *With a View to the Afterlife: A Reconsideration of Peter Schulz's Windmiller burial orientation data in light of the Marsh Site Excavations*

In 1970 Peter Schulz published a study of the burial orientations found on Windmiller Period sites in the Central Valley of California. This orientation appeared to coincide with the setting sun and led to an hypothesis that this reflected the times of the year that these burials occurred. Schulz was able to elicit patterns of incidence of deaths at certain times of the year. Recent excavations at the Marsh Creek site have provided additional data on Windmiller period burials. This paper will evaluate Schulz's data and conclusions in light of this new burial sample from this period in California

archaeology.

Fast, Natalie (Washington State University)

[46] *How Great Were the Cedar Mesa Great House Communities?*

We currently know little about the residential settlements associated with two late Pueblo II period "Chaco-esque" great houses identified on Cedar Mesa. This paper examines the social implications of differing patterns of settlement through a review of PII great house communities across the Northern San Juan region. With this data in mind, expectations are developed for recognizing and interpreting great house community patterns on Cedar Mesa. This work will contribute to designing surveys to be conducted around the two aforementioned great houses.

Faucher, Anne-Marie (Universite Laval, Quebec)

[25] *Evolution wood procurement: a Middle Iron Age to Late Norse case study, Everley Broch, Caithness*

Everley Broch is composed of a Middle Iron Age broch and a Late Norse house. Local gathering of roundwood, short-distance timber trade within the mainland and collection of driftwood are the main wood procurement strategies attested. It is proposed that a long-distance trade network was established during the Norse period as a fourth wood supply strategy. Within a wider Atlantic Scotland framework, as the site is located on the Scottish mainland where more timber is available, driftwood does not seem to have been as important as for the other Atlantic Scotland regions.

Faucher, Anne-Marie [202] *see Bain, Allison*

Faugere, Brigitte (University Paris 1)

[98] *Anthropomorphic figures in the rock paintings of north of Michoacan, Mexico, and the "gift of seeing"*

The rockshelter paintings located in northern Michoacán illustrate complex scenes that frequently include anthropomorphic figures with their heads covered by concentric circles, and holding weapons and shields. Stylistic and recent radiocarbon dating assign these paintings to the "semi-arid tradition" of northwest Mexico. By the end of the Epiclassic period, the region was occupied by semi-nomadic groups who made the paintings. In this presentation, I analyze three new sites and I interpret the scenes as the celebration of the "gift of seeing" by analogy with current Huichol ritual practices.

Faught, Michael (Panamerican Consultants, Inc)

[265] *Remote Sensing, Target Identification, and Testing For Submerged Prehistoric Sites For Dredging Projects in Florida: Theory, Methods, and Lessons*

Recent CRM projects conducted by Panamerican in Tampa Bay, St Johns River, and Indian River, Florida, have had as part of their focus attention to potentials for submerged prehistoric sites as well as submerged historic shipwrecks. Methods to be discussed include remote sensing, target identification using locally based site probability models, remote sensing, and testing by coring, probing, and excavations using hydraulic and air lift dredges. This paper discusses some advances and challenges to conducting prehistoric CRM in underwater settings.

[265] *Discussant*

Faulks, Nathan [59] *see* Kimball, Larry R.

Faulseit, Ronald (Tulane University)

[32] *An Early Postclassic Domestic Terrace at Dainzú-Macuilxóchitl, Oaxaca, Mexico*

This poster presents the results of a two-year project of survey, surface collection, and excavation at the site of Dainzú-Macuilxóchitl in Oaxaca, Mexico. The research was focused on identifying and characterizing the Late Classic (A.D. 500-900) and Early Postclassic (A.D. 900 - 1300) components of the site, which coincide with the devolution and regeneration of complex society within the Valley of Oaxaca. The data from the excavation of an Early Postclassic domestic terrace, including several radiocarbon dates, are incorporated into a discussion of the reorganization of the site after the decline of the Monte Albán state.

Fauvelle, Mikael (University of California, San Diego)

[186] *Economic Complexity at La Blanca: Feasting, Craft Specialization, and Domestic Production*

As we expand our understanding of the evolution of early complex society it is important to maintain a focus not only on political inequality, but also on the development of intermediate economic systems. At La Blanca, uniformity in ceramic vessel distributions between households suggests that commoners and elites shared access to the same sources of ceramic production. This pattern is at odds with redistributional economic models commonly associated with "chiefdoms" in neoevolutionary theory. This paper will examine these ceramic distributions and suggest that economic exchange at La Blanca may have been more complex than commonly assumed for the Middle Preclassic.

[67] *see* Buxt, Matthew A.

Fayek, Mostafa [136] *see* Hull, Sharon K. **[97]** *see* Anovitz, Lawrence M.

Feathers, James (University of Washington)

[3] *Luminescence Dating of Prehistoric Rock Alignments*
Prehistoric rock alignments are ubiquitous throughout the northern Rockies and adjacent High Plains, but are poorly dated. Luminescence dating is used to date the sediments under the rocks. Dates are provided for several sites in Montana and Wyoming, with particular emphasis on the Kutoyis buffalo jump locality on the Blackfeet Reservation. Results show the Kutoyis location was used over several hundred years, postdating AD1100. Rock alignments from sites in northeastern Montana and northwestern Wyoming yield dates of around BC 500.

[5] *see* Casson, Aksel **[180]** *see* Rhode, David

Fedje, Daryl [168] *see* Orchard, Trevor J.

Feeley, Frank [202] *see* Hambrecht, George

Fehrenbach, Shawn (University of Hawai'i at Manoa) and Michael Glascock (University of Missouri Research Reactor Archaeometry Laboratory)

[228] *Chemical Compositional Analysis of Late Prehistoric to Early Historic Earthenwares from Five Sites in Cambodia*

This paper presents results of chemical analyses of ceramics from five sites in Cambodia, using Instrumental

Neutron Activation Analysis (INAA). 95 samples from the site of Angkor Borei, an important center of early state development in Southeast Asia, and 35 more samples from four contemporaneous sites across Cambodia targeted ware groups that are chronologically diagnostic and found across broad areas of Southeast Asia. Results inform on how these ware groups reflect social and economic processes related to state development and increasing sociopolitical complexity in this region between approximately 500 BCE and CE 500.

Feinman, Gary [142] *see* Arnold, Dean E.

Fennell, Christopher (University of Illinois) [118]
Discussant

Fenner, Jack [219] *see* Waller, Kyle

Fenner, Lindsay (University of Nevada Reno)

[262] *Pluvial Lakes and Great Basin Environments: Recent Investigations of the Earliest Inhabitants of Mud Lake, Nye County, Nevada*

Archaeological investigations along Pleistocene lakeshores is a longstanding approach in the Great Basin. Continuing this tradition, recent examinations of remnant beach shores around pluvial Mud Lake, Nye County, Nevada have revealed new information about the early inhabitants of this region. Rich in Paleoindian resources and well-known locally, until recently Mud Lake has received little academic attention. Utilizing new data from pedestrian survey and existing environmental reconstructions, I consider how, when, and why groups visited Mud Lake during the late Pleistocene-early Holocene and place these occupations within the broader context of Paleoindian research in the Great Basin.

Fenner, Lindsay [262] *see* Fenner, Lindsay

Ferguson, Jeffrey (University of Missouri) and Myles Miller (GeoMarine, Inc.)

[207] *A Return to Brownwares, Textured Wares, and Redwares from Southern New Mexico and Western Texas: A Reinterpretation of the NAA Data*
Nearly 2000 samples of brownware, textured, and redware ceramics, clay, and temper from the Mimbres, Jornada, Trans-Pecos, and southern Plains regions of New Mexico and Texas have been chemically characterized through NAA. All major prehistoric brownware and redware traditions of these regions, as well as several textured wares, are represented in the sample. Over 170 sites have been sampled between Grant and Luna counties, New Mexico and Presidio County, Texas. We present a preliminary reclassification of this massive NAA dataset into compositional groups at macro and local scales of production. Preliminary insights into production and exchange patterns are reviewed.

Ferguson, Jeffrey [97] *see* Glascock, Michael D. **[121]** *see* Ahlman, Todd

Ferguson, Josalyn (University at Albany/New York State Museum)

[190] *In the Shadow of Colha? The Lithic Assemblage of a Terminal Classic Migrant Maya Community in Northern Belize.*

Recent analysis of the lithic assemblage from the site of Strath Bogue in Northern Belize has revealed interesting patterns of production, consumption, curation, and recycling. These data reveal significant information concerning the re-settlement and regeneration of this Terminal Classic migrant community as they contended with the collapse of large states in the central Maya Lowlands. The results of this analysis have implications for understanding the draw of the Progreso Lagoon region during this period of societal change, as well its place within changing inter and intra-regional economic systems in the aftermath of the collapse.

Ferguson, T (University of Arizona) [130] Discussant [1] Discussant [197] Discussant

Ferring, Reid (University of North Texas)

[114] *Archaeological Evidence from Dmanisi, Georgian Caucasus, for the Earliest Occupations of Eurasia*

Recent excavations in the M5 sector of Dmanisi show that the site was first occupied ca. 1.85 Ma, and that it was visited repeatedly for over 80 Kyr prior to accumulation of the early *Homo erectus* fossils, dated to ca. 1.77 Ma. Artifact analyses reveal apparent changes in occupational intensity, raw material procurement and artifact function. Dmanisi's archaeological record thus reveals the presence of a well-established population, not transitory colonists. Moreover, Dmanisi's long formation history of serial occupations is comparable to those of much younger Paleolithic sites, provoking speculations on the subsistence strategies of early *Homo* in temperate Eurasia.

Ferris, Jennifer (Washington State University) and William Andrefsky, Jr. (Washington State University)

[160] *Chert Toolstone Provenance, Availability, and Social Geographic Systems in the Owyhee Uplands*
Toolstone sources, distribution, and quarry locations are extremely important for understanding prehistoric land-use strategies. While igneous rocks are routinely assayed geochemically, chert and other silicified rocks of sedimentary origin are seldom evaluated, and if they are, generally produce nondiagnostic chemical results. However, in the Owyhee Uplands, chert genesis is diverse and variable due to unique formation contexts. In this paper, we show first that it is possible to obtain locationally diagnostic geochemical signatures in such contexts. Second, we investigate how these results can inform about the social geographic system existing within this landscape.

Ferris, Neal (University of Western Ontario)

[55] *Viewed From The Edge: An Archaeological Borderland During Early Ancestral Northern Iroquoian Archaeology*

Northern Iroquoian archaeology is often read linearly: ancient communities progressing inevitably towards historic agriculturalist entities. But life lived can be less certain of ultimate outcomes. Insight into how contingent social innovation experienced in this region was arises from patterns seen on the periphery of "harder" archaeological traditions. One such borderland adjacent to northern Iroquoian archaeology was a landscape of tradition and innovation, where communities of a distinct archaeological tradition materially negotiated internal and external social forces. Contingency, experimentation,

unintended consequences and agency all shaped life in a borderland and at the periphery during the rise of northern Iroquoian cultural patterns.

Ferris, Neal [197] see Welch, John R.

Fertelmes, Craig (Gila River Indian Community), Chris Loendorf (Gila River Indian Community) and Letricia Brown (Gila River Indian Community)
[193] *Geochemical Characterization of Vesicular Basalt Outcroppings in the Gila River Indian Community, Arizona*

Recent EDXRF analyses have successfully determined source locations for basalt artifacts, which traditionally were perceived to be too heterogeneous for provenance characterization. This study assesses whether it is possible to reliably characterize and distinguish material from two prehistorically quarried vesicular basalt sources along the middle Gila River in central Arizona. Compositional data for source samples and archaeological specimens are gathered using a Bruker Tracer III-V portable spectrometer. Statistical analyses are employed to assess geochemical variation among the material sources. The results of the study have implications for Hohokam material provisioning strategies, currently predominated by ceramic and obsidian studies.

Fertelmes, Craig [193] see Kelly, Sophia E. [139] see Wright, David K.

Fibiger, Linda [255] see Whittle, Alasdair

Fiedel, Stuart (Louis Berger Group)

[155] *The Clovis-Era Radiocarbon Plateau*
Radiocarbon dates do not change appreciably during a ca. 250-year period preceding the onset of the Younger Dryas (now dated as either ca. 12,850 or 12,650 cal BP). These Clovis-era dates range between 10,900 and 11,050 rcbp. This plateau effect has obvious implications for the rate and direction of Paleoindian migration, the ostensible synchrony of earliest occupations of North and South America, and megafaunal extinction.

Field, David (English Heritage)

[224] *The Emergence of Stone Extraction Sites at the Beginning of the Neolithic in the UK.*

Recent dating programmes have indicated that formal extraction of rock for use as tools occurred before the widespread appearance of many of the monuments that are usually considered markers of the Neolithic in the UK. This paper will attempt to chart the origins of such extraction alongside the environmental impact of rising sea levels and cultural developments.

Field, Judith (University of Sydney) [12] see Garvey, Jillian [45] Discussant

Field, Julie (Ohio State University)

[261] *Subsistence Economy and Settlement ca. AD 1500 in Leeward Kohala*

Recent excavations and survey of the ahupua'a of Kaiholena, Makeanehu, Makiloa, and Kalala have documented several residential complexes that date to AD 1400-1500, which has been established as the earliest period of expansive construction of the Leeward

Kohala Field System. This paper reports on the diversity of residences within the field system and also along the coast, and examines the early development of subsistence economies that contributed to population growth and the expansion of the field system.

[261] *First Chair* [261] see *Ladefoged, Thegn* [261] see *Mills, Peter R.*

Field Murray, Wendi (University of Arizona) and Jason Theuer (Petrified Forest National Park)

[134] *Where Archaeology Meets Paleontology: Fossils as Cultural Resources in Petrified Forest National Park*

The Late Triassic fossils for which Petrified Forest National Park is famous figure prominently in the cultural history of Ancestral Puebloans in the region.

Archaeological research in the park has yielded fossilized teeth, shell, and wood in archaeological assemblages, and recent consultation with Native American tribes indicates that fossils continue to have cultural significance to descendant communities. This research integrates archaeological and ethnographic data in order to elucidate the role of paleontological resources in the cultural history and material worlds of Puebloan groups, and to explore management strategies that accommodate the dual identity of fossils as natural and cultural resources.

Fields, Misty (UNLV), James Watson (Arizona State Museum and School of Anthropology, University of Arizona) and Marijke Stoll (Arizona State Museum and School of Anthropology, University of Arizona)

[237] *An Expanded Taphonomic Approach to Violence and Postmortem Signaling in Early Farming Communities of the Sonoran Desert*

Bioarchaeological analyses of violence often narrowly focus on specific evidence and presenting potential explanations. These studies fail to consider the biocultural complexity contributing to patterns of violence. Here, we utilize an expanded definition of burial taphonomy, considering body decomposition, to test if individuals exhibiting trauma differ in identifiable ways in an early farming community from the Sonoran Desert (circa 2,000-4,000 ybp). A variable matrix is constructed to examine demography, decomposition, post-depositional taphonomic processes, health status, and mortuary treatment. Although numerous community members experienced violence, we suggest specific individuals were selected for differential mortuary treatment as a form of postmortem signaling.

Fields, Shawn and Eleanor King (Howard University)
[138] *Unearthing the History of a Ghost Town: A Report on Recent Excavations at Hermosa*

In the 2010 field season the Gila Archaeological Project conducted a GPR survey followed by excavations in the northwest part of the site of Hermosa, a former mining town now abandoned. These excavations painted very different pictures of how that part of the site was used. While the northernmost excavation yielded many domestic remains, the second one, located east of a fire feature—a possible hearth, contains what appears to be the edge of a charcoal pit. This poster will compare and contrast the two excavations and explore the function of the features and open spaces they are associated with.

Fierer-Donaldson, Molly (Harvard University)

[128] *Teotihuacan Warrior Costumes in Classic Maya Tombs*

Understanding the nature of interaction between the Maya and Teotihuacan has engaged scholars for decades. At the Maya site of Copan, Honduras, royal and elite burials from the Early Classic period have been found containing items described as part of a "Teotihuacan Warrior Costume". Previous analysis focused on the objects as evidence of a relationship with Teotihuacan. Now, however, multiple tombs, including one in 2008, have been excavated containing pieces of this regalia. Taken together these contexts can begin to explain why there are individuals buried at a Maya site with the military dress of a foreign city.

Figol, Timothy [19] see Malainey, Mary

Figueroa, Alejandro (University of South Florida)

[31] *Examination of Site and Settlement Patterns in the Bay Islands of Honduras through GIS Analysis*

Basic questions regarding the political organization and cultural affiliations of the prehispanic Bay Islanders of Honduras have long remained unanswered due to a lack of sustained archaeological research in the area.

However, even though additional research is needed, spatial informatics tools, such as GIS, can help us integrate and analyze available data in order to begin to answer questions regarding settlement patterns, site planning, and trade routes. This poster presents some of these applications in an effort to suggest future directions for research in northern Honduras.

Figueroa, Antonia, Sarah M. Wigley (UTSA) and Laura J. Levi (UTSA)

[165] *Household Production Strategies and Resource Management at San Estevan, Belize*

This paper discusses the results of an analysis of chipped stone from the Prehispanic site of San Estevan, Belize. Variation in residential architecture at San Estevan has been attributed to differences in household agrarian practices and associated organizational strategies. The result of the chipped stone analysis is used to determine if such variation is emulated in chipped stone production and use at the household level. Nuances in lithics industry might shed light on discontinuities in the occupational histories of different household groups at this Maya Lowland site.

Figueroa, Valentina [224] see Salinas, Hernan P.

Figueroa Flores, Alejandra (Northern Arizona University)

[154] *Increasing the impact of museums: education programs as tools for development*

This paper focus on the potential of education programs for increasing and complementing the impacts museums have in their social context. The very definition of museum as set forth by the International Council of Museums includes an educational obligation for these institutions, and over time the concept of what constitutes an educational experience has changed. The diversity of Peruvian cultural heritage offers many opportunities to explore how educational programs have potential to increase the impact of museums, approaching cultural heritage to a larger number of people and contributing to the formation of local, regional, and national processes of

identification.

Filini, Agapi (El Colegio de Michoacán)

[98] *Transformations of the human social body in Northern Michoacán: from the Preclassic to the Classic*
Drawing on physical and ritual representations of the human form such as figurines, design motifs, and mortuary rituals, individual and assembly activities are identified in order to explore their content and differential function. It is suggested that the creation of shared images of the body and specific "social skins" allowed for the reproduction of political hierarchies. A certain corpus of motifs is clearly related to the local ideational sphere whereas the incorporation of foreign forms and different styles was used as a means of power accretion. Inferences about identity and agentive practices are made.

Findlay, Jeff [225] *see Terry, Richard E.*

Finley, Judson Byrd [57] *see Scheiber, Laura L.*

Finney, Bruce [180] *see Commendador, Amy S.*

Fischer, Christian (Cotsen Institute of Archaeology, UCLA)

[220] *Ancient Stone Sculptures: Materials Identification and Weathering Studies using a Multi-scale and Multi-analytical Approach*

Stone sculptures represent an important corpus of artifacts that have often survived the effects of time and their technical study provides the means for a better understanding of the social organization, religious beliefs and level of craftsmanship of ancient cultures. Beside style and iconography, the scientific analysis of the constitutive materials and their alterations is essential for the sourcing of raw materials and the conservation of the sculptures. This approach will be exemplified with the study of ancient stone sculptures from Cambodia and the Easter Island using various analytical techniques such as optical and electron microscopy and X-ray fluorescence spectrometry.

[220] *Discussant [220] Third Organizer*

Fischer, Christian [220] *see Kakoulli, Ioanna*

Fish, Paul (Arizona) and Suzanne Fish (University of Arizona)

[52] *Convergence, Continuity, and Change: A View from the Tucson Basin*

"Collapse" is a holistic concept with unequivocal implications that necessarily incorporates a highly variable mosaic of change when applied to cultural phenomena as far-flung as Hohokam occupations. What are the essential qualities and characteristics that register collapse? How do notions of chronology affect these perceptions? We use the Tucson Basin as a central case study to examine Classic period continuities and realignments both in terms of contemporary dynamics and as a lead-in to contact-period transitions. We focus on cross-cutting influences and take a broad view of regional context that considers the Mexican Northwest as well as the U.S. Southwest.

Fish, Paul [199] *see Fish, Suzanne K.*

Fish, Suzanne (Univ. of Arizona) and Paul Fish (University of Arizona)

[199] *Alternative Models for the Organization of Labor and Production*

Beginning at the level of households, how did ancient farmers of the southern U.S. Southwest organize labor and the disposition of harvests? Archaeological evidence offers a variety of potential answers, as does the ethnographic record of later indigenous cultivators in this region and beyond. Can archaeologists effectively evaluate these alternatives? How might these agricultural modes relate to other societal configurations and motivations?

Fish, Suzanne [52] *see Fish, Paul R.*

Fisher, Chelsea (College of Wooster)

[34] *Landscapes of Ambition: Understanding Classic Maya Ceremonial Centers as Political History*

Classic Maya elites attained and sustained power through diverse strategies, including the deliberate manipulation of iconography in public ceremonial centers. In this presentation I examine how regional and temporal variations of this distinct type of elite strategy reflect a particular community's position within the Classic Maya sociopolitical network. Through an integration of iconographic analysis, ethnography, and social theory, the built environment of Maya ceremonial centers is deciphered as political history. The focus of this research is on the southern Maya region.

Fisher, Christopher T. (Colorado State University)

[58] *Beyond Thresholds and Tipping Points: New insights into the Origins of the Purépecha (Tarascan) Empire*

Here I present preliminary results from the Legacies of Resilience: The Lake Pátzcuaro Basin Archaeological Project, that yield new insights into the origins of the Late Postclassic (AD 1350-1520) Purépecha (Tarascan) Empire. Specifically this paper will explore the implications of dramatic demographic shifts, environmental change, and massive agro-engineering that took place just prior to State/Empire formation.

[58] *see Pezzutti, Florencia L. [58]* *see Bush, Jason [58]*
see Ahrens, Corrie L. [58] *see Torvinen, Andrea L. [58]*
see Uriarte Torres, Alejandro J. [58] *see Cohen, Anna*

Fisher, Jack (Montana State University), Helen Keremedjiev (University of Montana), Michael Brody (Montana State University) and Jeanne Moe (Bureau of Land Management)

[113] *Archaeological Science for All: Archaeology and Science Literacy*

Science literacy in the U.S. is a topic of national concern. This project seeks to ascertain the learning efficacy of culturally relevant archaeological programming for audiences in informal science learning settings. We administered a national, three-round, online Delphi survey to 121 experts in archaeological science, informal science education, and archaeology education to determine essential scientific archaeology knowledge, skills, and dispositions for effective archaeology education and science learning. This survey also included questions on ecology and culture, and their relationship to archaeology. Results of this research will be presented, along with future directions for this project.

Fisher, Jacob (CSU-Sacramento)

[255] *Climate Change, Isotopes, and Mountain Sheep Hunting at Five Finger Ridge, Utah*

At Five Finger Ridge, a Fremont site in central Utah, the relative abundance of mountain sheep (*Ovis canadensis*) decreased during a period of increased summer temperatures. I use stable isotopes (strontium, oxygen, and carbon) to test whether this reduction resulted from increased opportunity costs relating to maize horticulture or shifting geographic ranges of sheep populations. The data show that sheep were acquired from new locations and consumed a larger quantity of C4 grasses during this period. The implications of these findings are significant both for our understanding of Fremont foraging and for understanding mountain sheep responses to climate change.

Fisher, Philip (Washington State University) and Kathryn Harris (Washington State University)

[257] *A New Measure of Curation for North American Hafted Bifaces*

Determining the amount of curation stone tools have undergone is essential to understanding a tool's use-life. A number of indices have been developed to measure curation and retouch of stone tools. However, the application of these measures to North American hafted bifaces is problematic. The Thickness Index of Reduction was developed and tested by analyzing three hafted bifaces after identical stages of use and retouch to assess its applicability on hafted bifaces from the archaeological record. Early results indicate strong potential for this index to measure the amount of curation on North American hafted bifaces.

Fisher, Philip [257] see Harris, Kathryn A.

Fisher, Victor (Towson University)

[154] *Images of Environmental Archaeology*

100 undergraduate students were asked to indicate what they thought was meant by the expression "environmental archaeology." Their varied and informative responses are summarized. Of special interest is how this information relates to last year's nationwide survey of the actual content of this course as it is taught at American universities.

Fisman, David N. [72] see Devault, Alison M.

Fitzgerald, Richard (California State Parks) [194] *First Chair*

Fitzhugh, Ben (University of Washington) and Debra Gold (St. Cloud State University)

[53] *On Delayed Social-political Responses to Subsistence Intensification: Comparisons from the North Pacific and Mid-Atlantic*

Inspired by John Speth's work on the forager-farmer transition in the U.S. Southwest and his broad interest in Anthropological Archaeology, we examine the social and political implications of subsistence intensification in two distinct regions of North America: Kodiak, Alaska and interior Virginia. In both regions intensification precedes the emergence of some marked social complexities by significant intervals. Because many models predict social competition and complexity to emerge rapidly from

resource intensification, delays of 500-1000 years in social response indicate the need for better understanding of the processes involved. This issue is explored by means of case comparison.

Fitzpatrick, Scott M. [115] see Kappers, Michiel **[163]** see Casto, Kara I.

Fitzsimons, Rodney (Trent University), Evi Groggianni (University of Akron) and Joanne Cutler (University College, London)

[167] *Something Borrowed, Something New: Possible Archaeological Evidence for Foreign Brides as Catalysts for Acculturation at Ayia Irini, Kea*

Though such scenarios were no doubt commonplace in antiquity, and indeed are still widespread in many cultures today, mobility in the guise of marital arrangements is a topic that is seldom broached in the context of the Bronze Age Aegean. The present paper attempts to address this lacuna in the scholarly literature and explore the possibility of intra-Aegean bridal alliances by examining the archaeological and iconographic evidence, as well as historical and ethnographic parallels, for foreign brides at the site of Ayia Irini on Kea and elsewhere in the Bronze Age Aegean.

Flad, Rowan (Harvard University)

[23] *Historiography and the Topography of Archaeological Research in the Upper and Middle Yangzi Region*

The history of archaeology in China has many beginnings. This history can be divided into four stages: a period of antiquarianism through the early 20th century; the emergence of scientific archaeology following the Qing Dynasty; a shift to socialist-inspired archaeology in 1949; and an opening up starting in the 1980s. Due to specific histories of fieldwork, and relationships to traditional histories, it is instructive to examine how archaeology emerged and developed in specific regions. This paper examines the manifestations of these stages along the Middle and Upper Yangzi and shows a persistent peripheralization of the Sichuan Basin until recent years.

Fladd, Samantha (University of Arizona)

[136] *The Social Power of Jaws: A Case Study of Isolated Mandibles and Maxillae in Chaco Canyon, New Mexico*

This poster surveys the archaeological record to highlight the occurrence of mandibles and maxillae in isolated contexts in the Americas. Theories about the significance of human remains to societies are used to interpret the prevalence of these occurrences cross-culturally. The potential for the appropriation of social power by certain individuals or groups through knowledge of and access to these objects is analyzed given their unexpected locations. This social potential is then used to explain the appearance of isolated mandibles and maxillae in Chaco Canyon, New Mexico. Lastly, some general trends in the analysis of human remains archaeologically are reconsidered.

Flanigan, Kelli, Colin Grier (Washington State University), Sarah Runnells (Washington State University), Susan Lukowski (Washington State

University) and Brian M. Kemp (Washington State University)

[178] *Molecular Species Identification of Salmonid Vertebrae: Reconstructing Salmon Fisheries in the Salish Sea of the Northwest Coast*

The species structure of pre-contact salmon fisheries on the Northwest Coast has been inadequately characterized due to our inability to speciate salmon based on bone morphology. We used ancient DNA (aDNA) techniques to obtain species identifications for a zooarcheological assemblage from an 1800-year old plankhouse in coastal southwestern British Columbia. Of the 153 elements analyzed, 72 were sequenced. Three species known to inhabit the Salish Sea were substantially represented, including chum, sockeye and pink, with chinook and coho only nominally present. These results are discussed in relation to alternative models for species representation in intensive salmon fishing economies.

Flaws, Andrew [261] *see Ladefoged, Thegn*

Flensburg, Gustavo, Gustavo Martinez (CONICET-INCUBA. Facultad de Ciencias Sociales, UNCPBA), Pablo Bayala (ANPCyT-INCUBA. Facultad de Ciencias Sociales, UNCPBA) and Mariela González (CONICET-INCUBA. Facultad de Ciencias Sociales, UNCPBA)

[71] *Secondary burials and body treatment in the eastern Pampa-Patagonian transition of Argentina*

An outstanding characteristic of the lower basin of the Colorado River is the abundant record of human burials. These are usually found in different contexts, such as formal inhumation areas or are part of domestic, multiple activity sites. Particularly, human remains that make up secondary burials have been subject to intensive treatment (e.g.; sorting different skeletal parts, cut and defleshing marks, red-ocher painted bones, etc.). In this paper, the significance of body manipulation is discussed in order to deal with site function, chronology, and reoccupation of places through time as part of a complex social practice.

Fletcher, Roland (University of Sydney)

[90] *Angkor: Infrastructure, Sacred Management and the Absent State*

Greater Angkor is notable for the hundreds of small shrines which appear to be randomly distributed across its suburbs. They are related to clusters of housemounds and water tanks and their adjacent rice fields not to the vast network of canals and reservoirs. Though the state built the network no central administration of water is evident yet rice was collected as tax and tithe. How then was water managed locally, what is the relationship between small shrines and rice, and how was rice supplied to the state and the major temples?

[90] *First Chair [90] Second Organizer*

Flexner, James (Washington and Lee University)

[153] *Top-Down Maps, Bottom-Up Histories: The Plan View and Archaeological Ways of Seeing*

The plan view is a staple representation of archaeological places at many scales. It is a cartesian mapping of space looking down on the remains of human activity, which some might deem a "dominating" point of view. Yet a populist turn in archaeological thought,

emphasizing the everyday experience of non-elites, has not caused us to cease using such a view point from the top to understand the lives of the masses. The question that remains then, is how and why can we use these "top-down" views of archaeological remains to understand societies from a "bottom-up" perspective (or can we)?

[153] *First Chair*

Flores-Fernandez, Carola (UCSB)

[263] *Human Impact on Ancient Coastal Ecosystems around Santa Cruz Island, California: A Methodology to Combine Ecological, Archaeological, and Paleoclimatic records*

I present a novel methodology that integrates ecological, archaeological and paleoclimatic data in the study of past marine ecosystems and the role of human harvesting in resource variation through time around Santa Cruz Island, California. Preliminary data from Willows anchorage's shell midden is used to reconstruct ecological conditions of intertidal communities around the Island during prehistoric human occupation, and to characterize human shellfish harvesting and its impact on intertidal communities. This methodology reconstructs past marine ecosystems based on local and regional conditions, crucial for biological modeling of future climate change scenarios and for marine resource management initiatives regarding shellfish species

Florey, Lynda [67] *see Folan, William J.*

Fogelin, Lars (Univ. of Arizona)

[189] *Fattening the Buddha: Embodied Icons in South Asian Buddhism*

Beginning in roughly the second century CE, Buddhists in South Asia began creating Buddha images. Rather than mute recipients of Buddhist veneration, South Asians viewed Buddha images as active agents in the specific socio-historical contexts in which they lived. The earliest images were thin or muscular. Over the next millennium the Buddha became progressively more corpulent. At the same time, new forms of Buddhism (Mahayana and Vajrayana) emerged and became established in South Asia. This paper explores how the growing heft of the Buddha images was recursively entangled with changes in South Asian Buddhist theology in the first millennium CE.

Foias, Antonia [85] *see Moriarty, Ellen Spensley*

Foin, Jeremy (University of California, Davis), Christyann Darwent (University of California, Davis) and Frederic Dussault (Université Laval)

[159] *Archaeological Investigation of the Thule Sequence at Cape Espenberg, Alaska*

The Cape Espenberg Project undertook excavation of three large houses on ridges four, five and six of the beach ridge sequence. These houses range from early Thule (ca. AD 800) to late, pre-contact Thule (ca. AD 1400). The most interesting change in house design is the orientation and length of the tunnel, with early houses having longer, deeper tunnels oriented toward Kotzebue Sound and later houses having shorter, shallower tunnels oriented toward the Chukchi Sea. Significant finds from these houses include an eyed copper needle, various styles of ceramic pots and lamps, and temporally

distinct harpoon heads and arrow points.

Folan, William (Univ. Autónoma de Campeche), María del Rosario Domínguez Carrasco (Universidad Autónoma de Campeche), Raymundo González Heredia (Universidad Autónoma de Campeche), Abel Morales López (Universidad Autónoma de Campeche) and Lynda Florey (Universidad Autónoma de Campeche)

[67] *Oxpemul, Campeche, Mexico: From Tributary City to City State*

This paper covers advances on the sociopolitical organization and settlement pattern of Oxpemul, its ceramic, hydrology and paleoclimate to the 9th Century AD including its relations with the Kan (Chan) dynasty of Calakmul. A 1250 meter chibal be (lineage) road connects its two major civic-ceremonial-defensive centers sharing a royal court and 23 stelae with the Stone Throne Emblem Glyph dating from the 5th Century AD as well as a canal and camellones combined with an interpretation of Oxpemul's dynastic texts. Ceramic data from the Middle Preclassic onward indicates continued occupation for over 1500 years.

Foley Winkler, Kathleen (University of Wisconsin-Milwaukee)

[141] *Oneota and Langford Mortuary Practices from Eastern Wisconsin and Northeast Illinois*

Two archaeologically identified mortuary programs for Developmental Horizon Oneota in southeast Wisconsin suggest different underlying social and/or political structures. Three key issues are addressed. First, a case is made for the ways that burial data are expected to inform about social, political and economic structures in the late prehistoric Midwest United States. Second, eastern Wisconsin Oneota burial programs are compared with contemporaneous Langford and Oneota sites of northern Illinois. Last, data collected provide a regional discussion of culture contact and diversity and are used to examine whether or not violence was present among the Wisconsin Oneota sites.

[141] *First Chair*

Font, Christine [82] *see Everson, Gloria E.*

Fontes, Lisa (University of New Mexico)

[2] *Thinking and Things: A Review and Evaluation of Cognitive Interpretations of the Middle Paleolithic Archaeological Record*

Some recent archaeological literature concerning the lifeways of Neanderthals leading to the Middle to Upper Paleolithic transition has suggested that a cognitive distinction is at least partially responsible for the replacement of Neanderthals by modern humans. This paper will review arguments made by archaeologists, psychologists, and neuroscientists about cognitive developments among hominins during the Middle Paleolithic and their reflections in the archaeological record. These ideas will be evaluated using examples found in Middle Paleolithic lithic technology. Further, this paper will evaluate the relevancy of cognitive arguments to our archaeological understanding of Neanderthal behavior and the Middle to Upper Paleolithic transition.

[2] *First Chair*

Ford, Anabel (UCSB)

[153] *Maya Population and the Traditional Maya Milpa-Forest Garden*

It is received wisdom that the Maya destroyed their environment to produce sufficient maize for their population. No one has shown land use patterns of the Late Classic Maya nor demonstrated that maize production resulted in the devastation of the Maya forest and the fall of the civilization. Using the GIS to develop a predictive model of Maya residential settlement and propagating patterns across a 1300 sq km El Pilar area, we show that traditional milpa and the Maya forest garden cycle can indeed support the Maya population and that environmental destruction is not the consequence of traditional maize production.

[85] *Discussant [238]* *see Jones, Deanna L.*

Ford, Ben (Indiana University of Pennsylvania) and Peter Leach (John Milner Associates, Inc.)

[105] *Through-Ice Ground Penetrating Radar for Shipwreck Identification*

It is theoretically possible to record buried and submerged shipwrecks using a ground penetrating radar unit towed on the surface of a frozen water body. This possibility is explored by discussing a survey to detect and map a 75-foot long, War of 1812 gunboat wreck buried in a sandbar and submerged under 5 feet of water in Lake Ontario. The methods employed, survey results, interpretations, and applications to maritime archaeology will be discussed.

[127] *Discussant*

Ford, Richard [53] *Discussant*

Forest, Marion (University of Paris 1 Pantheon Sorbonne)

[58] *Constructing social space (part 2): multi-scalar organization on the Zacapu Malpaís*

This paper questions the interaction between built and natural spaces, and the construction of a social landscape. Recent research on the Zacapu Malpaís, Northern Michoacán, has identified multiple scales of settlement, from domestic areas to the entire pre-Tarascan urban complex at the site. Using a multi-scalar approach, I examine the role of spatial structure in the social organization of the extended urban settlements.

[58] *First Chair [58]* *Second Organizer*

Forman, Steven [139] *see Wright, David K.*

Formosa, Sue [232] *see Schaepe, David M.*

Forrest, Crystal (University of Toronto)

[55] *Cross-border Interaction in Iroquoian Bioarchaeological Investigations*

The study of Iroquoian bioarchaeology is valuable as it sheds light on community health in the past; however, attaining adequate sample sizes can be challenging. This paper suggests two ways in which to improve this situation: treating Ontario and New York Iroquoian groups as a single biological entity; and making use of data previously gathered from repatriated collections. Communication and sharing of information across borders is vital to ensuring the ability to study the bioarchaeological characteristics of past populations, and it is argued that this cross-border sharing acts to augment sample size without compromising the validity

of the results.

Forsman, Leonard A. [178] *see* Trudel, Stephanie E.

Forte, Maurizio (University of California, MERCED)
[146] *3D-Digging at Çatalhöyük*

Cala Huyuk is one of the most famous archaeological sites in the world and across years of research and excavations it has become an open air laboratory where research teams from the entire world can experiment different methodologies, test theories and comparing scientific results in a multidisciplinary environment. This project is aimed to document, analyze and interpret the archaeological excavation in 3 dimensions, recording all the phases of digging 3D by laser scanners, visualizing the models in stereo during the fieldwork and finally reconstructing the entire process for virtual collaborative environments.

[110] *Discussant*

Fortin, Louis (Washington State Univ.)

[257] *Lithic Investigations and Spatial Patterning in the Moquegua Valley, Peru*

The preliminary study looks to discern the spatial variability in lithic material procured and utilized within the Moquegua Valley during the Middle Horizon (A.D. 600 – 1000). During the Middle Horizon both Wari and Tiwanaku state-level societies occupied the valley. This study addresses site locations and their relation to lithics by incorporating a number of spatial statistical analyses. The significance of site clustering can be identified through methods such as spatial autocorrelation (Moran's I) and multi-distance analysis (Ripley's K). In addition, the integration of a least-cost path model will aid in identifying potential routes utilized to acquire lithic resources.

Foster, John (California State Parks/ Indiana University), K. Harley McDonald (Indiana University), Charles Beeker (Indiana University) and Geoffrey Conrad (Indiana University)

[260] *Let There Be Light in the Dark Zone: Insights into Taíno Cave Paintings in the Eastern Dominican Republic*

The Taíno culture area features some of the most numerous Dark Zone paintings in North America, yet major questions remain about their origin, chronology and purpose. This paper examines characteristics of the Jose-Maria style pictographs from several major limestone cavern sites in eastern Hispanola and presents the first radiocarbon dates from pigments in Cueva del Puente in the East National Park. Initial dates imply the elaborate rock art style may precede development of Classic Taíno culture in the area. Implications for future research are presented.

Foster, John [69] *see* Conrad, Geoffrey W.

Foster, Joshua

[244] *Mimbres Mortar Holes, what were there purpose?*

Bedrock grinding features are commonly associated with multi-component sites in the Mimbres Valley of southwest New Mexico. Most known clusters are associated with hard bedrock substrates and archaeologists assume they were used to grind seeds such as mesquite beans. Recent excavations at the Kipp Ruin on the lower Mimbres River, however, have

revealed dozens of these features excavated into softer bedrock caliche suggesting alternative functions. Were these features all used for processing food? Or were they postholes for as yet unrecognized structures (ramadas, raised granaries, shallow pit houses or stockades)? This paper presents a functional analysis of these features.

Foster, Thomas (Univ. of West Georgia) and Matthew Boehm (University of Tennessee)

[240] *An analysis of Native American trade from factory records of the early nineteenth century in Georgia*

We conducted an analysis of economic transaction records from the Fort Wilkinson Factory Stores in central Georgia in an attempt to understand trade behaviors by the Native Americans of the southeastern United States. Between February 4, 1804 and November 29, 1806, Factory personnel recorded 2,168 trade transactions. During this period, 38,226.5 deerskins and skins, 482 hides and rawhides, and 569 furs entered Fort Wilkinson. We analyze the month by month trends in exchange and compare the trade good assemblages to archaeological sites that represent Creek occupations that date to the same time period in Georgia and Alabama.

Fournier, Patricia (Escuela Nacional de Antropología e Historia) and M. James Blackman (Smithsonian Institution)

[200] *Indigenous Post-conquest Ceramics from Mexico-Tenochtitlan and Tlatelolco: Technological and Stylistic Syncretism*

As Thomas H. Charlton emphasized is his research, the persistence of indigenous material culture is evident in the Basin of Mexico during the Early Colonial period, both in the capital of the viceroyalty where most of the European settlers lived and in the neighboring Indian town of Tlatelolco. Based on the study of ceramic collections, this paper shows that in the case of orange, red and glazed wares dating to the Early Colonial period, Late Aztec traditions took on new technological and stylistic forms with innovative and hybridized values to suit the needs of the moment in Colonial society.

[200] *Discussant* [200] *Second Organizer*

Fournier, Patricia [21] *see* Spence, Michael W. [21] *see* Mondragon, Lourdes

Fowler, Adriane (AECOM)

[50] *Evaluating Historic Setting Integrity of National Historic Trails*

Evaluating the historic settings of long linear historic sites such as trails presents many challenges and requires a careful balanced approach taking into account both the fine-grained artifacts of the trail as well as its relationship to the broad context and surroundings. This paper discusses the development of a methodology for documenting and evaluating historic setting integrity for National Historic Trails that can be applied to other linear historic sites. A National Park Service cultural landscapes approach was customized and coordinated with both visual resource and cultural resource inventories to evaluate the trail setting's integrity from an historical perspective.

Fowler, Benjamin [262] *see* Pitblado, Bonnie Lynn

Fowler, Catherine (University of Nevada) [18]

*Discussant***Fowler, William (Vanderbilt University)**

[200] *Archaeological Approaches to Indigenous Culture Change in Colonial El Salvador*

Results of two major historical archaeological projects directed by the author in El Salvador are presented, and the influence of Thomas Charlton's work in central Mexico on the research design of these projects is discussed. The Izalcos Archaeological Project was regional in scope and studied indigenous culture change in the long term during the Colonial period and especially in the sixteenth century. The Ciudad Vieja Archaeological Project focused on a single site, the Conquest town of San Salvador, and project members have studied the impact of conquest and indigenous responses in the region within a relatively short span.

Fowles, Severin (Barnard College, Columbia University)

[53] *The Art of War in Eighteenth Century Taos*

Against the popular image of Native Americans as cold societies slavishly following tradition, the adoption of the horse by indigenous communities on the Plains and in the eastern Great Basin presents us with one of the most profound examples of self-authored cultural transformation. In the decades following the horse's introduction, tribes such as the Ute, Apache, and Comanche refashioned themselves as equestrian warrior societies with remarkable geopolitical influence across central North America. Here, I report on a newly discovered rock art tradition in northern New Mexico that serves as an elaborate archive of these dynamic and militarily potent societies.

[211] *see Wilkinson, Darryl A.*

Frachetti, Michael (Washington University)

[54] *Expanding worlds and local Bronze Age communities along the Inner Asian Mt. Corridor*

The second millennium BC has been defined as a period of unprecedented expansion in communication and interaction across Central Eurasia. By comparison, the third millennium BC has remained relatively unknown, largely due to limited archaeological evidence. For this reason, communities have been conceived as isolated in this time period. This paper presents new archaeological evidence and recent discoveries from the formative third millennium in Inner Asia, to illustrate the incipient stages of interaction that extended widely across Eurasia linking domestic economies from China to SW Asia.

Franco, Teresa (Vanderbilt University)

[233] *Chinchorro Maritime Foragers in the Coastal Camarones Valley of Northern Chile: Seasonality and Paleocology*

The Chinchorro culture of the north coast of Chile (7000-3500 BP) is best known for its maritime economy and mummification of the dead. Not known is how the Chinchorro people articulated with and managed both the maritime and desert coast of the region to develop their complex culture. This poster presents growth-ring and isotope analyses of marine shells (*Concholepas concholepas*) from the coastal site of Camarones-14 to document occupational seasonality. Identifying the seasonality of shellfish contributes to our understanding of Chinchorro mobility/sedentism and early cultural

complexity

Frank, Barbara [166] *see Dean, Emily M.*

Franklin, Elaine (Western Carolina University) [268]

Discussant

Franklin, Kathryn (University of Chicago)

[140] *Making a Space of Trade in the Medieval Armenian Highlands: An Integrated Approach to Political Economy and Landscape*

This paper presents the results of archeological and historical research on the political economy of the Armenian highlands in the context of long distance trade during the medieval period (600- 1400 AD). Systematic survey in the Kasakh valley of northern Armenia has provided singular insights into the spatiality of long-distance trade relationships and local sovereignty. Historical discourses from the period suggest that social actors in the highlands participated in and produced a particular conceptual world through interaction and exchange. This paper examines the archaeological landscape as the intersection both between historical discourses about place and past material practice, as well as between the local and large-scale.

Franklin, Reno (Yocha Dehe Wintun Nation) [1]

Discussant

Franz, Ingmar [26] *see Biehl, Peter F.*

Frederick, Gay [232] *see Coupland, Gary*

Freeburg, Adam (University of Washington) and Shelby Anderson (University of Washington)

[159] *Cape Krusenstern Revisited*

The collection of high resolution spatial data at Cape Krusenstern allows precise and efficient mapping of archaeological features and collection locations across the beach ridge complex. By establishing spatial and chronological relationships between new data and those published by Giddings and Anderson (1986) we are able to build on previous work, broadening understanding of Arctic culture evolution of the late Holocene. Here, we consider new findings—including faunal data and feature locations—from well known settlements at the Cape and discuss their contribution toward our understanding of human-environmental dynamics in the Arctic.

Freeburg, Adam [263] *see Anderson, Shelby L. R.*

Freeman, Jacob (Arizona State University)

[36] *Patterns of Crop Species Richness in Agricultural Systems: Implications for the intensification of farming*

This poster presents patterns of crop species richness in subsistence level agricultural systems at a global scale. It is argued that commitment to farming primarily restricts crop species richness. However, once a threshold in commitment to farming is crossed, crop species richness is primarily constrained by the Holocene climate and evolutionary history of domesticated plant lineages. The implications of this argument for patterns of change in agricultural societies is discussed, and trade offs between resource diversity in foraging and farming systems are explored.

Freeman, Jacob [199] *see* **Hard, Robert J.**

Freidel, David (Washington University in St. Louis)
[191] *Discussant* [221] *Discussant*

Freidel, David [157] *see* **Fridberg, Diana N.**

Freiwald, Carolyn (University of Wisconsin), Jason Yaeger (University of Texas at San Antonio), Jaime J. Awe (Belize Institute of Archaeology), Christophe Helmke (University of Copenhagen) and James Garber (Texas State University)

[56] *Local Nobility, Imported Ceramics: Isotopic Insights into Mortuary Treatment and Political Authority in the UBRV*

An isotopic analysis of 13 individuals in nine burials recovered from Xunantunich, Cahal Pech, and Baking Pot show a complex relationship between foreign grave goods, burial context, and origin. Late and Terminal Classic nobles interred with non-local artifacts each had local strontium values. Local values also are present for a revered ancestor at Cahal Pech, who received unusual burial treatment. Other atypical burial patterns, suggestive of sacrifice, were linked to five individuals at Xunantunich with non-local Central Peten-like strontium values. Burial treatment and grave goods serve as complex statements of political relationships rather than simple indicators of origin.

French, Kirk (Pennsylvania State University) and Jason De Leon (University of Michigan)

[154] *Sleeping with the Enemy: A Lesson in Archaeological Ethics and Television Production*

This paper provides an overview of the encounter between two academic archaeologists and a media production company interested in creating a non-fiction, reality based, television show. The intent was to produce a fast-paced, entertaining, and educational program with the goals of altering the public perception of archaeology and highlighting the importance of archaeological conservation. The authors' found themselves unprepared for a persistent battle of balancing entertainment and archaeological ethics in the world of corporate television. Here we share our learning experiences as a cautionary tale to those who may find themselves in similar situations.

[154] *First Chair*

Freund, Kyle (McMaster University), Tristan Carter (McMaster University) and Daniel Contreras (Stanford University)

[63] *Ancient Obsidian Exploitation in the Mediterranean: Giali Reexamined*

The archaeological importance of obsidian from the Greek island of Giali during the Mesolithic through Bronze Ages is relatively minimal when compared with other eastern Mediterranean sources. Through the use of x-ray fluorescence technology (EDXRF) and Geographic Information Systems (GIS), this project chemically characterizes geological samples from Giali obtained during the summer 2010 field season, explores the geological history of the island, and situates it within a larger spatial and cultural framework. This allows for a more comprehensive understanding of the various contexts under which ancient obsidian exploitation occurred, both on Giali and throughout the eastern

Mediterranean.

Friberg, Christina (American Museum of Natural History)

[193] *Shell Sourcing with pXRF: Elemental analysis of archaeological shell*

Shell sourcing projects demonstrate that no matter where a shell artifact is found—whether a trade good or an object of local manufacture—its chemical composition will be a clue to its original source within a regional context. This preliminary study takes a closer look at the difference in shell chemistry between estuarine and salt-water marsh bivalves as well as how shell chemistry changes temporally. This paper presents the chemical analysis of archaeological and modern shells, which evaluates X-ray Fluorescence Spectrometry as a non-destructive method for shell sourcing and the implications for future studies on shell artifact trade.

Fridberg, Diana (Washington University in St. Louis) and David Freidel (Washington University in St. Louis)

[157] *Thinking about Turtles at El Perú-Waka', Petén*
Mary Pohl's melding of zooarchaeology and iconography to interpret animal meanings is one of her enduring contributions to Maya archaeology. In this spirit, we investigate the roles of Testudines. The site of El Perú-Waka' is located in the Maya Biosphere Reserve, a region home to numerous species of symbolic and economic importance to the ancient Maya. We discuss the importance of turtles to the ancient residents of El Perú as revealed by zooarchaeological and iconographic analyses. These lines of evidence sustain the argument that at El Perú turtles were not only good to eat, but good to think.

Friedman, Elizabeth (Illinois Institute of Technology), Lynn Swartz Dodd (University of Southern California), Carlo Segre (Illinois Institute of Technology), Sarah Butler (University of Southern California) and Jon Almer (Argonne National Laboratory)

[220] *Arrowheads and Projectile Points from the Ancient Middle East: Indicators of Regional Metalworking Tradition and Imposed Imperial Demand.*

Copper alloy projectile points from five ancient sites (Ta'yinat, Judaidah, Çatal Höyük, Megiddo and Persepolis) are examined to provide information on technological organization and provisioning systems of the Assyrian and Persian empires. Synchrotron-radiation x-rays facilitate non-destructive bulk elemental analysis and phase characterization. This permits comparison of metal industries during periods of local hegemony and imperial socio-political control, providing crucial empirical data that enable us to address questions for which only partial and largely unreliable data are available. The interdisciplinary team of scientists relies on collaboration with archaeologists Heather Snow [Tayinat], Marina Pucci [Çatal Höyük], and epigrapher Matthew Stolper [Persepolis].

[220] *Second Chair*

Fries, Eric [15] *see* **Connell, Samuel V. [123]** *see* **Arnold, Jeanne E.**

Friesen, Max (University of Toronto) and Lauren

Norman (University of Toronto)

[159] *Migration and privation: a short-term Thule Inuit occupation at the Pembroke site, Victoria Island*
The Pembroke site, on Victoria Island in arctic Canada, is the earliest Thule site yet identified in its region. Several lines of evidence indicate a very brief occupation, and as such the site appears to have been occupied by Thule people in the process of migrating. In this paper, faunal, architectural, and artifactual data are assembled to provide insight into the nature of a migrating Thule group. The picture is one of a tightly organized community of five families centred on a communal structure (karigi), which may have faced a difficult winter while at Pembroke.

[159] *First Chair*

Frink, Liam (University of Nevada Las Vegas)

[241] *The Political Economy of Native Alaskan Children and Religious Colonialism*

Although Native children were one of the primary components of colonial change, they have been fairly neglected by researchers. Alaskan children were a primary source of labor for the early to mid 20th century Jesuits. Children processed enormous amounts of foods such as fish for subsistence and commercial use. Child labor was the backbone of the religious arm of the colonial project and yet these practices have not been examined—relegating this complex history to Fogelsons' silenced "non-event". I explore the experience of these children with archival records and interviews with Yup'ik adults who lived and worked at the missions.

Fritz, Crystal (Independent Scholar)

[13] *The economic role of elites in pre-Islamic southeastern Arabia*

There is solid evidence for the existence of elites in southeastern Arabia during the first millennium BCE, including specialized buildings, luxury goods and ritual ceramics. Their economic role, however, is unclear. Status divisions are conspicuously absent in burials and there is evidence that they did not control the production and exchange of major commodities. In this paper, I will explore the archaeological evidence for the economic role of elites in Iron Age II southeastern Arabia.

[13] *First Chair [13] Second Organizer*

Froehle, Andrew [255] *see Schoeninger, Margaret J.*

Frohlich, Bruno [237] *see Littleton, Judith H.*

Fruhlinger, Jake (Idaho Army National Guard) and Jessica Dougherty (Idaho Army National Guard)

[150] *Techniques for Site Management within National Guard Training Areas*

Archaeological resources documentation in the Orchard Training Area (OTA) has yielded large quantities of valuable data. The construction of a database, allows the IDARNG to easily utilize and store information. The database allows for greater collaboration with outside agencies. This database is vital to the archaeological community of the Snake River Plain as it informs on an area that has seen little archaeological research. Maintaining an organized database aids the military because it allows for more informed decisions pertaining to site mitigation. This serves to preserve cultural resources for future generations and also allows for

responsible training within the OTA.

[150] *Second Organizer*

Fryer, Brian J [49] *see Hewitt, Barbara R.*

Fuld, Kristen (Portland State University)

[30] *Bone and Antler Tools on the Lower Columbia: A comparison of two contact period sites.*

Studies of technological organization and changes in technology over time revolve around stone tools. Bone and antler tools are often overlooked or simply described. This is likely due to preservation problems or small assemblage size. Northwest Coast archaeological assemblages are dominated by bone and antler tools providing the opportunity for research. The Cathlapotle (45CL1) and Meier (35CO5) sites, located along the Columbia River, are large contact period village sites that were occupied simultaneously. This research examines and compares the role of bone and antler technology at the two sites both pre and post contact.

Fuller, Dorian (University College London), Alison Weisskopf (University College London), Eleanor Kingwell-Banham (University College London) and Ling Qin (Peking University/ University College London)

[111] *Reconstructing arable rice systems in prehistory*

Cultivation of rice may include a wide range of practices and ecologies, from upland/rainfed to intensively irrigated or deeply flooded. The distinctions between these systems have major implications for human landuse practices in the past, arable productivity, as for the production of greenhouse gasses such as methane. In order to reconstruct how rice was cultivated, and indeed to reconstruct when rice cultivation first emerged from wild gathering, the evidence of rice itself is less informative than the associated weed flora. We present progress of weed flora indicators of cultivation practice recovered from both phytolith and macro-remains assemblages.

[45] *Discussant*

Funes, Jorge [142] *see Pintar, Elizabeth L.*

Funk, Caroline [4] *see Haws, Jonathan A.*

Gabbard, Aubree (Bryn Mawr College) and Danielle Kurin (Vanderbilt University)

[233] *A bioarchaeological comparison of cranial modification and health in ancient highland and coastal Peru*

This poster reports on the bioarchaeological evidence for cranial modification and compromised health among populations in highland and coastal Peru. Human crania affiliated with the highland Chanka (AD 1000-1400) and coastal Pachacamac (AD ca. 800-1450) societies were examined to see if cranial modification is associated with signs of diminished health, including Porotic Hyperostosis, Cribra Orbitalia, and dental pathologies. 30 Crania recovered as part of the Proyecto Bioarqueológico Andahuaylas were compared with 30 cranial from the Morton-Pachacamac collection housed at the University of Pennsylvania. Initial results suggest significant health differences between modified and unmodified individuals in both regions.

Gabler, Brandon (William Self Associates, Inc.), David Yoder (William Self Associates, Inc.), John Ravesloot (William Self Associates, Inc.), Michael Boley (William Self Associates, Inc.) and Melanie Medeiros (William Self Associates, Inc.)

[179] *Small Sites, Big Questions: Seasonality, Foraging, and Fremont Horticulture in the Eastern Great Basin*

The discovery of substantial buried prehistoric components at two Holly UNEV Pipeline Project sites in Utah's west desert is a relatively rare occurrence. Wickiup features and the artifact, floral, and faunal assemblages suggest that these sites were used as seasonal short-term habitations whose primary function was for resource procurement. Using these data, we investigate small scale, localized Fremont behavior outside of the traditional village environment. We address subsistence and technology practices that, when combined with existing research at other small Fremont sites, add to our picture of Great Basin settlement pattern, horticulture, and broad-scale landscape use.

Gabriel Popescu, Gabriel [108] *see Culley, Elisabeth V.*

Gaff, Donald [115] *see Brashler, Janet G.*

Gagliano, Sherwood [265] *see Weinstein, Richard A.*

Gaines, Edmund, James Kunesh (St. Cloud State), Kate Yeske (Colorado State University, CEMML), William Johnson (University of Kansas) and Scott Shirar (University of Alaska, Museum of the North)
[181] *FAI-02043: A Recently Identified Multi-Component Pleistocene Archaeological Site in the Tanana Valley, Interior Alaska*

Recent surveys in the Tanana Valley, Alaska, identified site FAI-02043 on the edge of a glacial outwash terrace. There are at least three components in a stratified context, with the oldest dated to the late Pleistocene, and the youngest dated to the late Holocene. Stratigraphy consists of basal gravels, overlain by 3m of aeolian sand, which is, in turn, capped by 1m of loess. Limited test excavations have recovered hundreds of flakes, stone tools, and large mammal remains, with the majority of the remains coming from the late Pleistocene component in the upper portions of the sand.

Gaines, Edmund [181] *see Yeske, Kate S.*

Gaither, Catherine (Metropolitan State College of Denver), Jonathan Bethard (University of Tennessee), Jonathan Kent (Metropolitan State College of Denver), Teresa Rosales Tham (ARQUEOBIOS) and Victor Vásquez Sánchez (ARQUEOBIOS)

[156] *Traditions of Mortuary Patterns and Human Sacrifice at Santa Rita B in the Middle Chao Valley, Peru*

This paper presents mortuary patterns seen at the non-huaca site of Santa Rita B in the Chao Valley of Peru, and discusses their broader implications. The Late Intermediate Period discoveries include principal burials, human sacrifices, and re-interred parts. The sacrifices, including sub-adults, are retainer sacrifices intended to accompany principal personages through the afterlife. The inclusion of sub-adult sacrifices with a sub-adult principal burial exemplifies the "like with like" pattern seen at numerous Andean sites. These mortuary

patterns, seen at both ceremonial centers and non-huaca sites, appear to represent a fundamental Andean complex of ritual behavior, which persists through time.

Gajewski, Konrad [72] *see Peros, Matthew C.*

Galaty, Michael (Millsaps College), Lorenc Bejko (University of Tirana, Albania), Maria Grazia Amore (International Centre for Albanian Archaeology), Stanley Galicki (Millsaps College) and Zamir Tafilica (Shkodra Historical Museum)

[27] *The Shkodër Archaeological Project, 2010*

The Shkodër Archaeological Project is a collaboration between Millsaps College and the University of Tirana, Albania. In 2010 the project intensively surveyed several square kilometers in the region of Postribë near the city of Shkodër in northern Albania. Geomorphological work focused on Shkodër Lake and the Plain of Shtoj, where 70+ prehistoric burial mounds were mapped. 500+ lithic artifacts document use of the region during the Middle and Upper Palaeolithic and Mesolithic. Finally, prehistoric and historic pottery chart increasing urbanization, culminating in the construction of hill forts, and eventual conquest by the Romans.

Galeazzi, Fabrizio (University of California Merced) and Paola Di Giuseppantonio Di Franco (University of California Merced)

[10] *3D digital stratigraphy at Çatalhöyük: a new methodology enhancing research and learning processes.*

In the summer of 2010, the Virtual Heritage Lab at University of California Merced took part in the Çatalhöyük fieldwork, thanks to an agreement with Stanford University. The aim of this research is the creation of a new methodology for the 3D data collection of archaeological strata. All the archaeological units were scanned using the Minolta Vivid 910 laser scanner. The goal of this research is to create a 3D digital reproduction of the layers with an accuracy of microns that could encourage scientific debates and the understanding of the excavation process for future generation students.

Galentine, Jordan (Indiana University of Pennsylvania)

[209] *Analysis of Ceramic Temper and Vessel Lip Characteristics From the Crooked Creek Watershed*

In this study, I investigate the cultural links between the inhabitants of the Crooked Creek watershed in Indiana and Armstrong counties, Pennsylvania and the nearby Fishbasket and Monongahela cultures through an analysis of ceramic stylistic elements and temper. Stylistic elements are thought to be indicative of cultural relationships during the Late Prehistoric period. Temper type also has been used in previous studies in Western Pennsylvania to identify cultural traditions. An examination of these ceramic attributes clarifies the relationships between groups.

Galicki, Stanley [27] *see Galaty, Michael L.*

Galinier, Jacques

[21] *Esplendor otomí - Un acercamiento transhistórico a su cosmovisión*

La etnografía de las últimas décadas revela el alto grado de elaboración de la representación de la persona otomí

en el aspecto táctil, acústico, visual y su proyección en un espacio físico saturado de cuerpos animados vegetales, animales y minerales, en íntima conexión con los ancestros, mediante metamorfosis transespecíficas y transgenéricas. A nivel sincrónico y diacrónico, las especificidades de cosmovisiones locales, de una región a otra, plantea el problema de la presencia de una matriz cultural común desde época colonial, cuyos fundamentos prehispánicos deberían ser discutidos a la luz de aportaciones de la arqueología reciente de pueblos de habla otomí.

Gallaga, Emiliano (Director Del Centro INAH, Chiapas Museo Regional De Chiapas)

[41] *The way to make a mirror, an experimental archaeology project*

Among all items created by prehispanic crafters, mirrors or objects with reflecting surfaces- commonly made of obsidian, hematite, or pyrite- have frequently caught the eye of researchers (Blainey 2007; Gallaga 2001; Pereira 2008; Salinas 1995). Yet, little research has addressed the difficulty of the manufacture of these objects, their importance in the archaeological record, and their role(s) as markers of social status and/or prestige and/or ceremonial good explicitly. An experimental project of pyrite mirror production was conducted to arrive at some answers on these still elusive topics. This paper will present its preliminary results.

[41] *see Melgar, Emiliano R.*

Gallagher, Daphne [17] *see Dueppen, Stephen*

Galle, Jillian (Monticello), Fraser Neiman (Monticello) and Leslie Cooper (Monticello)

[121] *Market participation and adaptive advantage among enslaved households in the Caribbean and Chesapeake*

Scholars have long recognized the crucial role of internal markets in the slave societies of the New World. This paper uses archaeological evidence from Jamaica, Nevis and the Chesapeake to assess local patterns of change and variation in the roles that markets played in enslaved peoples' lives. Drawing on models of market dynamics, we suggest how enslaved market participants enjoyed important adaptive advantages over non-participants. We examine the abundance of locally manufactured ceramics, Chinese and European ceramics and other imported goods to measure change in market participation and uptake of costly consumer goods in each region.

Galle, Jillian [121] *see Neiman, Fraser D.*

Gallou, Claire [196] *see Hagler, Jeremiah C [196]* *see Doheny, Marcelle A*

Galop, Didier [192] *see Rius, Damien*

Gamble, Lynn (University of California, Santa Barbara)

[48] *A Land of Power: The Materiality of Wealth, Knowledge, Authority, and the Supernatural*

Power was manifested in a variety of realms among California Indian societies, with some individuals having greater access to wealth, knowledge, and objects that signified their positions of authority. Chiefs were

distinguished from other people by their special apparel, including fancy feathered headdresses, belts, cloaks, and shell bead ornamentation. Only the elite were members of the most restricted secret societies that had esoteric knowledge and access to certain supernatural powers. The riverine groups of central California and the more maritime oriented societies of southern California serve as examples of pathways to power and its materiality.

Gamboa Velasquez, Jorge [125] *see Trever, Lisa*

Gamito, Zumilra [77] *see Riffe, Jed*

Gann, Douglas (Center For Desert Archaeology)

[139] *Chuk Son to Tucson - Exploring 4000 Years of Human Experience in the Tucson Basin through the Digital Humanities*

The past ten years of archaeological research in the Tucson Basin has revealed unexpected levels of detail about the nature of human habitation in the region, from the early agricultural period through the era of global cross-cultural contacts. The Center for Desert Archaeology has been utilizing a wide range of new media technologies to explore and share how ideas of cultural continuity, technological change, and persistent places factor into the development of the current community in time and space.

Gann, Douglas [139] *see Young, Lisa C.*

Ganz, David [192] *see Krawchuk, Meg*

Gao, Xing (IVPP Chinese Academy of Sciences), Chen Shan (Royal Ontario Museum) and Xiaoling Zhang (IVPP Chinese Academy of Sciences)

[218] *Zhoukoudian Peking Man site: research histories and its influences on transformation of Chinese Palaeolithic archaeology*

Zhoukoudian Locality 1, where Peking Man Homo erectus fossils were found in 1920s, is the most important Palaeolithic sites in China. After 80 years of the discovery, the site is investigated again with new archaeological applications. This paper reviews research histories of the site and its influences on shaping our understanding of Chinese paleolithic archaeology. The paper presents the results from a study of Zhoukoudian lithic assemblage collected from the site early the last century, now housed in Field Museum of Natural History, in order for us to gain new insights into the Middle Pleistocene lithic technology in China.

Gao, Xing [22] *see Shen, Chen*

Garber, James [56] *see Freiwald, Carolyn R.*

Garcia, Dante (Zona Arqueologica de Monte Albán) and Irma Cazares (Zona Arqueológica de Monte Albán)

[95] *Hallazgos arqueológicos y gestión en la poligonal de protección del sitio arqueológico de Atzompa.*

El sitio arqueológico de Atzompa como parte del área de Monumentos Arqueológicos de Monte Albán, ha tenido como principal factor de riesgo las acciones derivadas del crecimiento poblacional de la Ciudad de Oaxaca hacia esta área. Con la implementación del Plan de Manejo 2005-2015, el conocimiento de los actores

sociales del área y el control sobre diferentes acciones que realizan, se implementó el Programa de Salvamentos y Rescates Arqueológicos para la investigación y salvaguarda de los vestigios culturales del cerro de Atzompa. Se presentarán hallazgos que atestiguan la actividad humana de las fases: Monte Albán II a Monte Albán V.

García Llorca, Jorge [103] *see Cahiza, Pablo A.*

García Lozano, Rubén [95] *see Martínez Tuñón, Antonio*

García Valencia, Enrique

[21] *Tejido en curva, la conexión otomí*

En 1946 Bodil Christensen describió una técnica textil llamada Técnica en curva, después la señora Johnson describió una técnica parecida en un lienzo de Oaxaca. Hace un par de años describí una técnica similar en la elaboración de morrales huastecos. Actualmente se conocen unos diez lienzos coloniales y varios lugares modernos en que se emplea. No parecen existir relaciones de proximidad geográfica, culturales, políticas, religiosas, rituales entre los diversos grupos en que se conoce: zapotecos y mixtecos coloniales y nahuas, totonacos, tepehuas, otomíes y huastecos actuales. El vínculo, al observar en un mapa los lugares de producción, son los otomíes.

García-Moreno, Cristina (Universidad De Sonora/ Centro INAH Sonora)

[147] *Tratamiento mortuorio en el sitio Batacosa*

Batacosa es uno de los pocos sitios prehispánicos localizados hasta el momento en la parte sur del estado de Sonora, el cual además muestra una ocupación probablemente continua desde el 200 a.C. hasta por lo menos el siglo XIX. El tratamiento mortuorio identificado hasta el momento en el sitio, es variado; sin embargo una característica predominante en los entierros excavados hasta el momento, es la presencia de objetos manufacturados en concha procedente del Golfo de California, mostrándonos una clara conexión entre grupos costeros y grupos humanos de tierra adentro. Además, hemos identificado algunos fragmentos de hueso humano con evidencia de haber sido hervidos, muy probablemente para consumo. Con la información que hemos obtenido hasta el momento, podremos hablar de distintos tratamientos mortuorios a través del tiempo en esta área de Sonora.

Gard, Rowan [261] *see McCoy, Mark D.*

Gardner, Gavin [248] *see Hubbard, Duane C*

Gardner, Karen (California State University, Chico), Alan Leventhal (San Jose State University), Rosemary Cambra (Chairwoman of the Muwekma Ohlone), Eric J. Bartelink (California State University, Chico) and Antoinette Martinez (California State University, Chico)

[194] *Food and Identity in the Prehistoric Santa Clara Valley: Using Stable Isotope Analysis to Understand Social Organization at CA-SCL-38*

Social identities operate at multiple levels, even affecting the choice of foods consumed by individual members of a group. This presentation explores the social

implications of dietary patterns of individuals buried in the Yukisma Mound (CA-SCL-38), an ancestral Muwekma Ohlone mortuary mound in Santa Clara County, California. Stable carbon and nitrogen isotope analysis of bone collagen and bioapatite is used to assess dietary patterns of 126 individuals, interred between 1700 BP and 180 BP. Correlation with age, sex, associated mortuary regalia, and temporal placement suggests a strong relationship between ascribed social status and the foods people consumed during their lifetimes.

Gardner, Karen [194] *see Bartelink, Eric J.*

Garfinkel, Alan P. [231] *see Binning, Jeanne Day*

Garraty, Christopher (Statistical Research, Inc.)

[151] *The Post-Conquest Origins of Pottery among the Tongva-Gabrielino: Indigenous Brown Wares from the Ballona*

This paper focuses on the circumstances under which the Tongva-Gabrielino adopted practical pottery technology during the Mission period. Roughly 110 undecorated indigenous-style ceramic sherds were recovered from a Protohistoric-Mission period living surface in the Ballona, most of which are small fragments from undecorated brown or gray vessels likely used for cooking. Some inhabitants of the Ballona appear to have been incorporated into nearby missions and the Pueblo of Los Angeles. Thus, it is crucial to consider the extent to which this investment in pottery technology was attributable to Hispanic influences versus indigenous responses to changing social and economic conditions.

Garraty, Christopher [80] *see Hall, John D.*

Garrison, Thomas [148] *see Luzzadder-Beach, Sheryl*

Garvey, Jillian (La Trobe University, Australia), Judith Field (Australian Centre for Microscopy and Microanalysis, The University of Sydney), Brett Cochrane (Brewarrina Local Aboriginal Land Council, Brewarrina) and Chris Boney (Brewarrina Local Aboriginal Land Council, Brewarrina)

[12] *The role of the emu in Australian archaeology: modern butchery, ethnography, economic utility and nutritional quality*

This study uses a multidisciplinary approach to understand the Australian emu (*Dromaius novaehollandiae*) in archaeology via: (1) ethnography and modern Indigenous subsistence practices; (2) economic utility experiments to quantify meat, fat and marrow; and (3) evaluating fatty acid content of the meat/fat/marrow to determine the nutritional benefits of particular elements. Whilst economic utility studies have been completed on numerous ungulates from elsewhere, only two Australian studies have attempted to evaluate the economic utility and/or fatty acids analysis of select kangaroo and wallaby species. The data for a third important target prey – the emu – is the subject of this study.

Garvey, Raven (UC Davis)

[74] *Preliminary OHD results applied to the mid-Holocene record of western Argentina*

Relative to other periods, there are few recorded middle Holocene sites in west-central Argentina. This

phenomenon is often attributed to abandonment in the face of prolonged droughts, but the extent to which the lack of sites owes to sampling biases versus human behaviors remains unclear. Preliminary OHD rim measurements and calibration curves suggest that western Argentine obsidians hydrate at a knowable rate, offering a new means of dating surface finds and distinguishing between alternative explanations for the apparent gap, a crucial initiative for understanding human adaptive responses to mid-Holocene climate changes.

Gasco, Janine (CSU-Dominguez Hills)

[200] *Four Decades of Tom Charlton's Research on Post-Conquest Archaeology in Mesoamerica*

As early as the mid 1960s Tom Charlton had begun to conduct research on the Post-Conquest history of the Valley of Mexico, a research interest that eventually expanded to include other regions of Mesoamerica. Tom's pioneering work inspired subsequent generations of Mesoamerican archaeologists to look beyond the artificial line that separated Pre-Conquest and Post-Conquest historical trends and instead to consider longer-term processes of change and continuity. In this paper I review some of Tom's most significant contributions to the archaeology of Post-Conquest Mesoamerica, and I discuss how his work has influenced archaeological research for over forty years.

Gasco, Janine [62] *see Bigney, Scott T.*

Gaskell, Sandra (Tribal Archaeologist Southern Sierra Miwuk Nation), Danette Johnson (Southern Sierra Miwuk Nation GIS Analyst) and Richard Hogan (Director at Large, Southern Sierra Miwuk Nation)

[158] *Family Routes and Yosemite American Indian Pictographs*

This study began in 2001 through a volunteer in the park archaeological field work session in collaboration with Yosemite Archaeology and the Southern Sierra Miwuk Nation. Since the pictographs were re-recorded in 2001, research into the original condition and degradation was compiled in order to create a preservation plan. This presentation will show the progression of the archival reconstruction of the pictographs, will show the linguistic relationships to the family use routes, and will describe the village region environment of the images. The images that will be examined are listed as the Valley Images.

Gaspar, Maria (Museu Nacional) and Daniela Klokler (Museu Nacional/UFRJ)

[253] *Amourins: same site, different perspectives.*

Sambaqui archaeology 30 years later

Revisit to Amourins site with reanalysis of materials and profile studies provided elements for a reinterpretation of the site's function and the area's occupation. At the beginning of its occupation the site was located in wetlands and accumulation of shell valves formed a dry surface/platform. We believe that oysters and thick lucine were probably chosen and used as raw material for platform construction for symbolic reasons and were not largely consumed. The construction of this shell site, as other larger sites in southern Brazil are directly associated with funerary ritual, with strong evidence of performance of feasting.

[253] *Third Organizer*

Gaspar, Maria Dulce [253] *see Bianchini, Gina F.*

Gasparian, Boris [114] *see Egeland, Charles P. [114]*
see Areshian, Gregory E. [114] *see Adler, Daniel S.*

Gassaway, Linn (Sequoia National Forest), Alex Verdugo (Sequoia National Forest) and Ernest Wingate (Sequoia National Forest)

[57] *Living Among the Giants: New Research from the Giant Sequoia National Monument*

The Southern Sierra Nevada has been over looked by most researchers but its unique geography and vegetation along with it potentially long and diverse cultural history makes it an ideal place to answer a multitude of questions about past lifeways, adaptations, and culture change that can't be studied in other parts of the Sierra Nevada. This paper provides an overview of recent research in the Giant Sequoia National Monument including early occupation at mid-elevation sites, basin sites, and Native American use of fire.

Gataveckas, Katrina (The University of Toronto)

[227] *Domestic Spatial Organization: An Articulation of Elite Political Strategies and Religious Ideologies at the Moche Site of Huaca Colorada*

Preliminary archaeological investigations of the differential construction, renovation, and function of residential, ceremonial and production sectors at the Late Moche site of Huaca Colorada in the Jequetepeque Valley allow investigation into the impact of larger administrative structures at the domestic level, and local reactions to these structures. I argue that Moche elite political strategies and religious ideologies shaped the organization, representation, and use of quotidian space at Huaca Colorada. Study of the spatial aspects of low-status production and dwelling structures in the lower zone of the settlement will illuminate the complex association between domestic and administrative spheres at the site.

Gates St-Pierre, Christian (Université Laval, Quebec City)

[29] *A Microwear Study of Late Woodland St. Lawrence Iroquoian Endscrapers*

This paper will present the results of a microwear study of endscrapers from various Late Woodland St. Lawrence Iroquoian sites located in the Province of Quebec. The goal of this research is to verify and understand the possible variation in the use of endscrapers in relation to the main function of the sites where they were recovered. Thus, endscrapers from a village site, a fishing station, a hunting camp and an intertribal gathering site were selected and submitted to use wear analysis. The results are compared and interpreted using a regional approach instead of a site-oriented perspective only.

Gatewood, Jeff [22] *see Marshall, David A.*

Gear, W. (Timescribes) and Linda Scott Cummings (Paleoresearch Institute, INC.)

[66] *Global Warming and Prehistory: What's the Story?*

This is not the first interval of global warming since the late Pleistocene. It's "our" global warming. What has happened in the past and what are the most likely

causes? Climate drives paleoenvironmental conditions. Causal conditions and feedback loops – those conditions resulting from a causal event that provide impetus for more change – have both been important. What role has agriculture (clearing land, increased quantities of animals, and increased human populations) played in global climate change? When were the most dramatic climatic events? What do we see in the archaeological record as the result of that change?

[84] *Discussant* [84] *First Chair* [84] *First Moderator*

Gebauer, Rachel (Natural Resources Conservation Service), Michelle A. Durant (Fremont-Winema National Forests), Brooke M. Brown (Bureau of Land Management) and Sara Hescocock (Bureau of Land Management)

[87] *The Road Well-Travelled Yet Nearly Forgotten: Investigations on the Bonanza to Lakeview Wagon Road in South Central Oregon*

The Bonanza- Lakeview Wagon Road was established in the late 19th century as a mail route and now, as a cattle driveway, no longer appears on current maps. The continuous use of the road reflects the “path of least resistance” rule in a demanding landscape. Limitations such as rocky terrain, access to water and a high desert climate dictate its path. 21st century limitations such as checkerboard land ownership, restrictive budgets and generational passages threaten to forget it. A collaborative project, between the USFS, BLM and NRCS involves survey, historical maps and oral history to record segments of the road.

Gebhard, Rupert [162] *see Wagner, Ursel*

Gebhart, Dick [162] *see Baxter, Carey L.*

Geib, Phil (University of New Mexico)

[94] *Basketmaker II Warfare and the Role of "Fending Sticks"*

Intergroup conflict on the Colorado Plateau of the North American Southwest during the Basketmaker II period (ca. 1000 BC to AD 500) is demonstrated by skeletal assemblages attributable to massacres (Cave 7 and Battle Cave). Warfare might also be inferred from distinctive wooden artifacts commonly referred to as fending sticks because of a suspected defensive use in batting away atlatl darts. Found throughout the greater southwest, detailed study was recently undertaken to determine their function and temporal distribution as part of a larger inquiry into the cause(s) of Basketmaker conflict. The results of use-wear analysis and experimental research are presented.

Geib, Phil [70] *see Newbold, Bradley*

Geller, Pamela (University of Miami)

[16] *Brave Old World: The Bioethics of Genetic Testing for Sex in Bioarchaeology*

Ancient DNA research has certainly innovated bioarchaeology. While technical fine-tuning continues, studies about diet, migration, disease, and domestication have proved informative. Yet, new ways of doing do not necessitate new ways of thinking. Further deliberation about bioethical parameters is required. Scholars have recently broached scientific racism and repatriation. Here I consider the bioethics of using aDNA to sex bodies,

specifically those of children. I argue that given theoretically deficient understandings many researchers' subsequent inferences characterize gender as essence rather than process or performance.

[217] *Discussant*

Gelvin-Reymiller, Carol (University of Alaska, Fairbanks) and Joshua Reuther (University of Arizona, Tucson)

[179] *Quartz Lake, Interior Alaska: Human Presence throughout the Holocene*

Four lakeshore sites at Quartz Lake, mid-Tanana River region, were examined to explore relationships of lacustrine ecology to regional human land-use. Taphonomic variables encourage faunal preservation at two dry sites, and alkaline lake waters encourage preservation at two submerged sites; recent low water levels augment site discovery. Erosional/depositional episodes are evident in sediments, with accompanying shifts in occupations and site selections between 13,000 years cal BP and AD 1850. Analysis indicates Quartz Lake is one of a series of lakes and lowland sites connected to other regions via trade/transport networks, with optimal local resources and topography repeatedly attractive to humans.

Gencay Ustun, Ozge (Assistant Conservator Southwest Museum) and Dennis Harbach (Southwest Museum of the American Indian, The Autry National Center of the American West)

[193] *Heavy metal analysis using a pXRF analyzer on organic artifacts*

Heavy metal containing biocides applied on organic museum artifacts have created problems since the past couple decades. These toxic heavy metals persistent on artifacts may be repatriated to native communities all around the world. At the Southwest Museum, a NITON portable XRF analyzer is used to detect the components of possible biocides which may include lead, arsenic, mercury, and bromide found on artifacts. In addition the Museum is compiling its past biocide inventory by researching old files, publications, and consulting former employees. We hope the analyzer findings with the research contribute to a future database of museum biocide use.

Gendron, Daniel (Avataq Cultural Institute), Pierre Desrosiers (Avataq Cultural Institute), Najat Bhiri (Laval University), Stéphanie Steelandt (Laval University) and Hervé Monchot (Avataq Cultural Institute)

[159] *IbGk-3 : A Glimpse into Inuit Past Lifeways in Hudson Bay.*

A collaborative project was undertaken between the northern village of Inukjuak and an interdisciplinary team of researchers from university and community institutions. Excavations were conducted in 2007-2008, plus supplementary geoarchaeological work (2009-2010) at the IbGk-3 site in eastern Hudson Bay. The present paper presents a synthesis of the work carried out with a special focus on the heavy use of wood in the architecture of the qarmaq, an unlikely feature for this part of the Eastern Arctic.

Gerard-Little, Perri [55] *see Rogers, Michael*

Germon Roche, Mauricio [221] *see Clark, Dylan J.*

Geurds, Alexander (Leiden University)

[183] *Materials and materiality of megalithics in Nicaragua*

Megalithic stones are a global prehistoric phenomenon. From unworked to entirely shaped, they are an artifact category retaining a strong natural character. Central Nicaraguan megalithics are examined here with this broad perspective in mind. In moving away from traditional categorizations of typology and class, contextual data are used to gain insights into the assemblages in which these stones occurred. It is argued that megalithics in Nicaragua were not isolated but usually grouped, thereby creating an internal structure for sites of ceremony. The choices involved in creating these assemblages in turn suggest communally shared efforts, technology and memories.

[183] *First Chair*

Ghisleni, Lara (University of Wisconsin-Milwaukee)

[164] *Gender, Domestic Space and Temporality in Late Iron Age and Early Roman Dorset, England*

This research investigates the role of domestic space as a social context for gendered construction during the Late Iron Age and Early Roman periods in Dorset, southwest England. Gender affects the use and experience of cultural spaces. Decisions that undoubtedly involve gendered relationships contribute to ideas about how to build houses and for how long houses should be occupied. The Roman conquest of Britain in AD 43 has frequently been viewed as having a significant impact on such Iron Age practices. Examining transformations in everyday household space and gendered identity sheds light on the varying experiences that contributed to Romanization.

Ghukasyan, Robert [114] *see Egeland, Charles P.*

Giardina, Miguel [12] *see Neme, Gustavo A.*

Gibb, Heather (University of Missouri-Columbia)

[180] *Anatomical Refitting Using Visual Comparison on Deer (*Odocoileus* spp.)*

Linear measurements have been used to identify bilaterally paired skeletal elements from zooarchaeological assemblages. Visual comparison has been used to detect incorrect pairs identified with metric comparison under the assumption that visual comparison of non-metric traits correctly identify bilateral pairs. This assumption was tested using a collection of deer (*Odocoileus* spp.) skeletons composed of known bilateral pairs. In blind tests, bilateral pairs suggested by linear measurements, both incorrect and correct, were documented. Researchers then identified bilateral pairs using visual comparison. Visual comparison does not correct most errors resulting from metric comparison, indicating the key assumption is unwarranted.

Gibb, James (Independent Scholar)

[122] *Up from Flatland: Discovering Three-Dimensional Characters through Alternative Narrative Forms*

Language is linear, but not so the ideas it expresses. Dialogue draws on the past—recent and distant—in the service of the present and envisioned futures, reworking the past and replacing old contradictions and

inconsistencies with new ones. Theatrical productions can lay bare to public view the process and products of historical interpretation. When the persons variously portrayed are themselves historical, the audience experiences the complexities of their characters and views, and the unexpected outcomes of their interactions. A brief fictitious dialogue between two prominent Americans illustrates the non-linearity of past-present-future.

Gibbs, Tim (Museum of Northern Arizona), Kristin M. Brown (Museum of Northern Arizona), Donald Keller (Museum of Northern Arizona) and Ted Neff (Museum of Northern Arizona)

[163] *Digital Mapping of Architectural Remains at Walnut Canyon National Monument*

In 2010, archaeologists from the Museum of Northern Arizona conducted a detailed architectural inventory of four sites in the Second Fort region of Walnut Canyon National Monument near Flagstaff, Arizona. Using a hybrid method involving GPS, aerial photogrammetry, electronic total station, and traditional hand mapping techniques, a total of nineteen masonry rooms dating to the Sinagua occupation of the canyon were mapped to an absolute accuracy of only a few centimeters. The subsequent digital product combines a high resolution surface model with planimetric and vertical profile vector data incorporating the National Park Service's ArcDoc architectural documentation database.

Gibson, David [267] *see Rademaker, Kurt M.*

Gibson, Heather (AECOM) and Rebecca Apple (AECOM)

[50] *The Search for a Historic Trail*

The Juan Bautista de Anza National Historic Trail corridor, established in 1990, commemorates the Anza party's 1775-76 expedition from Sonora to San Francisco, which established an overland route between New Spain and Alta California. The trail extends over 1,200 miles in the U.S. and includes developed zones, as well as areas through open desert. Managing this resource in conjunction with green energy development necessitated defining archaeological traces of the expedition. Pedestrian survey, archival analysis, and imagery analysis were used to investigate likely locations of campsites and the route. Results are discussed with lessons learned regarding the preservation of historic trails.

Gifford, Chad [15] *see Connell, Samuel V.*

Gifford-Gonzalez, Diane (U of California - Santa Cruz)

[126] *Zooarchaeology as Historical Ecology: A Case from the Northeastern Pacific*

Lee Lyman is among the pioneers in the application of zooarchaeological evidence to issues in conservation biology and historical ecology. His research on mountain goats, marine mammals, and other taxa has provided invaluable information on precolonial distributions of various presently protected species that is relevant to their management today. Lyman also has had and reported upon the experience of the occasional less-than-warm welcome of such evidence by wildlife managers. This presentation reports on a parallel study of the historical ecology of northern fur seals in California

and the Pacific Northwest.

Gifford-Gonzalez, Diane [222] *see Boone, Cristie*

Gil, Adolfo (CONICET-Museo De Historia Natural De San Rafael), Laura Salgán (ICES; Museo de Historia Natural de San Rafael) and Gustavo Neme (CONICET-Museo de Historia Natural de San Rafael)

[62] *Obsidian sources exploitation in La Payunia Volcanic Field (Mendoza, Argentina)*

The study of lithic raw procurement and usage strategies in the La Payunia Volcanic Field (Mendoza, Argentina) allows us to discuss the biogeographical models in arid environments of central-western Argentina. Recent results in geochemical obsidian analysis is presented in order to discuss these strategies. We present preliminary results from the study of 130 archaeological obsidian artifacts analyzed with X-ray fluorescence (ED-XRF). The results show the exploitation of five obsidian sources with an procurement range of 30kmts to 200kmts.

Gil, Adolfo [12] *see Neme, Gustavo A.*

Gilbert, Rebecca [57] *see Andolina, Darren J.*

Gilead, Isaac (Ben-Gurion University of the Negev, Israel)

[122] *Limits of Archaeological Emplotment: The Case of Nazi Extermination Centers*

The "Final Solution" involved three groups of participants: perpetrators, victims and bystanders. Currently it attracts also the public, scholars and Judeocide deniers. Such a plethora of voices implies numerous narratives and different emplotment. This multivocality and its potential limits are nowadays heatedly debated among historians and philosophers, and its relevance to issues of archaeological writing will be discussed. The extermination centers of Chelmno, Belzec and Sobibór yielded archaeological remains that set the background of the paper.

Giles, Bretton (Binghamton University)

[260] *Extraordinary Beasts and Birds: A Comparison of Particular Ohio and Illinois Hopewell Symbols*

In this paper, I reexamine the similarities between the imagery portrayed on an engraved femur from Hopewell Mound 25 and the Bedford copper cutout. I begin by illustrating several points of similarity, including the double-headed birds embedded in these iconographic compositions. I then discuss whether and how these two representations portray caymans or crocodilian-like visages. I conclude by discussing the meanings that may have been invested in these representations of double-headed birds and caymans, as well as how the close iconographic connections between these symbols hold implications for the nature of Hopewellian interregional relations.

[260] *First Chair*

Giligny, François (Université Paris 1 Panthéon-Sorbonne) [110] *Discussant*

Gill, Amanda (Indiana University of Pennsylvania)

[65] *Ground Penetrating Radar at Pyla-Koutsopetria, Cyprus*

Geophysical techniques are becoming an invaluable

addition to archaeological investigation. GPR data can assist in locating high probability areas for excavation and allow for non-destructive avenues for archaeological research. This study focuses on Ground Penetrating Radar data collection and results from Late Roman site Pyla-Koutsopetria in Larnaca, Cyprus. This site has been under archaeological investigation for six seasons, however, geophysical data collection has been limited. The Koutsopetria site has yielded both surface scatters of material culture and architectural foundations. This poster will display research and results from the GPR collection at the site.

Gill, Kristina (UC Santa Barbara)

[123] *Plant Exploitation in Island Interiors - Paleoethnobotanical Investigations at an Interior Bedrock Mortar Site*

Many archaeological sites on Santa Cruz Island inhabited between 4500 and 3000 BC are located near the coast, and contain abundant red abalone shells. The emergence of mortars and pestles on the adjacent mainland beginning around 4000 BC may indicate an expansion of the diet to include new plant foods. A bedrock mortar site (SCRI-814) located in the interior of Santa Cruz Island radiocarbon dated to between 4190 BC and 2890 BC was recently identified. Floral and faunal analyses at this site provide a basis for understanding the role of terrestrial resources in interior island settings on the Channel Islands.

[150] *see Pitts, Karin*

Gilleon, Kristi

[196] *Just Down the Road: The Robert S. Peabody Museum and its Approach to Secondary Education*

The Robert S. Peabody Museum of Archaeology is unique in that it is the only archaeological museum to be found on a high school campus in the United States. It is also unusual in its breadth and quality of educational activities it provides for the students of Phillips Academy Andover. This paper will discuss the museum's range of educational opportunities from a former student's point of view, and why they have been so effective. It will also provide a model for other archaeological museums hoping to establish a close educational relationship with students anywhere from elementary school to graduate programs.

Gillette, Donna (University of California, Berkeley)

[158] *First Chair*

Gillis, Nichole (Public Archaeology Laboratory, Inc.)

[210] *A Tale of Two Sites: An Analysis of Feature Assemblages from Puffer Pond, Assabet River National Wildlife Refuge, Eastern Massachusetts*

Recent data recovery excavations revealed two multi-component sites on Puffer Pond, with evidence of occupation spanning the Middle Archaic to Woodland Periods (8000–500 BP). Analysis of the diverse feature assemblages (e.g., pits, rock features, post molds, and lithic workshops) is used to explore questions about on-site activities, group size, length and intensity of occupation, and the role of the sites within the larger settlement system. As few known upland pond base camps have survived post-contact agricultural land use and modern development, the feature assemblages are a significant source of new information about settlement on

interior ponds in eastern Massachusetts.

Gilman, Patricia (University of Oklahoma) and Alison K. Livesay (University of Oklahoma)

[143] *Mortuary Data from the Mimbres Region of Southwestern New Mexico*

The burials in the Mimbres region of southwestern New Mexico are well known because they usually contain beautiful black-on-white bowls with representational designs of people and animals. Although archaeologists have studied the bowls and burials for almost 100 years, we are far from any consistent understanding of Mimbres burial patterns – who was buried in which ways, where, and with what? Our paper focuses on the issues surrounding the Mimbres mortuary database assembly. We will present Pithouse (A.D. 200-1000) and Classic (A.D. 1000-1130) period data from one large and several smaller sites in the Mimbres Valley, the heartland of things Mimbres.

Gilmore, Grant [121] see Ahlman, Todd

Gilmore, Richard (St. Eustatius Center for Archaeological Research)

[121] *A Cradle of Capitalism: St. Eustatius in the Atlantic World*

This paper will contextualize research on St. Eustatius over the past forty-five years within an Atlantic World framework. Religious, Free Black, commercial, military, enslaved and plantation sites will be examined as an organic whole—with each contributing uniquely to the development of Capitalism as an economic force. Although ignored by most modern economic historians, Adam Smith recognized the primacy of St. Eustatius in the colonial economic machine, as St. Eustatius was the first modern "free port". The results of the vast trade through the island are clearly reflected in the archaeological record reported in this paper.

Gilmour, Daniel (Portland State Univ.), Virginia Butler (Portland State University), Douglas Kennett (University of Oregon), Brendan Culleton (University of Oregon) and Edward Byrd Davis (University of Oregon)

[108] *Chronology and Ecology of Late Pleistocene Megafauna in the Northern Willamette Valley, Oregon*
Numerous megafaunal remains from Late Pleistocene deposits in Oregon's northern Willamette Valley have been noted and collected over the past century, though most have not been described or dated. We undertook a project to synthesize these faunal records to reconstruct paleoenvironments and consider the causes of Late Quaternary extinctions. We have obtained AMS ages on 15 individuals from five genera (Bison, Mammut, Mammuthus, Equus, Paramylodon) dating between ~15,000-11,000 cal yrs BP. Results suggest a mixed grazer/browser community persisted from the Clovis Horizon until the Younger Dryas boundary. Implications for the extinction debate and Late Pleistocene forager adaptations are considered.

Gilreath, Amy (Far Western)

[158] *Stuart Ranch and Pahrangat Rock Art, Nevada*
Two high-profile concentrations of petroglyphs barely 30 miles apart in southern Nevada are profoundly different and equally engaging. The concentration in lower

Pahrangat Valley is easily recognized, and stylistically distinct from other styles in the region. It is reasonably considered Middle Archaic in age. The concentration along the lower Meadow Valley Wash at Stuart Ranch is dominated by Contact-period petroglyphs made with traditional techniques and pictographs. Their "place" in the local archaeological record is considered, and reflections on the relevance of the ethnographic record and contemporary Native American perspectives are presented.

Gingerich, Joseph (University of Wyoming) and Nathaniel Kitchel (University of Wyoming)

[155] *Early Paleoindian Subsistence Strategies in Eastern North America: A continuation of the Clovis tradition? Or evidence of regional adaptations?*

On a continental scale, Clovis subsistence strategies have often been characterized by the hunting of large game. Unlike the early archaeological record of the western United States, subsistence residues and the occurrence of kill sites are rare in the east. Discoveries of abundant plant remains in Clovis-age sites like Shawnee-Minisink, however, suggest diversity in early Paleoindian lifeways. This paper will review the subsistence data from fluted point sites in eastern North America and discuss similarities in subsistence patterns that begin in the Clovis era and continue throughout the duration of the eastern fluted point tradition.

Girard, Jeff [64] see Hargrave, Michael L.

Giraud, Rachel (University of California, Berkeley)

[153] *Mapping Intangible Heritage at the Tsodilo Hills*
This paper addresses the theoretical and methodological issues of using GIS to map cultural attributes increasingly referred to as "intangible heritage." The intangible heritage related to material culture and social landscapes, such as stories about places, religious practices, and knowledge about plant products, is essential to record in order to understand the context of archaeological remains within the human environment and to assist in developing more sustainable conservation strategies with an enhanced knowledge of local beliefs and practices. The author illustrates these points through the case study of the Tsodilo Hills in Botswana.

Giron, Mario (CalState-LA)

[266] *Ritualized Gladiatorial Contests in Classic Maya Ceramic Art*

An interesting aspect of the Midnight Terror Cave ceramic assemblage is the relatively large number of polychrome sherds. A particularly interesting example is an almost completely restored Late Classic vessel depicting a fighter or gladiator. This paper discusses the vessel and then analyzes the wider social context of such activities. Finally, suggestions will be made about possible architectural features that may have housed this sport.

Glaab, Rigden (Washington State University)

[168] *Avoiding the Omega: Human Adaptation and Social Resilience on the Tavaputs Plateau of Northeastern Utah*

This paper will explore the idiosyncratic and environmentally responsive behavior associated with

forager land use on the Northern Colorado Plateau under the guiding methods of a model called Resilience Theory. The matter to be discussed are the distinct transitions that occurred during the Pleistocene/Holocene interface (9000 B.P.) with a fresh outlook to be focused on the "exploitation" (r phase) and "conservation" (K phase) aspects of the model. These data to be presented will include information from the last two seasons in 2008 and 2010 of the Tavaputs Archaeological Research Project.

[168] *First Chair*

Gladwell, Randi [70] *see Roland, Jennifer M.*

Glascok, Michael (University of Missouri) and Jeffrey Ferguson (University of Missouri-Columbia)

[97] *Obsidian Characterization by Elemental Analysis: The State-of-Play*

Elemental analysis of obsidian has benefited many archaeological projects by yielding highly accurate identifications for geologic sources. Sourcing results have been used to identify trade routes, territorial boundaries, migration patterns, and develop models for procurement and exchange. Large geochemical databases exist and portable instruments offering rapid, non-destructive capabilities are readily available. As a consequence, obsidian sourcing has become a highly routine and successful practice. In spite of all we have learned when employing elemental analysis, there are still some potential pitfalls which occur due to inadequate source characterization and failure to understand the requirements and limitations of individual analytical methods.

Glascok, Michael D. [267] *see Rademaker, Kurt M.*
[228] *see Fehrenbach, Shawn S.* **[142]** *see Pintar, Elizabeth L.*

Glasgow, Hillary (University of Colorado at Boulder), Matt Sponheimer (University of Colorado at Boulder) and Andrew Wilson (University of Bradford)

[236] *Stable Isotope Analysis of Ancient Nubian Hair: A Comparison of Two Medieval Skeletal Populations from Kulubnarti, Sudan*

The remains of over 400 naturally mummified individuals were excavated from two cemeteries at the site of Kulubnarti, Sudan in 1979. It has been suggested from a recent textile analysis that the burials from both cemeteries, 21-S-46 and 21-R-2, date to the Early Christian Period (A.D. 600-850). However, marked differences in population mortality and overall rates of stress as exhibited osteologically are seemingly indicative of diachronic populations. Carbon, nitrogen, oxygen, and hydrogen stable isotope analysis of preserved hair allows for a new approach to evaluating differences between the two cemetery populations.

Glassow, Michael (Univ of Cal-Santa Barbara)

[123] *Settlement Systems on Santa Cruz Island and the Other Channel Islands at 6000 BP*

Coastal sites on western Santa Cruz Island dating between 6300 and 5300 BP are characterized by unusual quantities of red abalone shells. These sites vary in size, most being very small but two having substantial midden deposits. Kennett proposed that the largest sites were villages and the small sites were logistical

encampments. Other models of settlement systems of this period posit more complicated types of settlement systems and take into consideration new information about site characteristics. Attempts to understand settlement systems on Santa Cruz Island have implications for those on the other Channel Islands dating to the same time period.

Glidden, Catherine (Surface Transportation Board) and Ben Rodd (Rosebud Sioux Tribe)

[154] *Rethinking the National Register Criteria for Tribal Sites*

The criteria for determining significance are defined by the National Register established in 1966. Since 1992, however, sites of religious or cultural importance to tribes have been added to the National Register as a property type. However, in evaluating such sites, Federal agencies must use the same criteria developed to assess the significance of historic buildings etc. - an imperfect fit at best. We discuss the need to create an alternative process that equally considers the distinctive perspective of tribes within the context of the Dakota, Minnesota and Eastern Railroad Project.

Gloux, Sabrina (ArchaeoTek) and Andre Gonciar (ArchaeoTek Director)

[204] *Insights into the investigation of Late Bronze Age populations in Transylvania*

The ArchaeoTek osteology workshop program is part of a wider project focusing on the study of Late Bronze Age populations from the Noua-Sabatinovka-Coslogeni Complex (NSCC). The osteological material being studied (135 individuals) is stored at the National Museum of History of Transylvania (MNIT) in Cluj-Napoca. The purpose of this paper is to present preliminary results from a 2 months investigation of 40 individuals. In regards to the first set of analysis, the preliminary conclusions are encouraging and highly promising for the future of this project.

Glover, Jeffrey (Georgia State University) and Dominique Rissolo (Waitt Institute)

[221] *Vista Alegre and Chichén Itzá: Evidence of a Northeastern Outpost?*

While the relationship between Chichén Itzá and Isla Cerritos has been well documented, the nature of Chichén's relations with other coastal sites remains unclear. This paper explores Chichén's interaction with Vista Alegre, an island site located along Quintana Roo's north coast. After a hiatus of around 200 years, a group of people resettled the island during the Terminal Classic period. Who were these people, where did they come from, how did they engage in burgeoning circum-peninsular trade networks, and how do we address these questions archaeologically? Our preliminary data provide some clues to these questions, but raise many more.

Glowacki, Donna (University of Notre Dame)

[117] *An Intraregional Assessment of the Post-Chaco Transition in Central Mesa Verde*

The A.D. 1130-1180 interval was a defining moment in the occupation history of the Central Mesa Verde region; one that demanded social and settlement changes and created contingencies that forever altered the nature of the regional occupation. Recent analyses show that despite the low frequency of tree-ring dates for this

interval, population remained stable. However, the period of severe drought and presumably related violence prompted various coping strategies including increased aggregation and changes in settlement location, layout, and village-level organization. Using recent settlement and tree-ring data, this paper compares how these changes were expressed in different parts of the region. [46] *see Lipe, William D.*

Godos, Fernando [221] *see Ardren, Traci*

Goebel, Ted (Texas A&M University) and Joshua Keene (Texas A&M University)

[94] *A Critical Review of the "Long Chronology" for Stemmed Points in the Intermountain West of North America*

Are the intermountain west's stemmed points as old as or older than Clovis (13 ka), and do they represent a distinct, early dispersal of humans? Radiocarbon dates from sites like Hatwai, Coopers Ferry, and Smith Creek Cave suggest so, leading to the proposition of a "long chronology" for stemmed points. Here we review the geochronological evidence from these and other stemmed-point sites with dates >12 ka, and counter that most of the evidence for such early stemmed points is equivocal, many of the sites need to be redated, and for now a "short chronology" better explains the evidence at hand.

[155] *Discussant*

Goebel, Ted [181] *see Younie, Angela M.*

Gold, Alan (AECOM)

[158] *Reproductive Symbolism in Great Basin Rock Art*
Promotion of the generative powers of animals and humans is a concern of major religions and small-scale societies the world over. Conventionalized symbols provide a window into ceremonial life. Coso rock drawings include imagery linking hunting with game animal fertility and human sexuality. This perspective is explored through a review of the form and content of Coso animal depictions and an examination of related material in Great Basin ethnology, oral tradition, and hunting terminology. One prominent theme in Coso rock art appears to be the fostering of animal and human fertility or increase and a means of affirming life.

Gold, Debra [53] *see Fitzhugh, Ben*

Goldberg, Paul [176] *see Villeneuve, Suzanne*

Goldstein, David [148] *see Hageman, Jon [93]* *see Hayashida, Frances M.*

Goldstein, Lynne (Michigan State University)

[226] *Cremation in the Pre-Contact Eastern United States: Some Thoughts and Patterns*

Cursory examination of presence of pre-contact cremation throughout the eastern United States suggests that cremation occurs, but sporadically through time and space. I will attempt to review cremation practices in the Eastern U.S., focusing on when and where cremation occurs, patterns within the practice, and possible explanations for what cremation means in what context. In a number of cases, for example, cremation co-occurs with primary inhumation. Analysis will focus on context

and possible social meanings, and will attempt to tease apart differences in cremation practices, along with how these practices may be linked, distinguished, or different from secondary disposal practices.

[184] *Discussant*

Goldstein, Paul [233] *see Somerville, Andrew D. [233]* *see Johnson, Kent M.*

Goldstein, Steven (Washington University in St. Louis)

[7] *The role of vein quartz as a raw material in the prehistoric lithic industries of Long Island, New York*

Despite the predominance of vein quartz tools in many coastal regions throughout the New and Old World, relatively little consideration has been given to the ways the use of this particular raw material actually shapes coastal and island lithic industries. In an attempt to address this issue, a metric approximating "repair capacity" was formulated and applied to quartz projectile point assemblages from both coastal and inland archaeological sites on Long Island, New York. A comparison of these data suggests that tool morphometrics upon deposition were highly patterned, with curation pressures intensifying at sites farther from quartz sources.

Golitko, Mark [193] *see Burgchardt, Lucy A. [193]* *see Meierhoff, James W.*

Gomez, Josue (University of Oregon), Douglas Kennett (University of Oregon) and Barbara Voorhies (University of California-Santa Barbara)

[5] *Reconsidering "Pox" pottery: Early Ceramics from Coastal Guerrero*

"Pox" pottery has been considered one of the earliest ceramic assemblages in Mesoamerica, dated to ~2440 BCE (uncalibrated). We reevaluate its age and character based on excavations at the sites of Puerto Marques and La Zanja. Radiocarbon dates indicate that "Pox" pottery is no older than 1800 BCE (calibrated). This is comparable in age to other early pottery assemblages along the Pacific coast (Barra, coastal Chiapas). We also provide a type-variety description of the pottery originally characterized as "Pox", which was defined based on a single characteristic that appears to be a product of use rather than a stylistic element.

Gomez Choque, D. Enmanuel [245] *see Kurin, Danielle S.*

Gómez-Valdés, Jorge [237] *see Tiesler, Vera G.*

Gonciar, Andre (S.U.N.Y. at Buffalo)

[258] *Practices of change, change of practices: the Middle Bronze Age to Late Bronze Age transition in Transylvania (Romania)*

The dynamics of the transition Classical Bronze – Late Bronze Age in Transylvania (Romania), the fall of the Wietenberg and development of the Noua Culture, dwarf in complexity the Eneolithic-Bronze Age and Bronze-Iron Age transition processes. Not only these changes are very extensive and rapid, but they are not triggered nor the result of any aggressive practices as shown by the great majority of MBA sites. Settlement behavior, cognitive actualization, economic practices, funeral

rituals, symbology and iconography are replaced almost entirely throughout the Wietenberg territory in less than a hundred years, reflecting fundamental restructuring of socio-cultural and perceptual parameters.

[204] *see Gloux, Sabrina*

Gonlin, Nan (Bellevue College) and Christine Dixon (University of Colorado-Boulder)

[8] *A Twist on the Tortilla: Manioc at Ceren and Its Implications for Mesoamerica*

The role of maize in ancient Mesoamerican subsistence and ideology is well documented and substantiated through abundant archaeological and iconographic data. Reconstructions of sociopolitical characteristics, such as population estimates and complexity, are based on maize subsistence. Given the recent finds of manioc fields at Ceren, El Salvador, the implications of manioc subsistence must be considered for lowland (or 'tropical') Mesoamerica. This paper presents a comparison of Ceren with Copan, Honduras. The detailed data recovery at Ceren provides extraordinary information of a single Classic Maya site which provides insights to the extensive picture of a Classic Maya polity at Copan.

Gonzalez, Albert (Southern Methodist University)

[135] *Timber Exploitation, Charcoal Production, and Hispanic Anxiety in Nineteenth-Century Northern New Mexico*

Though archaeologists have directed attention at charcoal production sites in the general Southwest, those of nineteenth-century New Mexico have largely been ignored. Furthermore, prior archaeological studies have made no attempt to connect associated timber exploitation by agents of Manifest Destiny with the development of indigenous discontent. This study aims to address both deficiencies by linking charcoal production, timber resources, and indigenous rebellion against the backdrop of nineteenth-century Taos, New Mexico. More specifically, it will ask whether the production of charcoal by Taos distiller Simeon Turley led in some way to his operation's demise at the hands of a local mob.

Gonzalez, Jason J. [9] *see Andres, Christopher R.*

Gonzalez, Sara (Vassar College) [1] *First Moderator*

Gonzalez, Sara [48] *see Schneider, Tsim D*

González, Mariela [71] *see Flensburg, Gustavo*

González Heredia, Raymundo [67] *see Folan, William J.*

González Lauck, Rebecca B. [67] *see Buxt, Matthew A.*

Gonzalez-Licon, Ernesto (INAH-ENAH, Mexico)

[131] *Archaeology and ethnohistory of Mexicapan: A marginal barrio at Monte Albán, Oaxaca, Mexico.*

In this paper I describe and analyze the political organization and internal composition of Monte Albán as the Zapotec capital from Late Formative to Late Classic. The possible organization of the city in Barrios, their definition, quantity, and the formal and functional characteristics of them are considered using the archaeological and ethnohistorical information available. From a household perspective I compare the

archaeological data from Mexicapan, a marginal barrio in the northern part of the city, with other barrios located nearby the Central Plaza.

[131] *First Chair*

Good, Irene (Peabody Museum, Harvard U) and A.M. Pollard (University of Oxford)

[203] *Late Achaemenid Textiles from the Chehr Abad Salt Mine, Iran*

Chehr Abad, Iran has provided some unique evidence for the mining of salt from at least c. 400 BC. At least five bodies have been recovered, one of which was very well preserved, being fully clothed and carrying items of personal equipment. Isotopic data on body tissue and hair suggests that two of these individuals may have come from long distance, posing interesting questions about how the mine was utilized in antiquity. The excellent organic preservation provides a unique opportunity to understand the cultural and geographic origins of the salt mine mummies. Some preliminary results are outlined in this paper.

Goodale, Nathan (Hamilton College), George Jones (Hamilton College) and Dave Bailey (Hamilton College)

[22] *pXRF: A study of inter-instrument accuracy and precision*

Integrating portable X-ray fluorescence (pXRF) instrumentation into archaeological investigations has generated as much interest as skepticism because several characteristics of the technique limit analytical accuracy and precision. Recent pXRF engineering advances have significantly reduced these problems. To establish inter-instrument performance, two pXRF instruments, an Innov-X Delta and Omega, were utilized to obtain the trace element signatures of 10 volcanic sources in the Great Basin. To establish the accuracy and precision of the pXRF, chemical data were obtained with a Diano automated XRF wavelength spectrometer. Results suggest that these particular pXRF instruments produce data comparable to this wavelength system.

Goodale, Nathan [107] *see Gunter, Madeleine* [162] *see Kowsz, Erica E.* [107] *see Nauman, Alissa* [59] *see Vardi, Jacob*

Goodman-Elgar, Melissa (Washington State U.)

[223] *Social and ecological resilience in agrarian landscapes of the Andes*

Archaeological studies of agro-ecosystems predominantly address the longue-durée by setting food production trends within their ecological and cultural contexts. This commonly provides a palimpsest of events, diminishing emphasis on human agency and the social uses of farm products (e.g., feast foods). Using Andean case studies, I present an approach that accommodates short-term events, both social and agricultural, and their cumulative impacts. I suggest that an emphasis on agrarian architecture, and landscape modification as a process, enables stronger models of socio-natural resilience in ancient farming landscapes.

[3] *see Schnyder, Stacy L.* [249] *First Chair*

Goodsell, Joanne [83] *see Overly, Stephen A.*

Goodwin, Whitney (University of South Florida)

and E. Christian Wells (University of South Florida)

[31] *Administered, Non-market Trade in Postclassic Mesoamerica: Observations from Roatan Island, Honduras*

In greater Mesoamerica and the Caribbean, islands often provided ports of trade and commerce, embodying a broad range of economic and social interactions. The island of Roatan, off the north coast of Honduras, served as a strategic node in a complex exchange network connecting residents of the Maya lowlands with groups in upper Central America. Drawing on Karl Polanyi's ideas regarding administered, non-market trade, this presentation compares ceramic assemblages from recent excavations on the island to identify the major participants in the network as well as the organizational strategies they deployed during the Postclassic period.

Goodyear, Albert [120] see Daniel, Randy

Gordon, Bryan (Can. Museum Civilization)

[158] *Dating an old problem – petroglyphs: An extension of my past method of dating pictographs*

Petroglyphs are much more common worldwide than pictographs, with scientific dating very rare. Using the same procedure as in my website but using hammerstone fragments instead of pigment paint splatters, I explore results from Gabriola (Petroglyph) Island in British Columbia and Coso National Monument in California. http://http-server.carleton.ca/~bgordon/Journal/Web_Journal.htm

Gordon, Ishan

[138] *The Hidden Life of Ojo Caliente*

The Buffalo Soldiers of the 9th Cavalry participated in campaigns against many Native American groups. They were stationed around many parts of the U.S., predominantly New Mexico. Fort Selden, a fort where GAP has done mapping and GPR exploration, and other forts in the Southwest hold clues to what life was like at Ojo Caliente. By examining what archaeologists have found at these forts, as well as by looking at how these forts are documented in the archaeological record, this poster will seek to improve our understanding of the activities that took place at Ojo Caliente.

Gore, Angela (CSFA Texas A&M) and Kelly Graf (CSFA, Texas A&M)

[181] *Re-evaluation of the Denali Complex "Cobble Feature" at the Owl Ridge Site, Teklanika River, Central Alaska*

During initial investigations of the terminal Pleistocene-aged Owl Ridge site, researchers reported a cobble feature associated with a probable Denali-complex occupation; however, little had been excavated in the vicinity of this feature to determine its significance. Nevertheless, several interpretations of its function have been proposed, including dwelling, hunting blind, and wind break. While reinvestigating the site in 2010 we opened a block excavation around the feature to better understand its nature. In this poster we present our results, discuss the nature and function of the cobble feature, and place its use within the greater context of the site.

Goring-Morris, Nigel (Hebrew University) and Anna Belfer-Cohen (Institute of Archaeology, The Hebrew

University of Jerusalem)

[86] *Where There's a Will, There's a Way: Changes in Scale and Intensity in the Shift to Sedentism in the Early Holocene Near East*

Marked differences are documented in the timing, intensity and scale of Terminal Pleistocene-Early Holocene settlement patterns within the Levant, and especially between areas east and west of the Rift Valley. Our paper investigates the nature of such variability, from the first appearance of seasonal mega-sites during the Late Glacial Maximum through sedentary villages of the PPNB. We argue that initial aggregation had little to do with changed economic modes, as often has been assumed. We examine the nature of social and ritual mechanisms that facilitated aggregation, whether short term or permanent.

Gorogianni, Evi [167] see Fitzsimons, Rodney D.

Gould, Richard [76] see Moran, Kimberlee S.

Graesch, Anthony (Connecticut College), David Schaepe (Sto:lo Research and Resource Management Centre) and Lisa Dojack (University of British Columbia)

[232] *Built Space and the Instantiation of Political Authority in the Pacific Northwest: The Relationship of In-Ground to Above-Ground Residential Architecture on the Central Coast*

Archaeological and ethnographic data addressing the physical attributes and spatial organization of substantial, above-ground residential architecture have been used extensively to address intra-regional variation in aboriginal expressions of political authority in the Pacific Northwest. Recent investigations in the Fraser Valley have demonstrated that large in-ground and above-ground houses were occupied at the same time in distinctly Coast Salish settlements. Challenging conventional models of political organization on the Central Coast, this paper critically examines the relationship of in-ground to above-ground houses, focusing on data from Welqámex, a large settlement that fluoresced as a regional center of economic and political activity.

Graesch, Anthony [232] see Schaepe, David M.

Graf, Kelly (CSFA, Texas A&M University)

[120] *Was Clovis in Beringia? Current Status on Fluted Point Archaeology in Alaska*

Archaeologists have traditionally searched Beringia for Clovis origins. Alaskan fluted point sites, however, are relatively rare and questions remain regarding how Alaskan forms relate to Clovis in the contiguous United States. What is the age of fluted points in Alaska? Is it the same as or older than Clovis? Are Alaskan and Clovis fluted point technologies the same? Did Alaskan and Clovis fluted point makers share basic adaptive strategies? This paper draws upon new data from Serpentine Hot Springs and other fluted point sites across Alaska to inform on the chronology, technology and adaptations surrounding fluted point use in Beringia. **[181]** see Gore, Angela K. **[181]** see Younie, Angela M.

Graham, Carole (BLM - Anasazi Heritage Center) and Mona Charles (Fort Lewis College)

[188] *Reconstructing the Archaeology of the Burial Crevice, Falls Creek North Shelter*

Zeke Flora's 1937 discovery of well-preserved Basketmaker II human remains and associated perishable items prompted Earl Morris and Robert Burgh's 1938 excavations at the Falls Creek Rockshelter site. Unfortunately, the 1937 excavations were conducted with little regard for and no documentation of context. Recent investigations for the Falls Creek Rockshelters Reevaluation Project have revealed the presence of previously undocumented sediment remnants adhering to the walls of the Burial Crevice. Sediment profile and AutoCAD mapping, digital photography, extant radiocarbon dates, and archaeological documentation by Morris and Burgh are used in an attempt to reconstruct the depositional history of the Burial Crevice.

Graham, Elizabeth [56] *see* Donis, Alicia E.

Graham, Shawn (Carleton University)

[214] *Signal versus Noise, or, why blogging matters*

The single greatest reason for blogging, for creating a professional on-line profile and for creating a sustained presence for our research can be summed up in one word: Google. Academic blogs are content-rich, and tend to focus on very specific areas. Academic bloggers create an enormous signal in the chaos of the internet. Google controls how we find information; but often, academic blogging tells Google what's important. Thus, academic blogging can set the larger research agenda.

Grant, Dave (San Jose State University)

[194] *Patterns in Ancient Teeth: Palimpsests of Behavior*

In analyzing burial populations from the Santa Clara Valley patterns on teeth were found that did not conform to the normative wear explanation. The purpose of this study is to propose a definitional refinement of wear patterns found on teeth from Central California. Four distinct wear patterns were found. Major patterns include slants and rounding. Minor patterns were scoops and grooves. Statistically significant differences were identified. Analysis of the Southern population suggests these individuals had an elite class. The percentage of slants, rounding and scoops all increased through time from the older, Northern population to the younger southern population.

[194] *see* Griffin, Mark

Grant, Marcus (HDR|e2M)

[241] *Recognizing Late Nineteenth and Early Twentieth Century Native American Refuge Sites in the Desert West*

As conflict between Native Americans and Euro-American settlers in the western U.S. subsided in the early 1880s, the federal government adopted a policy of forced assimilation toward American Indians. During this time, which did not end entirely until 1978, Native American religions, clothing, and languages were outlawed. In parts of the desert west, Native Americans continued traditional lifeways in remote areas far from Anglo settlements. This paper, based on results of a Department of Defense Legacy project conducted in Wyoming and Nevada, examines the material culture and geographic locations of such Native American refuge sites between roughly 1850 and 1942.

Grant, Sarah (McMaster University), Tristan Carter (McMaster University), Metin Kartal (Ankara University) and Vecihi Özkaya (Dicle University)

[63] *Of Permanence and Procurement: Obsidian Sourcing at Körtik Tepe (SE Turkey)*

Located on the Upper Tigris, Körtik Tepe represents one of the earliest permanent farming settlements in the Anatolian part of the Fertile Crescent (early 10th millennium BC), comprising a six-phase occupation with a richly furnished intraumral burial record. While the site has a strongly local character, there is also clear evidence for interaction with communities at the larger regional level. Using EDXRF 100 obsidian artefacts were characterised as a means of not only clarifying the community's external relations, but also to contrast the behaviour (procurement / consumption) of early farmers in the eastern and western wings of the Fertile Crescent.

Gratuze, Bernard [100] *see* Dussubieux, Laure **[100]** *see* Lankton, James W **[167]** *see* Khalidi, Lamya

Grave, Alfonso (INAH)

[158] *Petroglyphs Associated with Fertility in Southern Sinaloa*

Among the more than 200 petroglyphs recorded in the bottom of the mountains of southern Sinaloa, the most commonly used designs are of course the spirals and soles but also a relative abundance of vulvas, penises and St. Andrew's crosses or vanes framed and even representations of Tlaloc, the god of rain. It is therefore fertility, or deities, that are the main theme of the petroglyphs in southern Sinaloa. The fertility of the earth is cyclical. Prolific during the rainy season, it is depleted in the dry, like the climate of the area.

Graversen, Poul (The Louis Berger Group)

[96] *A Modern Analysis of Petalas Blade Caches in New Jersey and Eastern Pennsylvania*

Caches of argillite blades, which are often referred to as Petalas blades, have been discovered all over New Jersey, eastern Pennsylvania, and other Middle Atlantic states. Some of these discoveries are recent, however many date to the end of the nineteenth and early twentieth centuries. Some of these caches have been previously analyzed, many have not. Artifact and cache analysis has undergone major changes in the last half a century. With the invention of new technologies and recent discoveries new patterns have emerged in the archaeological record. Petalas blades have long been thought to be used for the processing of migratory fish. Through research, analysis, experimentation, and the production of a number of GIS maps this hypothesis has fallen into question. Some of these argillite caches were undoubtedly used for the processing of fish; however others were definitely not used to this end and were perhaps instead instruments of trade.

Graves, Michael (Univ of New Mexico) and Mark McCoy (University of Otago)

[261] *The Timing of Agricultural Development in Leeward and Windward North Kohala, Hawaii Island.*

By AD 1700 Kohala represented a single political unit in north Hawaii Island. Archaeological investigations in the leeward (western, dry) and windward (eastern, wet) sections of Kohala have generated a large suite of 14C

dates from agricultural features. While the dates are reported from the leeward Kohala field system, there are 30 14C dates from a variety of agricultural contexts in the windward section of Kohala. These provide the basis for assessing the timing of agricultural colonization, innovative practices, expansion, and intensification across the district. We also discuss the potential social and economic implications of agricultural integration in Kohala.

[130] Discussant

Graves, Michael [261] *see* Ladefoged, Thegn **[261]** *see* Browne Ribeiro, Anna T.

Graves, William (Statistical Research, Inc.)

[43] *Michel Foucault, Antonio Gramsci, and the Hohokam*

At first glance, one may see little common ground between the writings of Michel Foucault and the work of Antonio Gramsci. Likewise, what could be the relevance of these two 20th century social theorists to the study of the Hohokam archaeological culture of Arizona? In my presentation, I discuss how these two scholars' notions of structural power relations can provide insight into social and political relations in Hohokam society. In particular, Foucault's ideas of disciplinary power and Gramsci's thoughts on culture and hegemony help us understand power relations among the Hohokam and how they may have changed throughout Hohokam history.

Gray, Amie (HDR/e2M) and Christy Smith (HDR/e2M)

[150] *Ruts, Bullets, and Beads: The Archaeology of Contested Landscapes*

The early years of Anglo incursion in the West were marked by armed conflict in many areas. American Indian warriors and U.S. soldiers fought battles as enemies and as comrades. Wyoming Army National Guard lands provide ideal locations for focused research on the material content and ecological settings of archaeological sites associated with a period of historical conflict. The Powder River Basin north of Camp Guernsey, was used by various plains tribes during intensive episodes of Anglo emigration and persistent clashes between Indian tribes and the U.S. military until 1890.

Grazioso, Liwy [119] *see* Scarborough, Vernon

Green, Adam (New York University)

[47] *Operational Sequences, Style, and Seals: Approaching Communities of Practice in the Indus Civilization*

Indus seal carving encompassed technological performances that underpinned an ancient administrative system that extended from the Eastern Mediterranean to South Asia. This paper draws upon technological concepts, including operational sequences and style, to outline a new methodology for identifying the communities of practice involved in producing Indus administrative technologies. With the resulting theoretical framework in place, I describe new microtopographic techniques for reconstructing the technological practices used to produce individual Indus stamp seals, including preliminary results from a pilot study. This new perspective emphasizes how individual objects were

produced, establishing a less normative framework for understanding technologies in early states.

Green, Debra (Metcalf Archaeological Consultants, Inc.)

[23] *Environmental Change and Landscape Modification in the Pre-Colonial Visayan Islands of the Philippines*

The history of island formation in the Philippines is characterized by the interaction between an array of environmental parameters including tectonic, geomorphologic, and climatic events that have shaped the variability and resiliency of pre-colonial agricultural strategies. Decisions that groups made about the natural environment were conditioned by their ability to negotiate social relations. Rapid sea level changes, tectonic uplift, and climate change combined with deforestation activities have contributed to coastal progradation in the Bais-Tanjay region that presented variable, but favorable physiographic environments for the intensification of agriculture. This research confirms the importance of a multidisciplinary approach to studying complex societies.

Green, Jenna (Trent University)

[103] *Sounds of Ritual: Music Archaeology of the Ancient Andes from the Early Horizon to the Middle Horizon (900 B.C.-A.D. 1000)*

In order to understand the significance of music in prehispanic times, it is essential to examine the contexts in which musical instruments are found. This paper uses music archaeology and ethnographic analogy to examine central Andean music, from the Early Horizon to the Middle Horizon, with particular focus on the use of musical instruments by highland peoples. This work shows that music was part of an Andean tradition in which several prehispanic societies used musical instruments in rituals and ceremonies related to warfare, agricultural fertility, dedications, and burials.

[103] First Chair

Green, Margerie (Archaeological Consulting Services), Robert Stokes (Archaeological Consulting Services, Ltd.) and Marcia Donaldson (U.S. Bureau of Reclamation)

[83] *U.S. Bureau of Reclamation's Farm Rehabilitation Project Collaborations with the Navajo and Tohono O'odham Tribes in Arizona, as implemented by Archaeological Consulting Services, Ltd.*

Recent Reclamation projects involved collaborative efforts with two of Arizona's largest Native American groups, the Navajo Nation and the Tohono O'odham Nation. Both involved construction of infrastructure to support traditional and cooperative farming as part of the national Water Settlement Rights act. The Navajo Nation project involved the creation of an award-winning DVD of Navajo elders discussing traditional irrigation farming at Ganado, and the Tohono O'odham Nation project involved extensive testing prior to construction of new irrigation pipelines for their farm cooperative. This poster presents the benefits of working closely with Native American tribal members to ensure mutually beneficial outcomes.

Green, Margerie [83] *see* Stokes, Robert J.

Green, Paul (USAF) [185] Discussant [118] Discussant

Green, Rachelle (Uinta-Wasatch-Cache National Forest)

[91] *Application of Ethnographic Foraging Catchment Data to Investigate Fremont Settlement Patterns in Range Creek Canyon, Utah.*

Ethnographic research shows that central place foragers, in relatively unvaried terrains, exploit resource catchments measuring up to 10 km from central locations, any further becomes energetically inefficient. These constraints can be used to predict the catchments for archaeologically known central places located within Range Creek Canyon. Prehistoric residential sites in this canyon are widely distributed, and have extreme changes in elevation within a 10 km radius that alters catchment size and shape. Here, catchments are estimated using a model built with GIS technology and an energy expenditure algorithm, to gain an understanding about Fremont settlement patterns within Range Creek Canyon.

Green, Scott (California State Parks)

[259] *Preserving the Past for the Future: Eight New Cultural Preserves in California State Parks*

California State Parks will be classifying eight new Cultural Preserve in Anza-Borrego Desert and Topanga State Parks. Cooperative planning was critical in creating a consensus between resource managers in the State Parks, the Native American community, neighboring land agencies and the public. These new extensive preserves will allow for the focused management of the cultural resources present while providing appropriate recreation opportunities and new interpretation. The recognition of these outstanding cultural areas and landscapes ensures State Parks Mission goals and provides a new approach to the management of broad culturally sensitive areas in California State Parks.

Green, Ulrike (University of California San Diego)

[229] *Meeting in the Middle: Rethinking Culture Contact in the Moquegua Valley, Peru*

Scholars investigating cross-cultural contacts have long abandoned the simplicity of acculturation studies etc., and more recent models have begun to address the incredibly complex nature inherent in any cross-cultural encounter. This paper explores how the multi-dimensionality of these new frameworks helps to more accurately examine the complexity of cross-cultural encounters. A case study from the Moquegua valley in Southern Peru will serve to illustrate the usefulness of such a multi-directional approach in fleshing out the practices and motivations in cross-cultural interaction in a colonial frontier setting.

Green, William (Logan Museum of Anthropology, Beloit College)

[240] *Greenshield Revisited: Alfred W. Bowers' Excavations at a Contact-Era Arikara and Mandan Site in Oliver County, North Dakota*

The Greenshield site was the location of the northernmost known 18th-century Arikara village along the Missouri River. An earlier Mandan component also is present. Of the various excavations at the site, the most extensive was conducted by Alfred W. Bowers in 1929. Bowers recovered a wide variety of objects of Native manufacture along with European trade-derived objects, as well as Native-modified trade goods, from both

habitation and burial contexts. Analysis of Bowers' and other excavators' collections, including determination of activity sets represented in the assemblages, allows Greenshield to fill a temporal gap in previous studies of Arikara contact-era cultural change.

[240] *First Chair*

Greene, Michelle

[219] *Using Craniometric Measurements to Explore Possible Gene Flow in Local Populations in the Middle San Juan Region of New Mexico*

The population in the Middle San Juan region is composed of local peoples and possibly migrants from the nearby cultural centers of Chaco Canyon from the south, and Mesa Verde from the north. One way of estimating genetic relationships is through craniometric measurements, which prior research has shown to have a genetic basis. This study examines nine craniofacial measurements taken from six sites in the Middle San Juan region, two sites from Chaco Canyon, and various sites in the Mesa Verde region, to ascertain their genetic affinity.

Greenway, Greg (US Forest Service) [112] *Discussant*

Greer, John [60] *see Greer, Mavis*

Greer, Mavis (Greer Services) and John Greer (Greer Services, Archeological Consulting)

[60] *Horses in Northern Plains Rock Art in a Global Perspective*

Horses can be some of the most well executed rock art animals, such as Paleolithic representations in Southern France, or they can be some of the most quickly sketched abbreviated forms, as some historic depictions in western North America. Their presence and style are chronological and cultural indicators in the New World, and style can additionally relate information on panel function, ethnicity, social behavior, and intercultural relations. The motif has great variation but is readily recognizable. Reviewing one motif type from local to global levels demonstrates the importance of research designs in recording projects.

Gregg, Michael (University of Pennsylvania Museum)

[19] *A pilot study and experimental program to improve the efficacy of stable carbon isotopes in categorizing organic residues from early pottery vessels*

Recent studies have demonstrated that difficulties in identifying organic residues surviving in early pottery vessels from the Middle East result not only from poor preservation of animal fats and plant oils, but also from misconceptions about the adequacy of the previously-reported analytical criteria when applied to ceramics from different regions of the world. This paper summarizes the physiological, environmental and anthropogenic factors affecting the fractionation of stable carbon isotopes, and outlines an experimental program for accurate interpretation of isotopic values of residues in the earliest pottery from a narrow geographic corridor linking the Middle East with Central Asia.

[19] *Discussant*

Gregoricka, Lesley (The Ohio State University)

[152] *Mobility and tomb membership in Bronze Age Arabia using strontium isotope analysis*

While archaeological evidence points to growing interregional trade networks during the Bronze Age (3100-1200 BC) in the Near East, little is actually known about the movements of people that made these commerce-driven relations possible. Strontium ($^{87}\text{Sr}/^{86}\text{Sr}$) isotopes from human and faunal tooth enamel are utilized in reconstructing the childhood geographic residence of individuals interred across the Oman Peninsula in monumental tombs, visible markers of commemoration and territoriality that dominate the landscape. Major mortuary transformations from the Umm an-Nar (2500-2000 BC) to Wadi Suq (2000-1200 BC), accompanied by economic and sociocultural changes, are evaluated in light of temporal changes in mobility.

[152] *see Ullinger, Jaime*

Gregory, Cody [161] *see McMahon, Catherine*

Gregory, Danny (New South Associates)

[81] *Archaeological and Geophysical Survey Along the Cumberland River in Kentucky and Tennessee*
New South Associates completed an inventory along a 300-mile stretch of the Cumberland River for the Corps of Engineers. It extended from Lake Cumberland in central Kentucky, southwest to Nashville, and northwest to Lake Barkley in western Kentucky. The survey encompassed a variety of prehistoric and historic sites including prehistoric campsites, Mississippian villages, stone box cemeteries, Civil War earthworks, farmsteads, historic cemeteries, and a 19th century town and steamboat launch. Fieldwork included inventory, stabilization of looted sites, and geophysical survey (GPR and magnetometer). The behavior and field methods of local looters were also examined.

Gregory, H. Pete [64] *see Hargrave, Michael L.*

Grenda, Donn (Statistical Research, Inc.), John Douglass (Statistical Research, Inc.) and Richard Ciolek-Torrello (Statistical Research, Inc.)

[151] *Changing Patterns of Settlement and Site Structure in the Ballona Area, west Los Angeles*

Since the 1920s, avocational and professional archaeologists have documented archaeological sites of the Ballona area, both adjacent to the former wetland and on the bluffs overlooking them. This paper discusses historical perspectives on Ballona settlement and site structure, as well as current interpretations based on extensive archaeological investigations of numerous sites in the area. Although some settlement patterns may reflect the ebb and flow of the evolving Ballona Lagoon and climatic changes, other patterns strongly suggest cultural interaction and persistence of place.

Grenda, Donn [151] *see Ciolek-Torrello, Richard [151]*
see Altschul, Jeffrey H. [151] *see Reddy, Seetha N.*

Grier, Colin (Washington State University)

[232] *Resource Ownership and Contested Domains of Sociopolitical Complexity in the Coast Salish World*
With few exceptions, resource ownership systems amongst the Coast Salish have been described rather than analyzed. Diachronic models for their development emphasize control of salmon fishing locations, and derive primarily from human behavioral ecology premises. Yet,

the Coast Salish have actively invested in their physical and symbolic world over millennia, and resource ownership systems must be seen as arising within new and contested social domains emerging from an increased investment in infrastructure, resources and landscapes. I present a model that posits ownership as an expansive and profound realignment of Coast Salish sociopolitics within a broader trajectory of increasing social complexity.

[178] *see Flanigan, Kelli B.*

Griffin, Dennis (Oregon State Historic Preservation Office)

[154] *Education Through Recreation: Celebrating Oregon's Cultural Heritage through Theme-based Playing Cards*

2009 marked Oregon's Sesquicentennial celebrating the state's 150 years of statehood. To help celebrate the state's anniversary a deck of playing cards has been created highlighting the state's rich cultural heritage. Inspired by the U.S. Department of Defense's 2007 archaeology awareness playing cards for the troops fighting in Iraq and Afghanistan, Oregon SHPO has designed a deck of playing cards highlighting the state's history through recognition of its unique historic structures, archaeological sites, artifact classes, and key preservation issues. These cards are designed to introduce the public to Oregon's rich history and encourage cultural resource stewardship.

Griffin, Mark (San Francisco State University), David Grant (San Jose State University) and Randy Wiberg (Holman and Associates)

[194] *Oral Health Status in an Ancient Central California Population*

The Vineyards site (4-CCO-548) is a central California site dating to the Middle Archaic (4350 and 550 BC). The large sample size (N=479) makes the Vineyards site ideal for the examination of the relationship between attrition, caries, and periodontal disease. Results of this analysis show: (1) extensive dental attrition (6.11 on the Smith scale), (2) extraordinarily low frequency of carious lesions (2.5%), and (3) high frequency of apical abscesses (10.7%). Results of our analysis show that there is an inverse relationship between attrition and caries and a positive correlation of heavy attrition and apical abscesses.

Griffin, Mark [194] *see Guidara, Andrea L [194]* *see Marks, Jennifer L. [194]* *see Bartelink, Eric J.*

Griffin, Robert [119] *see Dunning, Nicholas P.*

Griffith, Cameron (Northern Arizona University) and Andrea Stone (University of Wisconsin-Milwaukee)

[60] *Try This on for Size: Exploring Implications of Scale in Mesoamerican Rock Art*

The fact that rock art is literally connected to the Earth's rocky surface raises issues of scale of the size of certain rock carvings as well as the spatial references encoded in rock art symbols. This paper explores petroglyph abstractions from many regions of Mesoamerica which symbolically reference vast tracts of terrestrial space and their hydraulic features. Examples of speleothem sculptures in Belizean caves, whose large scale defies expectations of rock art's size in relationship to the

environment, are also presented. We argue that the expression of large scale emanates from the terrestrial substrate of petroglyphs and sculptures.

Griffitts, Janet (SRI)

[177] *Birds of a feather: wild food use in turn-of-the-century Tucson*

This study examines the varying ways of interpreting wild food use using different kinds of data and illustrates the importance of multiple lines of evidence. The study uses material recovered in SRI's excavations of the Joint Courts Complex project in Tucson, from two adjacent residences occupied by two generations of one family. Amounts and proportions of wild game differed between the two households, especially birds, but the household with more bird bone contained almost no ammunition. Finally, archival evidence provides hints to behaviors that could have caused this pattern. This study also examines social significance of different wild taxa.

Griffitts, Janet [151] see Cannon, Amanda C.

Grijalva, Daniel (CSU-Fullerton) and Steven James (CSU-Fullerton)

[263] *Prehistoric Human Impacts on San Nicolas Island in the Southern California Channel Islands: Evidence for Overexploitation and Resource Depression of Shellfish At Site Ca-Sni-44*

Archaeological evidence from 2.7 meter-deep test excavations at a late Holocene shell midden (CA-SNI-44) on the central plateau of San Nicolas Island are presented. Measurements of black abalone and California mussel indicate that the prehistoric inhabitants were over harvesting shellfish beds through time. Analytical results provide the following: evidence for impacts of human predation on shellfish populations over prolonged periods of harvesting; inferences on changes in subsistence patterns based on overexploitation of certain species; and reconstruction of foraging practices over a long archaeological sequence that can be compared to other island and coastal sites in southern California.

Grillo, Katherine (Washington University in St. Louis)

[208] *Pastoralist Ethnoarchaeology on Household Container Assemblages in Samburu, Kenya*

Ethnoarchaeological research among a mobile herding community in Samburu, north-central Kenya, has yielded results on the multiple factors that influence household container assemblages. Data from household inventory surveys speak to how mobility, wealth, income, household demographics, and pastoralist subsistence influence the numbers and types of cooking, serving, and storage vessels found in Samburu homes. Particular attention will be paid to ceramics and their distribution across the broader pastoralist landscape. Discussion will also consider archaeological implications for future studies of pastoralist vs. hunter/gatherer and agriculturalist material cultures.

Grillo, Michaela [106] see Hanson, Thomas

Grofe, Michael (American River College)

[145] *The Astronomical Associations of Uhuk Chapat Tz'ikin K'inich Ajaw: archaeoastronomy using the Maya Hieroglyphic Database*

This paper presents an example of how the Maya Hieroglyphic Database is used to identify correlations between hieroglyphic texts and specific positions in the tropical year. "Uhuk Chapat Tz'ikin K'inich Ajaw" is a deity name mentioned throughout the corpus of Maya inscriptions. The database identifies most known examples of this name, together with the Long Count dates of the monuments on which they appear. An analysis of this data suggests a strong correlation between this deity and the solar nadir at Maya latitudes. This correspondence is informative when considering additional iconographic, ethnographic, and astronomical information.

Grossardt, Ted [64] see Mink, Philip B.

Grove, Matt (University of Liverpool)

[43]

Viable generalists? A single locus model of variability selection

The variability selection hypothesis suggests that increases in environmental fluctuation have led to the evolution of complex, flexible behaviors able to respond to novel and unpredictable adaptive settings. This hypothesis is tested via the framework of a single locus genetic model in which an invading 'generalist' allele competes with two opposed specialists in a selection regime driven by a temporally fluctuating environment. Results demonstrate that generalist alleles achieve fixation given a minor fitness increase over the basic specialist template. These results are discussed in relation to the appearance and spread of Oldowan technologies.

Grover, Margan (Bold Peak Archaeological Services)

[195] *Historical Archaeology of Early Russian America on Adak Island, Central Aleutian Islands*

For decades, small-scale Russian fur traders moved across Russia, eventually arriving in Kamchatka and the Aleutian Islands. The 1741 Bering and Chirikov expedition confirmed the existence of the Aleutian Islands and mainland Alaska, and revealed a region rich in resources. The evidence of these early hunters on the landscape is minimal, yet their impact was immeasurable. This paper will explore several early Russian American period sites on Adak Island and the relatively untapped data potential for historical archaeology in the Central Aleutian region.

Grupe, Gisela [42] see Vohberger, Marina A.

Guderjan, Thomas (University of Texas at Tyler), Colleen Hanratty (Southern Methodist University) and Tim Preston (Merritt College)

[191] *Abandonment, Ritual, and Survival at Blue Creek, Belize, and its Neighbors.*

This paper is focused on the large scale, Late-Terminal Classic abandonment and concomitant ritual activities in public and elite residential settings at Blue Creek. Importantly, at least two large elite residential groups continued to renovate and rededicate structures and to reorient themselves to external political powers after the central precinct was abandoned. We also review the Postclassic occupation and use of the extensive system of ditched agricultural fields, though we are uncertain

whether these are continued occupations or reoccupations of the area. Finally, we contrast these patterns with the anomalous politics of the region that thrived into the Postclassic.

Guderjan, Thomas [238] see Krause, Samantha

Gudino, Alejandra (Human Environmental Sciences University Missouri) [15] *Second Organizer [15]* *First Chair [15]* see Lippi, Ronald D.

Guendon, Jean-Louis [224] see Salinas, Hernan P.

Guengerich, Anna (University of Chicago) [227] *Public, private, and the political house: reconfiguring the role of residential structures in late prehispanic Chachapoyas*
Round stone structures dominate the built environment of settlements in late prehispanic Chachapoyas. Although usually glossed simply as "houses," preliminary architectural analysis suggests that these structures transcended strictly domestic functions to play an encompassing role in Chacha societies, serving as the primary theaters of social, political, and ritual life. These buildings are distinguished by a high degree of artistic embellishment and technical expertise, traits usually associated with the monumental constructions of hierarchical polities. The Chacha database further problematizes our conceptions and theoretical models of the "household" and how we understand its relationship to "public" spheres of political activity.

Guernsey, Julia (University Of Texas At Austin) [186] *From household to plaza: figurines, sculpture, and the construction of elite identity in the Preclassic*
Aspects of the La Blanca ceramic figurine tradition, a hallmark of Middle Preclassic household ritual, anticipate Late Preclassic sculpture programs, in particular the famous yet enigmatic "potbellies" or barrigones. I link these intriguing transitions between figurines and sculpture, and domestic and public space, to the construction of elite identity during the Late Preclassic period and discuss how it appears to have successfully appropriated earlier domestic ritual forms. The paper also touches on the implications of this evidence as it regards the transition from chiefdoms to states during the Middle to Late Preclassic period in this region.
[186] *Second Organizer*

Guidara, Andrea (San Francisco State University), Mark Griffin (San Francisco State University) and Randy Wiberg (Holman and Associates, San Francisco) [194] *Canine Dimorphism in Ancient Central California*
This study examines the extent of canine sexual dimorphism at the Vineyards site (4CCO548). By conducting one-way independent (student's) t-tests, a statistically significant difference was found between males and females for the MD and BL measurements of the upper and lower canines of each the left and right sides. A discriminant analysis was conducted using SPSS. The resulting discriminant function and cut-off score was used to predict group membership (male or female) for previously indeterminate individuals from the Vineyards site. The results of this analysis will provide a useful tool for assessing sex in fragmentary remains.

Gullapalli, Praveena (Rhode Island College) [189] *Crafting Continuity: Delineating (Social) Actions in Metal Artifacts*

Sites from South India have yielded an extraordinary corpus of early metal artifacts that have been subjected to analyses that highlight their functional efficacy and the technical expertise of their makers. I use extant metallurgical data to continue the discussion of how these artifacts were made, moving beyond a narrow focus on utilitarian paradigms to investigate evidence for other types of information that might be encoded within them. I argue that certain patterns in the production practices of the early South Indian metalworkers – such as lamination – could also be understood to be as much social practices as technical ones.

Gunter, Madeleine (Hamilton College), Nathan Goodale (Hamilton College), Dave Bailey (Hamilton College), Melissa Coles (University of Notre Dame) and Ian Kuijt (University of Notre Dame) [107] *Portable XRF Analysis of Early Medieval Gravestones in Western Ireland*

Two years of data collection and field work on the remote coastal islands of western Ireland suggests that, despite their geographic isolation, Early Medieval people produced and transported gravestones during the 5th to the 12th century. Gravestones at different sites exhibit similar decorative motifs; however there is no other physical evidence to support their inter-island exchange. Using portable X-Ray Fluorescence (pXRF) technology, we reconstruct gravestone trade by analyzing and comparing the elemental signature of over 200 metamorphic gravestones and bedrock samples from seven islands. Preliminary data analysis has identified multiple patterns of inter-community exchange and local production.

Gursan-Salzmänn, Ayse [167] see Massey, David

Gusick, Amy (University of California, Santa Barbara) [123] *Behavioral Adaptations and Mobility of Early Holocene Hunter-Gatherers, Santa Cruz Island, California*

Previous mobility hypotheses that have been formed for the Early Holocene on the Northern Channel Islands have included minimal data from Santa Cruz Island, the largest and most environmentally diverse landmass within the Northern Channel Island chain. Yet, data from this island are important because the three main Northern Channel Islands vary in size, environment, and biodiversity. These differences can have a profound effect on foraging and mobility. Recent excavations have provided data that help clarify the nature of Early Holocene mobility and settlement systems on Santa Cruz Island.

Gustafson, Daniel (Food and Agriculture Organization of the UN) [199] *Discussant*

Gustas, Robert (Humboldt State University) [161] *Peoples of Humboldt County – A Cultural Center*
The Northwest Coast of North America is home to a diverse and unique mixture of indigenous cultures. This poster explores the idea of creating a cultural education

center in Humboldt County, CA to inform the public about the indigenous cultures of the county, the field of archaeology, and provide cultural and archeological resources for local communities. This project attempts to suggest ways of facilitating cooperation between archaeologists, indigenous peoples, and most importantly local communities. By increasing cooperation and communication among all of these parties the archaeological process becomes more productive and the results more satisfactory for all parties.

Guthrie, Brady (Idaho Army National Guard- Boise State University), Sam Smith (Idaho Army National Guard) and Jonathan Dugmore (Idaho Army National Guard)

[150] *Site Integrity within National Guard Training Lands*
The 140,000 acre Orchard Training Area (OTA) provides archaeologists with unique research opportunities. The central question of this project is: how well is site integrity maintained within the National Guard zones of control when compared with those sites outside of the OTA? The focus is on three areas of investigation specifically, sites within the impact areas, sites within the maneuver training areas, and those sites outside of the OTA boundaries. The project will take into account controls and efforts to abate looting, military training activities, and environmental changes to site areas over time.

Gutierrez, Adam [77] see O'Brien, Christopher [77] see Bayham, Frank E.

Gutierrez, Maria (CONICET, INCUAPA), Agustina Massigoge (CONICET, INCUAPA), Daniel Rafuse (INCUAPA, Facultad de Ciencias Sociales (UNCPBA)), María Alvarez (CONICET, INCUAPA, Facultad de Ciencias Sociales (UNCPBA)) and Cristian Kaufmann (CONICET, INCUAPA, Facultad de Ciencias Sociales (UNCPBA))

[177] *Actualistic Taphonomy in the Pampean Region: Limitations, Challenges, and Results*

In the pampean region of Argentina, taphonomic studies have focused on the analysis of taphonomic effects and patterns in the archaeofaunal assemblages. Progress in actualistic taphonomy studies is lacking. The following work presents the preliminary results of recent actualistic taphonomy studies developed in the region. The objective is to generate a corpus of data for the development of hypothesis regarding different processes involved in the formation of the archaeological record in the pampean grasslands. Results from taphonomic transects in different environmental settings in the region, the systematic observations, as well as the experimental design of the project are discussed.

Gutierrez, María de la Luz (Instituto Nacional de Antropología e Historia)

[147] *Beyond the Threshold: Mortuary Customs and Worship to the Caves in the Prehistory of Central Baja California, Mexico*

One of the least known aspects of the prehistory of central peninsula of Baja California refers to the mortuary customs practiced by the Peninsular Yumans. In the sierras of San Francisco and Guadalupe only seven burial sites have been explored, very few considering the extent of this region; however, excavations have provided interesting results. This paper will present some

reflections about burial techniques and evidence that suggests how important this was for the cultural identity and collective memory of these peoples, the veneration of their ancestors, their mythical figures and their caves, whether they were mortuary or not.

Gutiérrez, María [168] see Martínez, Gustavo A.

Guttenberg, Richard, William Kendig, Rebekka Knierim, Steven Schwartz and Renè Vellanoweth [123] *GIS as a Tool for Analyzing Intrasite Spatial Variability on San Nicolas Island*

On San Nicolas Island we have been using GIS for over a decade to analyze the spatial distribution of archaeological sites across the landscape. We have recently explored the efficacy of GIS on an intrasite basis. Here, we focus on CA-SNI-25, a village site with excellent stratigraphy, chronology, and preservation and examine variations in lithic technology in association with archaeological features within separate loci. Bivariate and multivariate spatial data are statistically and visually analyzed and interpreted. This methodology offers a window into spatial and temporal variability in technology, subsistence, and the organization of traditional village life before European influence.

Guzman, Benito [88] see Wake, Thomas A.

Guzman Piedrasanta, Melvin Rodrigo [9] see Kovacevich, Brigitte

Haas, William [264] see Huntley, Deborah L. [155] see Anderson, Derek T.

Haas, Wm. (The University of Arizona)

[63] *XRF Characterization of Fine-grained Volcanics of the Lake Titicaca Basin, Peru*

Fine-grained black igneous toolstone comprises approximately 65 percent (n=870) of Archaic bifaces in the Lake Titicaca Basin, Peru. Because of its ubiquity and potential for generating geographically distinct geo-chemical signatures, such material provides a means for examining prehistoric material flows at relatively resolved geographic scales. The goal of this study is to explore the scale at which Titicaca Basin volcanics can generate behaviorally meaningful geo-chemical variation. I present the results of XRF observations on debitage and geologic samples from the Ilave, Ramis, and Vilque drainages. The implications for reconstructing and analyzing Archaic land-use patterns are discussed.

Habicht-Mauche, Judith (UC-Santa Cruz)

[264] *Dr. Strangesherd or: How I Learned to Stop Worrying and Love Tijeras White Ware*

The White Ware assemblage at the Late Coalition-Early Classic Period site of Tijeras, New Mexico (ca. A.D. 1280-1420) is amazingly diverse. While reflecting some general similarities with other fourteenth century, carbon-painted, Rio Grande White Ware assemblages, it is not easily sorted into the standard types, most of which were defined from sites further north. Attribute analysis is used to examine how surface treatment, rim form, and decorative elements either cluster within or crosscut different paste groups. These data are used to define networks of social interaction as reflected in the production and exchange of White Wares from Tijeras.

Hackel, Steven [151] *see Douglass, John G.*

Hackenberger, Steven [178] *see Endacott, Neal*

Hackner, Stacy (University of Chicago/University College London), Maria Cecilia Lozada (University of Chicago) and Augusto R. Cardona (CIARQ)

[129] *Us and Them: Molle and Maize Beer in the South Central Andes*

Evidence of production of chicha de molle, a beer made from pink peppercorns, has been found at Wari sites including Cerro Baúl, Beringa, and Millo II in the Vitor Valley. We examine the archaeological evidence at each of these to characterize the Wari's production, consumption, and distribution of this fermented beverage. By comparing this practice to the traditions of alcohol consumption of the Tiwanaku and the Inka, we discern a pre-Hispanic paradigm of consumption. We explore how the Wari diverged from this model by consuming molle beer instead of maize beer and the possible reasons for this unique cultural preference.

Hadden, Carla and Kelly Orr (American Association for the Advancement of Science)

[10] *Lumping and Splitting: Measuring the Effects of Data Aggregation on Site Interpretation*

Data aggregation is inherent to archaeology, but the way we decide to lump or divide our data may result in subtle differences in interpretation. To better understand these affects, we recorded primary zooarchaeological data (e.g., taxonomic identification, count, weight) from several discrete, rapidly deposited features from Bayou St. John (1BA21), a Late Woodland site in coastal Alabama. The feature data were aggregated or partitioned according to a variety of random and non-random schemes, and secondary data (e.g., biomass, diversity, equitability) were derived from each aggregated dataset. The results illustrate the importance of selecting appropriate data aggregation schemes.

Haeusler, Werner [162] *see Wagner, Ursel*

Hageman, Jon (Northeastern Illinois U) and David Goldstein (University of South Carolina)

[148] *Acting Locally: Rural Ancient Maya Farming Communities and Resource Organization*

Intensively terraced areas of the landscape comprise the foci of ancient farming communities across the Three Rivers Region of the eastern Peten. Such practices may have taken priority over extractive core-periphery relations or other visible, active, enforced power relations with larger ceremonial centers. Paleoethnobotanical and ceramic evidence argue for a local tradition of periodic feasting and daily provisioning based on available resources of the bajos, forests, and farmland. Our test cases indicate locally mediated land use was germane to developing and maintaining social ties, and in rural contexts may have taken priority over interaction with regional-scale power brokers.

Hager, Lori (Catalhoyuk Research Project)

[16] *The Young and the Old: Sex-related Age Differences and Age-related Sex Differences*

Gender identity of individuals from archaeological sites begins with accurate determinations of age and sex.

Since many factors, including age, sex and gender, contribute to bone development and bone degradation, the age of an individual influences the morphologies used to determine sex and the sex of an individual influences the morphologies used to determine age. The importance of sex to age determinations, such as in young people where males and females mature at different times, and of age to sex determinations, such as in older females where hormonal shifts have consequences in skeletal biology, are issues bioarchaeologists need to revisit.

[152] *see Boz, Basak*

Haggis, Donald (University of North Carolina at Chapel Hill)

[86] *Social Organization and Aggregated Settlement Structure in an Archaic Greek City on Crete (ca. 600 B.C.)*

One aspect of urbanization in the Aegean at the end of the Early Iron Age (ca. 800-600 B.C.) is the nucleation of population—settlement aggregation and the restructuring of social, political and economic landscapes, giving rise to Classical Greek cities and city-states. This paper presents a case study of an excavation of one such early emergent center, the site of Azoria on Crete (700-500 B.C.), examining patterns of agropastoral production and consumption in specific contexts (domestic and communal) of emerging public and civic institutions and buildings that mediated social and political interaction and formed mechanisms of community organization and integration.

Hagler, Jeremiah (Phillips Academy), Claire Gallou (Phillips Academy) and Malinda Blustain (Phillips Academy)

[196] *Teaching From the Museum: the Ongoing Integration of the Robert S. Peabody Museum Into the Curriculum of Phillips Academy*

The unique collaboration between Phillips Academy teachers and the Peabody has played a continuing role in interdisciplinary education since 2004. The museum has created customized presentations for a wide range of courses and students have undertaken research collaborations and creative projects in different fields including history, biology, and languages. In this session, the Biology and French Departments will explain how such collaborations worked, presenting examples of genetic studies on ancient dog bone by biology students, and translation by French students of documents exchanged between the Peabody and Musée d'Archéologie Nationale about the return of French Paleolithic artifacts.

Hagler, Jeremiah [196] *see Doheny, Marcelle A*

Hahn, Randy (McGill University)

[227] *Local Interactions with Provincial Administration in the Kingdom of Chimor*

This paper examines the relationship between subjugated provincial populations and the political administration of the Kingdom of Chimor on the Peruvian North Coast. Focusing on the site of Huasi Huaman following the Chimú conquest of the Jequetepeque Valley, material expressions of identity are used to explore interactions with Chimor's provincial administration. Through the lens of local responses to

imposed rule, Huasi Huaman is used to demonstrate the complexity of political relations within a subjugated population while providing insight into the scope of Chimor's political power and its influence on the formation of identity.

Haines, Helen (Trent University)

[40] *Curiouser and Curiouser: A Glimpse into the Early History of Ka'Kabish, Belize*

Recent work at the site of Ka'Kabish in Northern Belize has raised questions as to the structure of political power in the region during the Formative and Classic periods. Previously thought to be a subsidiary site of the larger centre of Lamanai (roughly 10 km distant) this new data shows that Ka'Kabish possessed its own elite residents, economic base, and program of ritual architecture indicative of a thriving independent city. Using this new data this paper addresses an enigmatic period of Maya history in Northern Belize.

[243] *see Aimers, Jim J.*

Hale, Micah (ASM Affiliates)

[132] *A 10,000 year old habitation in La Jolla: Implications for trans-Holocene adaptive stability in Southern California*

A 10,000 year old human burial was recovered from CA-SDI-4669, a prehistoric habitation on the bluffs of La Jolla, California. The associated assemblage fits the classic La Jolla (i.e., Millingstone Horizon) profile, characterized by large numbers of groundstone tools, cobble tools, and crude flaked stone tools. Placed in a regional context, this site is the anchor for one of the longest-standing socioeconomic patterns known for the New World and forces reconsideration of the character of cultural evolution. I argue that this site reflects the beginning of a stable time-minimizing adaptive strategy that persisted until ethnohistoric times.

[168] *see Brodbeck, Mark*

Hall, John (Statistical Research Inc.), Michael Heilen (Statistical Research, Inc.), Robert Wegener (Statistical Research, Inc.) and Christopher Garraty

[80] *Between Hohokam and Salado: View-shed Analysis of a Fortified Hilltop Site along the Upper Queen Creek Drainage*

As part of a U.S. Army Corps of Engineers (USACE) ARRA funded project, Statistical Research, Inc. intensively surveyed USACE fee-title lands in the Whitlow Ranch Flood Control Basin, along Queen Creek and near Queen Valley, Arizona. A previously documented and extensive early-Classic period hilltop site complex (AZ U:11:29 [ASM]) was re-recorded. Viewshed analysis was conducted to evaluate visibility of arable land and other contemporaneous sites along Queen Creek. Analysis results reveal the importance of agricultural land, cultural affiliation, intersite communication, and the potential establishment of an early-Classic period defensive network of fortified hilltop sites along upper Queen Creek.

Hall, Lauren [31] *see Szirmai, Jenica*

Hall, Sharon [223] *see Kruse-Peebles, Melissa R.*

Haller, Jonathan [137] *see Boyd, Jon R.*

Halligan, Jessi (Texas A&M University, CSFA)

[265] *Site Formation Processes and Paleoindian Artifact Context in Submerged Sinkholes of Northern Florida*

Thousands of Paleoindian artifacts have been recorded from Florida rivers, but only a small percentage were recovered by archaeologists from excavated context. Geoarchaeological analyses, including remote sensing, vibrocore, sediment analysis, unit excavation, and radiocarbon dating, are being done at two submerged sinkhole localities in the Aucilla River of northwestern Florida. Both contain diagnostic Paleoindian artifacts and potentially intact strata. One, Sloth Hole, has been extensively excavated, while the other, Wayne's Sink, is well-known to local collectors. These analyses will be used to reconstruct natural and cultural site formation processes in order to discuss potential Paleoindian behavior during the terminal Pleistocene.

Hallmann, Nadine [205] *see Burchell, Meghan*

Halperin, Christina (Princeton University)

[93] *Maya Political Economies: Creative Improvisations and Structural Reproductions*

This paper examines Maya economic practices in relation to political transformations between Classic and Postclassic periods. Emphasis is placed on incorporating multiple scales of analysis to underscore the notion that while both agency and structure are two sides of the same coin, they are not necessarily visible under the same spatial-temporal lenses. I turn, in particular, to reproductions and changes in ceramic media to explore ways in which material remains reflect broad political and economic reorganization. When tied to particular places and temporal moments, however, the continuities and shifts in pottery are more firmly tied to the ways in which past peoples creatively improvised with, reinvented, and embraced the structural constraints and practices to which they belonged.

Hambrecht, George (CUNY Graduate Center) and Frank Feeley (CUNY Graduate Center)

[202] *Historical Archaeology in Barbuda*

Barbuda in the post-Columbian period did not fit into the classic Caribbean narrative centered around sugar. It was never a sugar island, it was owned by one family and its history has a very different character than neighboring Antigua or the larger Caribbean world in the Early Modern Period. Part provision ground and part fortified Georgian hunting retreat, Barbuda has a unique heritage that is a central part of the modern Barbudan identity.

Hamilton, Laurel (Tulane University)

[156] *Sharp Force Trauma in Moche Sacrifice*

Cut mark morphology and patterning on the bones of human sacrificial victims excavated from the Moche sites of Huaca de la Luna, El Brujo and Dos Cabezas on the north coast of Peru are discussed. Analysis of the cut marks involved macroscopic and microscopic techniques such as drawings, photographs and scanning electron microscopy. Results indicate that the perimortem and postmortem treatment of the sacrificial victims included facial and genital mutilation, decapitation, defleshing and dismemberment, and likely involved metal tools. Similarities between the physical evidence and Moche iconography suggest that artistic depictions of prisoner

torture, sacrifice and mutilation reflected actual practices.

Hamilton, Marcus [22] *see Buchanan, Briggs [155]* *see Collard, Mark*

Hamilton, Nathan (University of So. Maine) and Eugene C. Winter Jr. (Robert S. Peabody Museum of Archaeology)

[196] *Roots Run Deep: An Historical Perspective on the Robert S. Peabody Museum of Archaeology*
Since its 1901 founding, the Robert S. Peabody Museum of Archaeology was at the vanguard of North American archaeological method and theory. It was involved in founding of the SAA, employed stratigraphic principles to unify regional chronologies, developed a systematic approach to excavation and a focus on environmental reconstruction, initiated the use of C14 as an absolute dating technique, and devised innovative interdisciplinary collaborations to research agricultural origins and the development of societal complexity. This important legacy is the foundation of the museum's current education and public archaeology initiatives that focus on the Phillips Academy, scholarly and modern indigenous communities

Hamilton, Nathan [196] *see Slater, Donald A.*

Hammer, Emily (Harvard University), Peter Magee (Bryn Mawr College) and Marc Händel (Bryn Mawr College)

[13] *Iron Age Fortification Systems at a Trade Nexus in Coastal Southeast Arabia*
Excavations conducted since 1994 at the Iron Age II site of Muweilah, UAE, have revealed a large Iron Age settlement surrounded by complex and unparalleled fortification systems. Over perhaps 100 years, a system of ditches, surrounding walls, indirect entrances, and ramparts was constructed, extended, and repaired to accommodate the expanding settlement. We employ a three-dimensional model of these features to discuss their form, function, and chronology. These features' role in defending Muweilah and dividing intra-site space more broadly relate to settlement intensification throughout southeast Arabia beginning around 1000 BC.

Hammerstedt, Scott (University of Oklahoma)

[6] *Testing the Effectiveness of Mill Creek Chert Hoes in Prairie Soils*

An increase in Cahokia's population after AD 1050 may have raised it to levels that the existing agricultural system could not support. A recent American Antiquity article suggests that farmers may have used Mill Creek chert hoes to convert fertile upland prairie to farmland, thereby increasing production to support this larger populace. However, prairie grasses possess a formidable root mat and are difficult to till even with metal tools, therefore the effectiveness of chert hoes is uncertain. This poster presents the results of experiments using a replica Mill Creek hoe in prairie settings in Illinois and Oklahoma.

Händel, Marc [13] *see Hammer, Emily*

Handler, Jerome [121] *see Hauser, Mark William*

Hanes, Erin (WAVE Consulting, Inc.), Phil Hanes

(WAVE Consulting, Inc.) and Colleen Delaney-Rivera, (CSU Channel Islands)

[64] *Ground Penetrating Radar at Audrey: A GPR Investigation of an Early Mississippian-era Site in the Lower Illinois River Valley*

The Audrey site is a multi-component site located on the east side of the Lower Illinois River valley. The site area related to the early Mississippian-era component (ca. AD 1050) was excavated during the 1970s and 1980s using elementary and secondary students. In April 2010 the authors revisited the site and conducted an extensive ground penetrating radar survey in an attempt to identify earlier excavations and new features. Preliminary results suggest that the GPR successfully identified portions of the initial block excavations, and possibly many additional unexcavated features extending the original site boundaries significantly.

Hanes, Phil [64] *see Hanes, Erin Saar*

Hanratty, Colleen [191] *see Guderjan, Thomas Harold*

Hansell, Patricia (Temple University)

[7] *The Evolution of Lithic Technologies during the Middle Ceramic Period, Gran Cocle, Panama*
Stone tool production techniques employed in Gran Cocle (Central Panama) during the Late Preceramic and Early Ceramic periods (ca. 7800-2200 cal years BP) were remarkably simple and stable. In contrast, techniques used during the succeeding Middle Ceramic Period (2200-1250 cal years BP) were distinguished by a series of innovations, including the removal of pointed flakes and blades from carefully prepared cores. This presentation explores the implications of this more complex lithic technology for shifts in settlement patterns, intraregional exchange, craft specialization and social complexity.

Hanson, Diane and Debbie Corbett (U.S. Fish and Wildlife Service)

[168] *Adak Island Upland Sites: Four Seasons of Archaeological Surveys in the Aleutian Islands, Alaska*
Twenty-one sites found during archaeological pedestrian surveys over four years on Adak Island more than double reported upland sites in the Aleutian archipelago. The sites have multiple cultural depressions and all but two predate Russian occupation. ADK-266 sits in a swale beside a small lake on top a 250-foot hill. One depression has multiple occupation floors and evidence of stone tool manufacturing. ADK-265 is a single cultural depression that appears to contain primarily domestic tools. These data contradict the general wisdom that archaeological sites are not upland from the shoreline in the Aleutian Islands and were not used intensively.

Hanson, Jeffery (Statistical Research, Inc) and Robert Heckman (Statistical Research, Inc)

[80] *Archaeological Condition Assessment: a tool for managing cultural resources*

SRI, in conjunction with the USACOE, has developed a tool for land managers to aid in fulfilling their statutory mission regarding the identification, evaluation, protection and preservation of cultural resources. The archaeological condition assessment tool requires observations that measure levels of risk to sites based on the weighting of a number of explicit variables, or

impacts, which can affect site integrity, and ultimately, significance. Examples from the National Historic Preservation Act Section 110 compliance surveys are presented showing how condition assessments provide efficient baseline and longitudinal data that assist decision makers in assessing and treating archaeological sites

Hanson, Thomas (University of Texas at San Antonio), Michaela Grillo (The Center for Archaeological Research, UTSA) and Sonia Alconini (University of Texas at San Antonio)

[106] *Assessing the Nature and Function of the Inka Imperial Road in the Eastern Bolivian Andes*

In this poster, we will examine the nature and function of the Inka road system in the eastern flanks of the Bolivian Andes. Specifically, the study region is Charazani-Camata, located in the confines of the Inka Empire. This region, inhabited by the Kallawayas, was central in facilitating the interaction of peoples and resources between the highlands and tropical lowlands. In this poster, the results of a pedestrian survey along a segment of the pre-Columbian road will be presented, in order to assess its function, changes over time, and kinds of shifts promoted by the empire.

Harbach, Dennis [193] see Gencay Ustun, Ozge

Hard, Robert (Univ of Texas at San Antonio), Arthur MacWilliams (University of Calgary), John Roney (Colinas Cultural Resource Consulting), Jacob Freeman (Arizona State University) and Karen Adams (Crow Canyon Archaeological Center)

[199] *The Absence of Aggregated Populations in Central and Southern Chihuahua*

The absence of midlevel societies in the western portion of central and southern Chihuahua has long been known yet given little consideration. Recent work in the region between the Chalchihuites and Casas Grandes cultures confirms the general absence of prehistoric aggregated settlements and intensive agricultural adaptations. Despite being situated between Mesoamerican and Southwestern intensive agriculturalists, and the presence of well watered river valleys, 400-800 mm of rainfall, and long frost-free seasons, the region only supported mobile, mixed hunting and gathering and farming adaptations. The ecology of this surprising pattern may have implications for understanding agricultural adaptations more widely.

Hard, Robert [244] see MacWilliams, Arthur C.

Hardesty, Donald and Eugene Hattori

[18] *The Evolution of Historical Archaeology in the American West*

This paper explores the past, present, and future of the archaeology of the Modern World in the American West. It considers historical issues in method and theory, environmental change and landscapes of the modern world, the archaeology of industry and industrial life support systems, class and ethnicity, sex/gender systems, the archaeology of emigration and colonization, the archaeology of contact, public archaeology, urban archaeology, world systems, and historic preservation.

Hardy, Thomas (University of Pennsylvania)

[269] *Transforming Natural Landscape into Sacred Place: The Huacas of Inca Cuzco*

Many of the hundreds of sacred shrines (huacas) around Cuzco were organized into a system of ceque lines, through which the Inca inscribed meaning onto the landscape and physical space surrounding the ancient capital. Much of our current knowledge of how these huacas were organized has stemmed from textual evidence, but less has been done through archaeological survey and especially excavation. This paper seeks to explore processes by which the Inca physically and culturally transformed these huacas into sacred, cultural "place," particularly through alterations in the landscape. New evidence is discussed from excavations conducted on huacas around Cuzco.

[269] *First Chair*

Hare, Lizzy (University of Florida)

[212] *A Holistic Approach to Environmental Archaeology at the Classic Maya site of Motul de San Jose, Guatemala*

In this paper, I bring together zooarchaeological and paleobotanical datasets from the Classic Maya site of Motul de San Jose, Guatemala. By analyzing multiple lines of environmental data, we are better able to determine which types of proxy data are better suited for use by archaeologists in this area. Additionally, the use of multiple types of data should provide a more complete understanding of the ecological and economic processes of the site than either zooarchaeological or paleobotanical analyses alone.

Hargrave, Michael (ERDC CERL), Eileen Ernenwein (Center for Advanced Spatial Technologies, University of Arkansas, Fayetteville), George Avery (Stephen F. Austin State University), H. Pete Gregory (Northwestern State University of Louisiana) and Jeff Girard (Northwestern State University of Louisiana)

[64] *Demonstrating an integrated multi-sensor geophysical approach at Presidio Los Adaes, Louisiana*
A 5-year project has demonstrated an integrated, multi-sensor geophysical approach for investigating archaeological sites. A new software (ArchaeoFusion) was developed to reduce the technical expertise and labor requirements that previously restricted use of the approach. A core group of geophysical practitioners evaluated ArchaeoFusion's capabilities relative to alternative software. Presidio Los Adaes, an 18th century Spanish fort and mission in west-central Louisiana served as the demonstration site. Large site areas were surveyed using gradiometry, magnetic susceptibility, conductivity, resistance, and GPR during the 2009 NPS class in remote sensing. Interpretations of selected anomalies were evaluated by small scaled excavations in May 2010.

Hargrave, Michael [193] see Lundin, Richard J. [162] see Baxter, Carey L.

Harkey, Anna (University of California - Berkeley)
[250] *Discussant*

Harman, Jon (DStretch)

[158] *Using DStretch to investigate paintings in Cueva San Borjitas, BCS Mexico*

Cueva San Borjitas is located near Mulege in Baja California Sur. On its magnificent ceiling are over 80 polychrome painted anthropomorphs. The figures represent several different styles. Figure overlap can give clues to the style sequence. The figures are generally well preserved, but nevertheless pigments have faded, some colors more than others. I will use DStretch, an image enhancement program used by rock art researchers worldwide, to demonstrate the existence of figures and details of figures not documented by previous researchers. These details give new insights into stylistic conventions and concerns of the Great Mural painters.

Harrington, Lucy [158] see *Dodd, Lynn S.*

Harris, Kathryn (Washington State University) and Philip Fisher (Washington State University)

[257] *Efficiency of hafted bifaces as saws*

This study examines the efficiency of hafted bifaces as saws. While previous research indicates that hafted bifaces were used as multipurpose tools, little is known about the actual application of a hafted biface as a saw. Results of this experiment suggest: hafted bifaces do not quickly lose sawing efficiency over several uses and resharpenings, maximum raw material efficiency varies depending on the length of time the biface is used, and variability in hafting method and shape of the biface may influence sawing efficiency. While preliminary, this study is a useful springboard for understanding the relationship between tool design and function.

Harris, Kathryn [257] see *Fisher, Philip R.*

Harrison, Ainslie [193] see *Beaubien, Harriet F.*

Harrison-Buck, Eleanor (University of New Hampshire)

[191] *The Fall of the Classic Maya Kings: Defaced Monuments as Acts of Violence*

David Stuart (1996) argued that monuments with images of Maya kings were not just elite portraits, but viewed as extensions of the royal self. As animate persons, these "kings of stone" were active agents and their defacement is interpreted as evidence of violent overthrow. I examine monument defacement associated with the destruction and abandonment of elite residences at the end of the Classic period, often interpreted as the result of long-term warfare among elites. I cross-examine this interpretation and suggest shifts in regional power brought changes in warfare practice and contributed to the downfall of Classic Maya aristocracy.

Harrod, Ryan (UNLV) and Debra Martin (University of Nevada, Las Vegas)

[237] *Taphonomy After the Fact: Violence, Sex and Ritual in Room 33 at Chaco*

Chaco Canyon's Room 33, discovered by George Pepper in 1896, is recognized for its rich taphonomic context that reveals great detail about ritualized behavior (e.g., perimortem violence, exotic and extensive grave goods and social status). One male burial shows evidence of extensive perimortem fractures on the cranium suggesting a violent death. Researchers such as Akins, Schelberg and Palkovich provided partial analyses of the skeletal material in the 1980s, however this reanalysis of the remains considers the burials in relation

to the grave goods, archaeological records, and historical documents to provide a better understanding of this elaborate and unique mortuary room.

[237] *First Chair*

Harrold, Francis (Univ of Nebraska at Kearney)

[218] *Attempting Synthesis in the Late Bordesian Era: The Example of the Chatelperronian*

In the synthetic study of an industrial tradition and/or geographic region, the author gathers data from many excavations and analyses to discern and explain patterning in the archaeological record. The worker must sort out different kinds of evidence, recovered at different times by different investigators and methods, differentially available for study, and in varying conditions of curation. Using as an example my 1978 study of the Chatelperronian, I discuss the difficulties, shortcomings, and possibilities of such an approach.

Harrower, Michael (Johns Hopkins University)

[13] *Geo-Economics of Water across Ancient Southern Arabia*

Water and irrigation shaped ancient geographies and economies across Southern Arabia. Through Geographic Information Systems (GIS) based modeling of hydrology, this paper considers the spatial distribution of tombs, settlements and societies with respect to water resources. In particular, differential patterning and configurations of ancient Southwest and Southeast Arabian societies are highlighted.

Hart, Isaac (University of Utah)

[91] *A 4,000 year Pollen Record from Range Creek Canyon, Utah*

I will present a 4,000 year pollen record from a bog core taken from upper Range Creek canyon, Utah. The core is part of a larger project involving the analysis of several pollen samples and woodrat middens taken in the canyon in an effort to reconstruct biotic communities before during and after the florescence of Fremont occupation at roughly 1,000 A.D. Results from this kind of research are key to understanding the ecological factors constraining human activity in Range Creek and have implications for the forager-agriculturalist transition in general.

Hart, John (New York State Museum) and William Engelbrecht (Buffalo State College)

[55] *Northern Iroquoian Ethnic Evolution: A Social Network Analysis*

Social relationships are integral to the human experience. Ethnicity is one kind of social relationship that archaeologists explore. The evolution of the northern Iroquoian ethnic landscape has been of longstanding interest to archaeologist working in that area. Since MacNeish's (1952) pottery typology study, the predominant model for this evolution has been cladistic. An alternative model is rhizotic. Collar decoration served as a means of signaling attributes of the potter and pottery users that mirrored other, more visible signals. We use Social Network Analysis to determine whether pottery collar decoration data best fits one or the other of these models.

Hart, John [19] see *Raviele, Maria E.*

Hastorf, Christine (University of California-Berkeley)
[227] *Discussant* [250] *Second Organizer*

Hastorf, Christine [35] see *Wu, Chia-Chin*

Hattori, Eugene [18] see *Hardesty, Donald L.*

Hauser, Mark (Northwestern University) and Jerome Handler (Virginia Institute for the Humanities)

[121] *Archaeological implications for the comparison of three cottage industries: Ethnographic and documentary observations about the introduction of the Monkey and Coal Pot.*

Today, in a handful of Caribbean islands, persons of African descent continue to manufacture earthenware pottery. This paper compares ethnographic and historical data from Antigua, Jamaica, St Lucia and Barbados to document changes in pottery manufacture from the early nineteenth century to recent decades. The paper focuses on two distinctive forms, the so-called monkey jar and coal pot which have a wide distribution in the Anglophone and Francophone Caribbean. While the exact temporal and geographical origin of these forms are difficult to pinpoint, we argue they reflect broader trends in the physical mobility of islanders.

Hawks, John (University of Wisconsin, Madison)

[17] *Genetic Algorithm Simulations of Stone Tool Manufacture and Cultural Transmission*

Paleolithic tools are cultural products, propagated by information transfer among individuals, explaining some spatiotemporal patterns of artifact manufacture. I developed a "computer knapping" model to estimate the Kolmogorov complexity of Paleolithic intermediate and final products. A genetic algorithm is progressively tuned to replication of simulated Paleolithic objects. Altering the fracture dynamics and cobble size heterogeneity increases the complexity of reduction sequences necessary to reproduce types. These elements of complexity mimic some steps that facilitate observation and replication for novice algorithmic "learners". Similar strategies of core reduction may address the complementary problems of heterogeneity and information transfer.

Hawks, John [108] see *Kissel, Marc*

Haws, Jonathan (University of Louisville), Bryan Hockett (US BLM), Nuno Bicho (Universidade do Algarve) and Caroline Funk

[4] *Late Pleistocene Environmental Change and Human Occupation of Lapa do Picareiro (Portugal)*

Lapa do Picareiro has provided an intact stratigraphic record between 8,000-35,000 cal BP with undated deposits below. This provides a unique opportunity to recover key data to understand human settlement patterns, technology, paleodiet within a paleoecological context. The cave has numerous cultural and non-cultural layers that contain faunal, floral, lithic and sedimentary information needed to test models for the process of modern human colonization of Portugal and Southern Iberia in general. Here we present results of the 2008-2010 field seasons.

Hayashida, Frances (University of New Mexico), Neil Duncan (University of Missouri), David Goldstein

(University of South Carolina) and Luis Huamán (Universidad Peruana Cayetano Heredia)

[93] *Agriculture, Plant Use, and Political Change on the Late Prehispanic North Coast of Peru*

The Proyecto Ynalche investigates late prehispanic agriculture on the Pampa de Chaparrí on Peru's north coast. The pampa was first cultivated during Sicán rule in ca. AD 900, when agriculture was largely managed from the bottom up by farming communities. Conquest by first the Chimú and later the Inka resulted in state control of agriculture. Recent fieldwork examined how this transformation affected day-to-day life through excavations of Sicán and Chimú/Inka domestic contexts. Plant remains (macrobotanical, pollen, phytoliths) were collected and analyzed to investigate changes in economy and landscape. In this paper, the results of these analyses are reported.

Hayden, Brian (Simon Fraser University), Suzanne Villeneuve (Simon Fraser University) and Rolf Mathews (Simon Fraser University)

[176] *New Interdisciplinary Investigations into the Emergence and Collapse of Keatley Creek*

New research directions at Keatley Creek focus on debates over the timing of, and conditions surrounding, the emergence and collapse of large pithouse villages on the British Columbian Plateau. Interdisciplinary research has been developed which integrates geoarchaeological, botanical, faunal and geochronological evidence from a large sample of housepit rim middens, representing the occupation history of the village site. Digital methods of recording assist in the correlation of data and interpretation of complex rim stratigraphy. This poster outlines the key archaeological and paleoecological issues in the debate and presents results from the initial season of new excavations.

[176] *Second Organizer*

Hayden, Brian [176] see *Villeneuve, Suzanne [176]* see *Endo, Naoko [176]* see *Leech, Rhonda [176]* see *Richards, Michael P.*

Hayes, Daniel R. [80] see *Monaghan, George William*

Haynes, Gary (University of Nevada-Reno)

[155] *Nearly Visible Stirrings a Thousand Years Before the Clovis Era?*

Clovis cannot be clearly defined as an archeological culture in North America, and may be better identified as an "era" when some behaviors were similar in the continent but geographic variability also can be seen. The Clovis era was coincidental with many selective and clustered megafaunal extinctions. Clovis-era shocks that led to the extinctions may have been preceded by pre-Clovis foreshocks, perhaps a thousand year-long span of climatic shifts and low-level human hunting. The possible evidence for such a nearly-invisible human presence in North America is sometimes fishy but sometimes respectable, although still ambiguous.

Haynes, Gary [60] see *Hutson, Jarod M. [30]* see *Krasinski, Kathryn [4]* see *Wriston, Teresa A.*

Hays-Gilpin, Kelley (Northern Arizona Univ), Laurie Webster and Linda Cordell

[18] *Basketmaker Roots of Chaco Culture: In Praise of*

Collections Research

Museum collections and archives are central to Don Fowler's research. Insuring their continued preservation is a hallmark of his professional career. Don, with Ray Thompson, saved Chaco Canyon for New Mexico. In tribute, we examine Chaco origins by revisiting pottery and textiles long hidden in storerooms. The Chaco Digital Initiative used archives to demonstrate that ritual deposits in Pueblo Bonito reflect 300 years of generational connections to the past. Our collections research shows that Chaco ritual sodalities used Basketmaker-style sandals, burden baskets, and agricultural implements as ritual paraphernalia that connected many generations of Chaco people to ancestors in the Chuska Mountains.

Hayward, Michele (Panamerican Consultants), Frank Schieppati (Panamerican Consultants) and Michael Cinquino (Panamerican Consultants)

[60] *[Rock Art and Dating in Puerto Rico: An Examination]*

It has been some 17 years since Peter Roe first proposed a relative dating sequence for Puerto Rican rock art based on the seriation of anthropomorphic images from three locations. The three-fold framework has largely gone untested. Images from several well-documented rock art sites in the last few years have added significantly to an available comparative or testable data base. We select these and other location figures to examine the utility of Roe's sequence for ordering the island's rock art development.

Hazell, Sarah (McGill University)

[159] *Preliminary Analysis of Thule Occupation at Resolute Bay, Cornwallis Island, Nunavut.*

Under the IPY initiative between 2007 and 2009, an intensive program of field research was implemented to better understand the nature and timing of Thule occupation at Resolute Bay given its standing importance and in view of its connections to the West and recent revisions of the dates surrounding their expansion into Canada. Preliminary analysis of data from both Henry B. Collins' work and that produced under the IPY suggest in fact that a number of occupations occurred at Resolute. This paper will explore the temporal associations of the occupations and how these relate to Thule expansion.

Headrick, Annabeth (University of Denver)

[98] *The God's a Stiff: Visual Cues in Teotihuacan Art*

This paper will take a stylistic tack to explore the function of iconic and narrative forms of representation in the art of Teotihuacan. Whether the medium was stone sculpture, ceramic figurines or frescoed murals, artists consistently reserved static representational forms for the supernatural while applying freer narrative scenes to human events. Yet, in the case of high status individuals and state sanctioned entities, human representations were allowed to adopt stylistic characteristics of the divine. The result was a visual system that clearly delineated three distinct categories and carefully framed social behaviors and status.

Healy, Paul [75] *see Cheong, Kong F.*

Heath, Barbara [121] *see Neiman, Fraser D. [121]* *see Ahlman, Todd*

Hecht, Kyle [77] *see Riffe, Jed*

Heckman, Robert (Statistical Research, Inc.) and Anna Neuzil (EcoPlan Associates, Inc)

[264] *Trends, Styles, and Types: Prehistoric Ceramics In South East Arizona.*

In southeastern Arizona, painted ceramics are characterized by broad stylistic traditions that crosscut geographic regions and traditionally defined culture areas, and defy classification in traditional type and ware categories. Researchers studying ceramics in this area tend to become narrowly focused, attempting to understand how specific ceramic traditions relate to culture areas. Instead, to be fruitful and yield meaningful results, future research on these southern ceramics should focus on stylistic trends as a means to get at broad social themes such as identity, and use technological differences to examine methods of manufacture and pinpointing loci where ceramics were manufactured.

[81] *First Chair*

Heckman, Robert [80] *see Hanson, Jeffery R. [80]* *see Majewski, Teresita*

Hector, Susan (San Diego Gas & Electric Company)

[230] *Evidence for Intensification and Diversification of Activities during the Contact Period in McCain Valley, San Diego County, California*

The contact period in San Diego County (1769-1870) was a time of movement and change for native people. Many relocated away from towns and ranches to avoid conflicts and re-establish traditional lifestyles and settlements. In some cases, areas that had been marginally or seasonally occupied or used for the exploitation of specific resources became permanent camps and villages. This study examines McCain Valley, and site CA-SDI-4010 in particular, to evaluate evidence for an intensified, more diverse, higher-density settlement pattern during the contact period.

Hedgepeth, Jessica (University of Colorado, Boulder)

[5] *A typological and iconographic analysis of Early Postclassic pottery from Río Viejo, Oaxaca, Mexico*

This poster introduces a newly created typology of Early Postclassic (A.D. 800-1100) Yugué phase ceramics from Río Viejo in coastal Oaxaca, Mexico. The ceramics derive from non-elite households which occupied the site following a major administrative collapse (c.a. A.D. 800). I give an overview of the main ceramic types classified according to three technological modes—finewares, greywares, and coarse brownwares—and discuss the social practices associated with each mode. The poster concludes by presenting an iconographic interpretation of the Yugué phase ceramics.

Hedges, Robert [255] *see Whittle, Alasdair*

Hedquist, Saul (University of Arizona), Alyson Thibodeau (University of Arizona), E. Charles Adams (University of Arizona) and David Killick (University of Arizona)

[136] *Sourcing Homol'ovi I Turquoise Through Lead and Strontium Isotopic Analyses*

High-precision measurements of lead and strontium

isotopes have been shown to discriminate between turquoise sources in the American Southwest. This study employs a recently developed geochemical and geological framework of paired isotopic measurements to determine the source(s) of turquoise recovered from Homol'ovi I in an effort to better understand processes of turquoise procurement and exchange during late prehistory. Selected turquoise samples are analyzed to investigate 1) if one or multiple geologic sources are represented at Homol'ovi I, 2) if intrasite dispersal patterns are evident, and 3) the associated implications regarding regional patterns of interaction and exchange in the American Southwest.

Heffner, Sarah (University of Nevada, Reno)

[195] *Healthcare Practices of the Chinese in Nineteenth- and Twentieth-Century Nevada Mining Communities*

This paper will discuss healthcare practices among the Chinese in Nevada mining communities during the late-nineteenth and early-twentieth centuries. In addition to looking at the types of Chinese medicinal artifacts found at sites in Nevada, this paper will address the presence of Euro-American patent medicines on Chinese sites. The Chinese voluntarily adopted aspects of Euro-American culture such as dress and religion and Euro-American artifacts have been found on Chinese sites. Studies indicate Euro-American adoption of Chinese medicine, but little research has been done to address the use of Euro-American patent medicines by the Chinese.

Hegberg, Erin (University of New Mexico) and Wendy Sutton (National Forest Service)

[211] *Risque Ranchers and Bored Shepherds: Possibilities for dendroglyph research*

Dendroglyphs are marvelous examples of a single event—something rare in archaeology. They also frequently provide us with convenient, precision dating carved right into the tree. A large sample of carved aspen can provide archaeologists and historians with information regarding land-use, historic grazing, literacy, ethnic identity, climate change from year to year, and more. This poster presents some potential lines of dendroglyph research using GIS. This research is based on 19 sites, representing over 300 trees, documented in the 2010 summer field season in a small area around Buckles Lake in the San Juan National Forest, Pagosa Ranger District.

Hegmon, Michelle (Arizona State University) and Paul Minnis (University of Oklahoma)

[53] *The Local Context of Long Distance Exchange: Mimbres and Casas Grandes*

Great research, which provides far-ranging conclusions, advances archaeology in many ways, including by providing ideas and assumptions worthy of future examination. We examine Di Peso's ideas and interpretations of exotica at Casas Grandes, Chihuahua. Were rooms full of exotica actually stores for exchange, as Di Peso argued, or are the exotica better interpreted as offerings? The distinction between exchange goods and offerings is developed through comparative analyses of Classic Mimbres material from a slightly earlier occupation of an adjacent area. The distinction is also supported by ethnographic literature and site formation process research.

Heidenreich, Stephan (University of Cologne)

[231] *Late Pleistocene Lithic Tool Assemblages in Eastern Beringia: Cultural-Chronological Disparity vs. Functional Variability*

Since the definition of various lithic industries in Eastern Beringia the actual sense behind this separation has not been clarified. Some researchers are convinced of cultural and/or chronological differences, others have suggested seasonal or functional variation. Evaluation of various "complexes" of Central and Northern Alaska and a review of their application reveal a mismatch. The archaeological record should be addressed with a trans-regional approach independent of cultural designations. Chronological control can only be gained through radiocarbon dating. Preliminary results of analyzed tool assemblages indicate functional variability of hunter-gatherer campsites. This requires a new approach, recognizing settlement pattern diversity instead of a premature interpretation of cultural differences.

Heidner, William [83] see Slaughter, Mark C.

Heilen, Michael [80] see Hall, John D.

Hein, Anke (UCLA)

[23] *Prehistoric Cultures of the Liangshan District - Disentangling Identities and Geographic Preconditions in a Multiregional Interaction Sphere*

This paper gives an overview on archaeological material from the Anning River valley in southwest Sichuan. The area is characterized by a multitude of different cultures and ethnic groups that have intermingled here since the late Neolithic. Furthermore, it is crisscrossed by many rivers that dissect it into ecologically very different sub-regions but also connect it to other areas far north and south. Therefore, it is especially well-suited for research on identity groups and their relation with and expression in their local environment. Moreover, the material provides an opportunity to reconsider general questions of cultural contact and ethnic identity.

[23] *First Chair [23] Second Organizer*

Heindel, Theresa

[8] *Seeking durable indicators of manioc processing: scrapers.*

During the 2009 excavations conducted near Ceren, a dacite scraper was found in a midden located within Operation P. Analyses indicated that the working edge of the scraper showed substantial and distinctive usewear, including abrasions consistent with the working of material covered in dirt or grit. The present study attempts to replicate the abrasion seen on the Operation P scraper by using a replicated scraper in conjunction with Ilopango volcanic ash to remove the cortex from manioc. Results should provide information on this unique type of usewear, and add to our understanding of cultivated manioc processing at Ceren.

Heller, Eric (University of California Riverside)

[170] *When it Breathes, It Pours: Foundations and Functions of the Mesoamerican Reptilian Earth*

Zoomorphic representations of the earth as a reptilian creature, whose breath emanates rain-bringing winds from cave-like maws, are common to many Mesoamerican cultures. An analysis of the reptilian earth

complex reveals that cosmological beliefs and empirical environmental phenomena were not discrete subjects for ancient peoples of Mesoamerica. Rather, empirical observations dialectically informed cosmological and metaphysical knowledge. An analysis of geological and meteorological phenomena combined with interpretations of iconographic materials suggests that, for ancient Mesoamericans, environmental observations formed a base constituent of cosmological models. Furthermore, some cosmological models may have served as functional diagrammatic representations of critical environmental processes.

[170] *First Chair*

Helmke, Christophe [56] *see* **Freiwald, Carolyn R. [56]**
see **Wrobel, Gabriel D.**

Hemmings, C. Andrew (Mercyhurst College) and Thomas Loebel (University of Illinois, Chicago)

[120] *Clovis writ small: The Mineer site (Vernon) fluted point assemblage of east central Arizona reexamined*
Mineer was first investigated more than 40 years ago and included surface collection of a large quantity of fluted point material as well as documentation of numerous similar collections held by locals. The material housed at the Field Museum has been variously described as Folsom or Folsom-like based strictly on size rather than technical reduction processes. This assemblage contains numerous diagnostic Clovis bifaces, performs, and fluted points, as well as two blade core tablet flakes. This is a Clovis assemblage produced in miniature due to the small stone package sizes available in high quality but tough stream tumbled nodules.

Hemmings, C. Andrew [265] *see* **Adovasio, James M.**

Henderson, A. Gwynn (Kentucky Archaeological Survey) [113] *Discussant*

Henley, Michelle [82] *see* **Everson, Gloria E.**

Henrickson, Celeste (UC Berkeley) and Shane Macfarlan (Washington State University)

[179] *Analysis of Archaeological Materials from Cueva Santa Rita, Baja California Sur, Mexico*
In this poster we present preliminary results from studies in the southern Sierra de La Giganta region of Baja California Sur, Mexico. Data from excavations at Cueva Santa Rita and recent regional surveys in the La Giganta region reveal an interesting diversity of artifact materials and sites. The cave's location adjacent to a series of springs and an ephemeral lake basin may have attracted many different types of use by ancient peoples. The presented research works to expand our knowledge of peoples who lived in the southern Baja California Sur, Mexico.

Henry, Amanda (The George Washington University) [111] *Formation and taphonomic processes affecting starch grains*

As complex organic molecules, starch grains are subject to a variety of processes that affect their architecture and visible properties, at all stages of their 'life history', including during the life of the plant that formed them, during their removal from the plant (whether natural or

human-mediated), and within the archaeological contexts in which they may be preserved. A good understanding of the current literature that describes these processes and their affect on starch grains is vital for accurately interpreting the starch grain record. This paper discusses these processes, and outlines the areas where more research is needed.

Hepp, Guy (University of Colorado)

[157] *The Material Culture of Early Sedentism in Coastal Oaxaca: Probable Early Formative Ceramics from La Consentida*

This paper discusses a collection of probable Early Formative ceramic vessel fragments from the lower Río Verde Valley of Oaxaca, Mexico. This study sheds light on a diverse assemblage that included small grater bowls, large-diameter conical vessels, some tecomates, and figurines. Despite erosion, remnant plastic decoration allows commentary on the iconographic cannon utilized on La Consentida ceramics. This paper demonstrates differences between the La Consentida assemblage and its closest chronological neighbors in the regional sequence, and provides contextual support for the argument that La Consentida is producing the first relatively well-understood Early Formative ceramics from the western Oaxacan coast.

Herbst, George (UC Santa Barbara) and Stuart Smith (University of California, Santa Barbara)

[246] *Pre-Kerma transition at the Nile Fourth Cataract: evidence of stratified late prehistoric settlement in northern Sudan*

This paper reports the preliminary findings of investigations of a multi-component, stratified late prehistoric settlement located at the upper reaches of the Nile Fourth Cataract. UCSB 03-01 is characterized by distinct occupation sequences that show continuous habitation of the area from the late Neolithic (4300-4000 B.C.) through the Pre-Kerma and early Kerma periods (3900-2300 B.C.). AMS radiocarbon data, diagnostic pottery and domestic architecture demonstrate a clear horizontal and vertical stratigraphy. These results provide evidence of uninterrupted settlement during a crucial period of social transition at the florescence of the earliest Nubian Kingdom.

Hermes, Bernard [14] *see* **Zralka, Jaroslav**

Hermes, Taylor [169] *see* **Longacre, William A.**

Herr, Sarah (Desert Archaeology, Inc.), Michael Diehl (Desert Archaeology, Inc.) and Michael Sullivan (Tonto National Forest)

[139] *To Everything there is a Season: Western Apache Land Use in the Mogollon Rim Region, Arizona.*

Formerly an Western Apache homeland, today the Mogollon Rim region is the location of archaeological sites and remembered places. Traditional Apache lifeways are tied to plants and seasons and the forested mountains of central Arizona are filled with food, medicinal, and ceremonial resources. Ethnographically informed studies of food procurement and processing assemblages from archaeological sites relate subsistence activities to the social order and help to convey the enduring connection of Apaches to their ancestral landscape.

[139] First Chair

Herrmann, Edward (Glenn A. Black Laboratory of Archaeology)

[163] *Predicting Late Pleistocene and Early Holocene Settlement Patterns along the White River Valley in South-Central Indiana*

Although early hunter-gatherer sites are common in the White River Valley region, relatively little is known about regional Paleoindian and Early Archaic cultural and subsistence practices. This poster utilizes Geographic Information Systems (GIS) to model the spatial and temporal relationships between site locations, landscape geomorphology, and fluvial depositional environments. Ultimately, synthesis of this information can help researchers model and locate stratified sediments which may harbor cultural and paleoenvironmental data useful in deciphering hunter-gatherer settlement and subsistence practices 8,000-13,000 years ago.

Herrmann, Nicholas P. [216] *see Yerka, Stephen J.*

Hescock, Sara [87] *see Gebauer, Rachel Smith*

Hesp, Patrick [265] *see Evans, Amanda M.*

Hewitt, Barbara (University of Western Ontario), Christine D White (University of Western Ontario), Brian J Fryer (University of Windsor, Great Lakes Institute for Environmental Research) and Fred Longstaffe (University of Western Ontario)

[49] *"Chosen Ones" in the north? An isotopic investigation of a suspected Acllawasi at Túcume, Peru.* In this study we use oxygen and strontium isotope analyses to investigate the social identities of 19 females buried together at Túcume in northern Peru. These women have been hypothesized to be Aclla ("chosen ones"), master weavers and ceremonial attendants selected by the Inca and sent to regional training centres (Acllawasi). According to Spanish ethnohistoric documents these women were relocated primarily to the southern areas of the Inca Empire, and their lives were largely spent in seclusion and servitude. Although little archaeological evidence exists for the presence of this tradition in the north, Túcume may have been one such site.

Heyman, Marjie

[163] *Analyzing Social Space: Interpreting Spatial Patterning at Archaeological Sites Using Ethnoarchaeological Data*

A community's social behaviors may be inferred from its site's spatial patterning. Spatial patterning results from the repeated actions and space use of corporate members. Ethnographic data analysis of extant horticultural groups identify common spatial patterns. Occupational density influences social behaviors and information exchange. Variation is influenced by kinship and residential layout; private and communal spaces; ecological context; and degree of residential sedentism. Archaeological correlates used to interpret spatial behaviors are predicted. A model links ethnographic observation with expected archaeological surface remains. This model is used to interpret the spatial patterning at two prehistoric horticultural communities in the American Southwest.

Hicks, Pat [83] *see Slaughter, Mark C.*

Hicks, Tyler (Simon Fraser University), Matthew Sisk (Stony Brook University), Andrew Watson (Anterra Consulting), Utsav Schurmans (University of Pennsylvania) and Suzanne Villeneuve (Simon Fraser University)

[176] *GIS in the Analysis of Pithouse Village Occupation at Keatley Creek, British Columbia Plateau*

GIS is a useful tool for processing large volumes of excavation data to examine the spatial dimensions of human behavior across different periods of occupation. New research at Keatley Creek examines the timing and conditions surrounding the emergence of these complex communities and integrates data from household activities to examine changes in socioeconomy. Here GIS applications provide a well-structured descriptive and analytical tool for excavation and analysis and allow us to integrate new information with over 20 years of excavations data. Results illustrating how these tools assist in identifying spatial patterns, housepit formation processes and understanding site-wide occupation are provided.

Hidjrati, Nazim (NOSU Inst of History & Archaeology) and Larry Kimball (Appalachian State University)

[108] *The Function of Flint Mousterian Tools from Myshtulagty Lagat (Weasel Cave), Russia*

Results of a high-power microwear analysis of Mousterian artifacts from Myshtulagty Lagat, Russia are presented. This sample represents 100% of all flint tools and debitage from Isotope Stage 5e through Final Mousterian (~28,000 B.P.) contexts. Significantly, the preservation of use-traces and hafting-traces is exceptional. We find that the tools were used for wood-working, butchery, and scraping hides, in rank order; and that hafting is very common for formal Mousterian tools, especially small flakes. There is not a one-to-one correlation between general tool morphology and tool function. These data assist our understanding of Mousterian technology from the tool-user's perspective.

Hidjrati, Nazim [108] *see Koetje, Todd A. [59]* *see Kimball, Larry R.*

Hiebert, Fred (National Geographic Society)

[247] *Cultural heritage protection in Afghanistan: Update on archaeology*

The cultural heritage of Afghanistan continues to be in peril due to poor security, lack of infrastructure, rampant looting and lack of funds for cultural heritage management. Despite this, positive developments continue to be made in this challenging environment. This includes international exhibition, repair of museum and training of museum and conservation staff, limited excavations at threatened sites, and cooperation with U.S. Army in training forces to recognize and respect cultural resources within the context of rules of engagement. Future steps rest on cultivation of relationships with multiple stakeholders within and beyond Afghanistan.

[247] First Chair

Hiebert, Fred [5] *see Casson, Aksel*

Higelin, Ricardo (ENAH)

[95] *Estudio bioantropológico de Atzompa a partir de las muestras óseas recuperadas en Tumbas.* Durante el año 2007 – 2009 el Proyecto Arqueológico del Conjunto Monumental de Atzompa, Oaxaca; realizó trabajos de excavación de enterramientos humanos, así como el análisis de los materiales esqueléticos en laboratorio. Cabe mencionar que varios restos esqueléticos obtenidos en entierros directos se encontraron en mal estado de conservación mostrando poca información sobre la serie osteológica. Por tal motivo, esta presentación tiene como objetivo principal, conocer y exponer las características bioantropológicas de los restos esqueléticos humanos recuperados únicamente en tumbas; rescatando información sobre las características físicas de la población prehispánica de Atzompa.

**Higgins, Howard (TRC Environmental Corp.),
Christopher Watkins (Arizona State University)
and Glen Rice (Rio Salado Archaeology LLC)**

[158] *Petroglyphs and Pilgrimages; A Perspective from the Gillespie Rock Art Complex*
Archaeological work has documented both Hohokam and Patayan residence at the Gillespie Dam site near Gila Bend, Arizona (Watkins and Rice 2009). Across the Gila River from the village is the 4 km long Gillespie Dam Rock Art Complex containing many oversized and very visible monumental glyphs. The petroglyphs include a combination of the Hohokam Gila stylistic tradition, and the Patayan Sears Point stylistic tradition. This public display includes examples of large elements pecked over each other. It is argued that the rock art served as public statements of life in a plural community where separate group identities were maintained.

**Hildebrandt, Elisabeth (Stony Brook University) and
Timothy Schilling (Washington University In St. Louis)**

[246] *Social and Economic Significance of Early Storage Pits on Sai Island, Sudan*
Early storage pits in the Nile Valley and nearby areas (Fayum) are associated with the spread of plant food production. Some scholars suggest these innovations initially aimed to preserve seasonal surpluses and ameliorate unpredictable year-to-year resource fluctuations. Through time, storage pits and seasonal surpluses may have been co-opted by incipient elites as a means of aggrandizement. On Sai Island, a storage facility had >100 subterranean pits; some, sealed since ~4150 bp, contained the area's earliest known domestic plants. Archaeological data suggest these pits were created and maintained by small social units in the context of household-scale economies.

[246] *First Chair*

Hildebrandt, Tod (Utah State University)

[179] *High Elevation Adaptations in the Late Prehistoric Great Basin*
A recent survey on the East side of the Toquima Range in central Nevada encountered a series of 10 rock rings that represent a late archaic occupation of Pine Creek. The Pine creek drainage serves as a least cost path to Alta Toquima village. Preliminary survey and subsurface testing hints that this site may represent an archaic subsistence strategy that predates the later high

elevation adaptations associated with the occupation of Alta Toquima Village. This site provides a modest, yet valuable contribution to our understanding of high elevation habitation in the Great Basin.

[177] *see Jones, Emily Lena*

Hildebrandt, William (Far Western Anthropological Research Group) and Kelly McGuire (Far Western Anthropological Research Group, Inc.)

[11] *A Land of Prestige*

During much of the Early and Middle Holocene, people lived in small residentially mobile groups. Larger more permanent settlements developed later and were accompanied by increased gender differentiated work organization, storage, inter-regional exchange, and logistical access to distant patches. The costs of obtaining commodities through exchange and logistical transport were often higher than for resources closer to home, indicating that the non-local items represented alternative, non-energetic currencies used to increase prestige and fitness. By focusing on these relationships, and the behavioral ecological theory that explains them, we can improve our understanding of the rich character of California's prehistory.

[256] *Discussant*

Hill, Brett (Hendrix College), Patrick Lyons (Arizona State Museum), Jeffery Clark (Center for Desert Archaeology) and William Doelle (Center for Desert Archaeology)

[52] *Coalescence, Core Decay and Hohokam Collapse*
The collapse of Classic period Hohokam society of southern Arizona offers significant lessons for studies of environmental degradation and its social consequences. We propose a model of Core Decay along the lower Salt River Valley in which multiple environmental and social factors operated in a systematic manner to amplify difficulties. Population coalescence and irrigation constraints led to environmental degradation and declining productivity in core areas near canal intake locations. Consequent production effort tended to more distant locations where conflict with recent immigrants ensued. Ultimately, the costs of irrigation system maintenance and social tension contributed to collapse and depopulation.

Hill, Brett [52] *see Lyons, Patrick D.*

Hill, Christopher [218] *see Blackwell, Bonnie A. B.*

Hill, Matthew E. [231] *see Knell, Edward J.*

Hill, Rebecca [204] *see Lincoln-Babb, Lorrie [85]* *see Stockton, Trent*

Hills, Kendall

[40] *From Space to Place: A Developmental Analysis of the Epicentral Court Complex at the Ancient Maya Center of Minanha, Belize.*

Using a spatio-temporal artifact frequency distribution analysis, this paper explores the long-term occupation of the physical "space" that would, during the Late Classic period, emerge as the seat of power for the small city-state of Minanha. Emphasis is placed on understanding the diverse economic, social, political, and ritual activities that were carried out in this "place" before, during, and

after the existence of the Minanha royal court. Ultimately, the general trends that emerge from this analysis inform us as to how this segment of the greater Minanha community changed over time. Some of the key spatio-temporal trends are highlighted.

Hilton, Michael (Black Hills National Forest)

[92] *Lime Plaster Floors—Or Not? A Call for Caution Regarding Field Interpretations*

Thin, light-colored stratigraphic units encountered in archaeological contexts are frequently assumed to represent the sedimentological signatures of lime-plaster floor sequences. While such interpretations are often accurate, caution must be exercised. This study utilizes thin-section petrography to examine a series of undisturbed sediment samples from the southern coast of Israel. Microscopic analysis demonstrates that the physical properties that characterize lime plaster are sometimes absent. A significant number of the light-colored strata are composed exclusively of dense accumulations of translucent opaline phytoliths which produce a hue and color value nearly identical to that of plaster floors. This analysis has significant implications for interpretations proffered.

Hirshman, Amy (West Virginia University) and Christopher J. Stawski (Michigan State University)

[38] *Paddlers and porters: moving Late Postclassic Tarascan ceramics to market*

Archaeological study of Tarascan ceramics from the Lake Pátzcuaro Basin, Michoacán, Mexico, indicate localized production and market exchange. What is not known, however, is the relationship between this localized production and the trade economy within the Basin. There is conceivably a direct relationship between trade and travel and the logistics behind the production, movement and use of ceramics. Drawing from archaeology and ethnography, this paper models transport costs within the larger context of the ceramic economy in the Basin during the Late Postclassic Tarascan state.

[38] *First Chair*

Hirst, K. Kris (Archaeology at About.com) [214] *First Chair*

Hirth, Kenneth (Penn State University) [116] *Discussant*

Hockett, Bryan [4] *see Haws, Jonathan A.*

Hodges, Charles [231] *see Kopperl, Robert*

Hodgetts, Lisa (University of Western Ontario), Don Butler (University of Calgary), Peter Dawson (University of Calgary) and Edward Eastaugh (University of Western Ontario)

[159] *Seeing the unseen: geophysical and geochemical investigations of activity areas in the southern Keewatin District, Nunavut*

Archaeological investigations of Arctic sites have traditionally employed surface mapping, test-pitting and excavation in order to understand the relationships between archaeological features and human activities. We present a case study of the use of magnetometer survey and geochemical soil analysis on a large

archaeological site west of Hudson Bay, in order to illustrate how these techniques can complement more traditional approaches to understanding northern sites. Both techniques have great potential in Inuit archaeology as they provide information about the differential use of space that cannot be accessed through other means.

Hodgetts, Lisa [159] *see Dawson, Peter C.*

Hodgins, Greg (University of Arizona), Amy Jo Vonarx (University of Arizona, School of Anthropology), Tatsuya Murakami (University of South Florida) and Arleyn Simon (Arizona State University, Archaeological Research Institute, School of Human Evolution and Social Change)

[92] *Radiocarbon Dating Mesoamerican plasters and mortars: a comparative perspective*

Dating architecture in Prehispanic Mesoamerica presents special challenges for archaeologists. Pottery sequences may be temporally imprecise, reuse of materials is common, deposits are often disturbed, and preservation of organics is poor in moist, jungle environments. Lime mortar and plaster technologies have been used in Mesoamerica for millennia and surviving structures with samples are relatively common. Direct radiocarbon dating of mortar and plaster holds great potential but our attempts have generated few successes. Here we review radiocarbon dates and summarize lessons learned from studies of lime-based materials at Teotihuacan in Central Mexico and numerous Maya sites in Guatemala.

Hoekman-Sites, Hanneke (Florida State University)

[19] *Resource Intensification in Early Village Societies: Dairying on the Great Hungarian Plain*

I examined early dairying practices on the Great Hungarian Plain during the Neolithic and Copper Age (6000-3000 cal BC) to identify how milk product use changed through time. The results of this analysis will yield information about patterns of dairy residue distribution across individual sites and in various vessel types. The impact of this project reaches beyond the confines of residue analysis. By providing information about general trends of animal product use over time, our knowledge about the process of economic intensification in Eastern Europe will be greatly expanded. Methodological issues will also be addressed.

Hoffecker, John (INSTAAR), Owen Mason (INSTAAR), Nancy Bigelow (University of Alaska-Fairbanks) and Christyann Darwent (University of California-Davis)

[159] *One Thousand Years of Settlement at Cape Espenberg, Northwest Alaska*

Groups of former houses and associated features are spread across ten beach ridges near the tip of Cape Espenberg, representing roughly one thousand years of Inuit settlement. During the second year (2010) of a three-year interdisciplinary project, houses were partially excavated on the three of the ridges. The excavated houses are small, but yielded a wealth of artifacts and faunal remains that will be used to address questions concerning social, economic, and technological change (including the possibility of whaling) during the past millennium at Cape Espenberg.

[159] *Second Chair*

Hoffman, Laura (SWCA Environmental Consultants)

[186] *Differential Access to Resources and the Emergence of Elites: Obsidian at La Blanca*
 This paper presents the results of a comparative analysis of obsidian artifacts recovered from five household contexts at La Blanca. Although situated in the shadow of Guatemala's volcanic mountains, the denizens of La Blanca had limited access to obsidian; this presents a unique opportunity to examine differences in access to this valuable resource. The distribution of obsidian at La Blanca reflects the emerging dominance of the nascent elites as well as the resistance of non-elites to the loss of household autonomy. This paper explores this dichotomy and its effects on the development of regional complex social systems.

Hofkamp, Anthony (Portland State University) and Virginia Butler (Portland State University)

[178] "Ground truthing" the use of radiographic analysis of annular growth rings for age determination in Pacific salmon (*Oncorhynchus* sp.)

Since the 1980's, radiographic methods have been employed for age determination and species identification of Pacific salmon (*Oncorhynchus* sp.) vertebrae from Northwest Coast archaeological sites. This method involves counting incremental growth structures, which hypothetically represent one year of growth. Our study tests this approach using modern vertebrae from two species of Pacific salmon (*O. kisutch* and *O. tshawytscha*) with known ages-of-death based on tag ages. Discrepancies varied between 4 and 62 % for the species. We consider the reasons behind the high error rate and future work needed to extend the value of increment analysis to archaeological and fisheries science research.

Hofman, Courtney (University of Maryland), Jesus Maldonado (Smithsonian Conservation Biology Institute) and Torben Rick (National Museum of Natural History)

[105] *Mice and Man: Ancient DNA Analysis of Deer Mice from Daisy Cave, San Miguel Island, CA*
 California Channel Island ecosystems have been influenced by human activities for over 10,000 years. The Island deer mouse (*Peromyscus maniculatus*), one of few endemic island mammals, appears to have replaced an older and now extinct deer mouse (*P. nesodytes*) during the Holocene. *P. maniculatus* may have been unintentionally introduced by Native Americans, but questions remain about the relationship between the two species. Genetic analysis of archaeological deer mice from San Miguel Island provides data on the relationship between ancient and extant *Peromyscus*. These data demonstrate the importance of ancient DNA analysis for investigating a variety of archaeological and environmental issues.

Hofman, Courtney [105] see Jagani, Sheel A.

Hogan, Richard [158] see Gaskell, Sandra

Hogberg, Anders (Sydvensk Arkeologi AB)

[254] *Old Uppsala, Sweden: 1,500 year old Royal burial mounds and what they can reveal about heritage today*
 Old Uppsala with its three mighty burial mounds from the 6th century AD is one of Scandinavia's most renowned

heritage sites. Today Old Uppsala is managed by the Swedish National Heritage Board. In addition to information boards, there is a small museum telling the history of the site. I analyzed the thinking underlying the construction and design of the heritage site we see today. My paper discusses in what way the archaeological excavations, conservation measures, educational efforts, and improved access reflect the social and cultural meaning of the site today and what Old Uppsala can reveal about our own society

Hoggarth, Julie (University of Pittsburgh)

[34] *Commoner Resilience in the Classic to Postclassic Transition: Settlement and Households at Baking Pot, Belize*

The Terminal Classic period in the central and southern Maya Lowlands has often been characterized by depopulation and abandonment of major centers, along with the decline of elite-related paraphernalia. Although significant research has focused on the "Classic Maya Collapse", fewer studies have focused on the processes of social reorganization and regeneration in the Classic to Postclassic transition at the level of households and communities. This poster will present the results of excavations of commoner housegroups at Baking Pot, a center that was occupied into the Terminal Classic and Early Postclassic, and discuss community integration during this period of social change.

Højlund, Flemming [13] see Zambelli, Amber

Holdaway, Simon (University of Auckland), Matthew Douglass (University of Nebraska, Lincoln) and Rebecca Phillipps (University of Auckland)

[22] *Flake selection, assemblage variability and technological organization*

Two types of raw material, silcrete and quartz are abundant in western New South Wales, Australia in the form of cortical cobbles and were used by Aboriginal people to manufacture flaked artifacts. By comparing the quantity of cortex on the cobbles and in the archaeological assemblages it is possible to show that large, thin flakes were removed from the locations where they were knapped. What was removed depended on raw material form, reduction technology and anticipated artifact use. The significance of selecting flakes that were not retouched is considered in relation to assemblage variability and assessments of technological organization.

Holdaway, Simon [3] see Lin, Sam C

Holen, Kathleen (Denver Museum of Nature & Sc)

[29] *"It fits perfectly in my hand" and Other Affordances of Expedient Bone Tools*

"It fits perfectly in my hand". Archaeologists cringe when they hear those words used to describe artifacts. But neuropsychological research shows that the ability to conceptually and physically grasp a tool is hardwired in primate brains. Tool creation is based on the perception of function in form. This paper discusses a qualitative study of the behavior of archaeologists as they replicated Pleistocene bone technology. Their spontaneous identification and use of expedient tools is explained using the concept of affordance. The analysis is then expanded to suggest an approach to identification and

interpretation of expedient bone tools at Pleistocene archaeological sites.

Holen, Steven (Denver Mus of Nature & Science)
[231] *The Lamb Spring and Scott Spring Sites, Douglas County, Colorado: New evidence for late Pleistocene Human Association*

New high-precision radiocarbon ages on humanly-modified mammoth bone from the Lamb Spring Site, excavated by the Smithsonian Institution in the early 1960s and again in the early 1980s, are reported. Another nearby site, Scott Spring, was first discovered by a USGS geologist, Glenn Scott in the early 1950s. He collected mammoth, camel and horse bone from spring deposits and loess including one camel bone that may have been modified by humans. Test excavations in 2010 discovered more late Pleistocene faunal elements in loess near the spring that appear to have been modified by humans.

Holk, Gregory [5] see Bernal, Judy

Hollenbach, Kandace D. [129] see Carmody, Stephen B.

Holliday, Vance (University of Arizona)

[155] *Geoarchaeology and Paleoenvironments Of The Clovis Occupation in the Southwestern U.S. and Northwestern Mexico*

Clovis sites the SW U.S. and NW Mexico are found in a variety of settings. Kill/butchery sites are located in low-order tributaries of main streams in what were once wetland settings. Camps are in uplands in proximity to the tributaries or to paleo-lakes. Mainstreams (Rio Grande, San Pedro River) were quasi-stable just before, during, and just after the Clovis occupation. Lake levels for this time in paleo-lake basins with evidence of Clovis occupation (Estancia, San Agustin, Jornada del Muerto, Willcox) are poorly dated, but none provide evidence for high stands. Stable isotopes indicate relatively cool but warming conditions.

[120] see Sanchez Miranda, Guadalupe

Hollimon, Sandra (Santa Rosa Junior College)

[16] *Bioarchaeological Approaches to Non-Binary Genders: Case Studies from Native North America*
Recent research has begun to explicitly address the relationship between biological sex and cultural constructions of gender. Queer theory, theories of embodiment, and the body as material cultures are developments that inform this research. The biocultural interactions of sex and gender equip bioarchaeology perhaps uniquely to identify non-binary genders in the archaeological record. It has been suggested that non-binary genders have a great time depth in North America, and that the colonizing populations who migrated from northeastern Asia recognized more than two genders. I describe examples of these analyses from archaeological sites in the U.S.

[48] see Murley, Daniel F.

Hollowell, Julie ([none or "independent"]) [78]
Discussant

Holm, Steven (University of Nevada, Reno)
[208] *In Small Things Lost and Found*

This presentation is the preliminary results of the 2010 University of Nevada, Reno field school in archaeology. Excavations focused on Cornish Row, a historic neighborhood on the slopes of Mount Davidson above Virginia City, Nevada along Howard Street. No standing structures remain except house platforms built into the mountain. Domestic material recovered includes: ceramic, glass, clothing fragments, and personal items. Since interaction with the public is a vital part of archaeology, this presentation focuses on the small artifacts or things not usually seen by the public to highlight the potential of these small things to illustrate large concepts.

Holmer, Nick [63] see Rauh, Whitney D.

Holstad, Emily (Washington State University), Paul Scott (Iowa State University), William Lipe (Washington State University) and John G. Jones (Washington State University)

[46] *Basketmaker II Stone Boiling and the Enhancement of Maize Protein Availability at Cedar Mesa, Utah: An Experimental Study*

Experiments show that limestone heated to >600 C, when dropped into water, generates calcium hydroxide, or slaked lime. Results from cooking maize with heated limestone suggest this nixtamalization, or lime treatment, produces beneficial results when compared to simply boiling the maize. The levels of Tryptophan, Lysine, and Methionine are significantly higher in extracts of protease-treated maize boiled with limestone than in the control group. Physical evidence from limestone heated in the lab versus Basketmaker II archaeological limestone from a Cedar Mesa midden indicates that Basketmaker II people subjected limestone to levels of heat sufficient to produce slaked lime.

Holt, Haley (Tulane University)

[38] *Enclave or Emulation?: Identifying and Investigating Zapotec Presence in the Tula Region of Central Mexico*
The Oaxaca Barrio of Teotihuacan, a well investigated example of an archaeologically known enclave, represents not an isolated occurrence, but rather is part of a network of Zapotec-related occupations around the Basin of Mexico during the Classic Period. Several sites near Tula, Hidalgo exhibit pottery and tomb structures with apparent Zapotec influence. Recent analyses of ceramic collections from the site of El Tesoro/Presa Escondida have brought to light interesting stylistic connections between the Tula region the Valley of Oaxaca, as well as Teotihuacan. This paper presents the results of these preliminary analyses as well as future research goals.

Holtorf, Cornelius (Linnaeus University, Kalmar, Sweden)

[254] *The Archaeology of Heritage: An Introduction*
Heritage professionals preserve sites, objects, and the information they contain for the future, yet they have been reluctant to consider seriously what the future will be like. Future generations may appreciate preserved sites and objects not so much because they allow them to remember their origin in the past, but because they allow them to remember remembering the past – when they were preserved for the future. This paper introduces the session by placing heritage and preservation into a

larger historical context.

[254] *First Chair* [254] *Second Organizer*

Homburg, Jeffrey (SRI/University of Arizona), Jonathan Sandor (Iowa State University) and Paul Minnis (University of Oklahoma)

[223] *Soil quality of ancient terraced agricultural fields of Chihuahua, Mexico*

Agricultural soil quality of ancient field systems was investigated as part of an interdisciplinary study of the anthropogenic ecology of Medio period (~A.D. 1200-1450) fields near Casas Grande. We compared the soil quality of fields in high versus low population valleys and between fields thought to have been owned by chiefs. A number of statistical differences were identified, but there is no indication that agriculture reduced soil quality, so soil degradation does not explain the ultimate decline of the Casas Grande cultural system. Soil differences, however, were found between fields, likely due to geologic differences in the parent material.

Homburg, Jeffrey [199] see Sandor, Jonathan A. [151] see Douglas, Diane L.

Hood, Angela (University of Cincinnati) and David Lentz (University of Cincinnati)

[8] *One Person's Trash is Another's Treasure: A Paleoethnobotanical Approach to Reconstructing Plant Use Practices at Cerén*

Excellent preservation conditions at Cerén grant a detailed view of ancient Maya plant use and agricultural practices. This replete record extends south of Cerén's center, where agricultural fields were preserved beneath tephra from the Loma Caldera eruption. A midden uncovered among these fields yielded abundant carbonized paleoethnobotanical macroremains, and this paper focuses on results of their analysis. The intersection of macroremain data with plaster casts of plants preserved in Cerén's agricultural fields and habitation area presents an opportunity to test the methodological significance and reliability of carbonized macroremains, often the major vestiges of plant use practices at Maya sites.

Hood, Angela [119] see Lentz, David L.

Hopkins, Nicholas (Jaguar Tours)

[157] *The Origin of the Southern Mayan Languages*

The Southern Mayan languages (Mayan minus Huastecan and Yucatecan) display an interesting pattern of distribution that suggests a history of out-migrations from a common source. Applying the principles of analysis developed by linguists for such cases and taking into account the genealogical relationships of the languages, this paper identifies the probable homeland and describes the hypothetical routes of dispersion that resulted in the observable patterns of diversification. Seen in the context of the archaeological record, the chronology of the linguistic diversification suggests the motivation for the population movements that underlie the development of the varieties of Southern Mayan.

Hoppa, Kristin (University of California, Santa Barbara)

[123] *Terrestrial Resources During the Middle Holocene: A View from Santa Cruz Island*

The role of terrestrial resources on the Channel Islands is a topic of growing interest. In geographically bounded areas with limited freshwater, such as islands, such resources may factor into settlement and mobility decisions. This paper draws on macrobotanical data from three Middle Holocene sites located on the east end of Santa Cruz Island. Coupled with faunal data from these and other sites, this study contributes to a broader understanding of Middle Holocene subsistence and mobility decisions of Channel Islands inhabitants.

[123] *Second Chair*

Horlings, Rachel (Syracuse University), Greg Cook (University of West Florida) and Andrew Pietruszka (Syracuse University)

[89] *A tale of Historic Maritime Trade and Tragedy in Coastal Ghana*

With the first maritime archaeological survey in West Africa and discovery of an historic shipwreck off the coast of Elmina, Ghana in 2003, a new door of inquiry into the Atlantic trade opened. Three subsequent field seasons of research have devoted countless hours to unraveling the story of that shipwreck. This account follows the various avenues of inquiry that have been pursued and the often-surprising outcomes. While still ongoing, results of this research have already provided new perspectives on historical maritime trade, and hold the promise of more in-depth understandings of trade on the coast of West Africa.

Horn, Sherman (Tulane University)

[14] *Constructing Complexity: Architectural expansion and social development at Middle Preclassic Cahal Pech, Belize*

Recent research at the site of Cahal Pech, Belize adds to the growing corpus of architecture known from the Middle Preclassic period in the Maya area. Excavations demonstrate the presence of multiple platform types buried beneath Plaza B of the site epicenter, along with architectural sequences showing the construction, expansion and elaboration of these building platforms. This paper examines the built environment of the Middle Preclassic Cahal Pech site core and the developing physical and social complexity of settlement there, at a time intermediate between the earliest settled farming villages and the rise of kingship in the southern Maya lowlands.

[14] *First Chair*

Horowitz, Rachel (Tulane University) and Grant McCall (Tulane University)

[61] *Aim in Throwing and Precision in Flintknapping among Novice Flintknappers*

A frequent supposition concerning the origins of stone tool creation among hominids is that the skills used in throwing provided the abilities necessary for flintknapping. However, no evidence of a connection between the two skills has been demonstrated. This paper addresses this lack of evidence through experimental archaeology, specifically measuring participants aim in throwing and precision in flintknapping, to address the possibility of a correlation between the two. The information collected from this experiment could shed light on the possible evolutionary connection between throwing and flintknapping.

Horowitz, Rachel [22] *see* McCall, Grant S.

Horton, Elizabeth (Arkansas Archeological Survey) and George Sabo, III (Arkansas Archeological Survey)

[204] *Framing the Sacred: Craig Mound Sacred Bundles*

This paper presents new findings regarding embossed copper plate bundles and decorated lidded cane baskets from the 15th century Craig Mound "Great Mortuary" deposit. Our analysis of perishable and associated non-perishable materials curated by the University of Arkansas Museum has increased the number of known baskets, and provided substantial data on the construction of elaborate copper plate bundles with cane and leather frames. These data provide new insight into potential correspondences in structure and color scheme between perishables and other aspects of the Great Mortuary deposit and provide critical evidence for the role of basketry and textiles the "Great Mortuary Cosmogram".

Horton, Kristina

[188] *Reverse Archaeology- A History of the Falls Creek Collection from a Database and Collection Management Perspective*

Eighty years ago, the Falls Creek Rockshelters, in Durango, Colorado, were excavated by Earl Morris and Zeke Flora. Following excavation and litigation, the Falls Creek collection was dispersed to and ultimately accessioned at three primary facilities: CU Museum, Peabody Museum, and Mesa Verde National Park. As part of this grant funded project, the NAGPRA materials from the collection have been moved to the Anasazi Heritage Center for reevaluation and eventual repatriation. This paper provides a database and collection management perspective on the project and documents the steps in building a collection inventory through reverse archaeology.

Hostenske, Mary (University of Pittsburgh)

[31] *Life in a Liminal Zone: Intermediate Elites at Late Classic Los Naranjitos in the El Paraíso Valley, NW Honduras*

The liminal socio-political zone (Maya speaking to Non-Maya speaking) in NW Honduras is an environment in which to investigate the multiple roles enacted by members of the intermediate elite class during the Classic Period (AD 600-900). Los Naranjitos, an elite residential group, offers a portal into the social, political, economic, and ideological activities of its residents. A comparison of spatial organization, architecture, and material remains will situate the residents of Los Naranjitos on the socio-political spectrum of the region and will also investigate the degree of autonomy residents may have exercised, distancing themselves from ruling elites at surrounding centers.

Hough, Ian (National Park Service) and Ellen Brennan (National Park Service / Grand Canyon National Park)

[20] *Pre-Hispanic Architecture of the Eastern Grand Canyon River Corridor: A Preliminary Evaluation*

Formative Period occupation of the Colorado River corridor in eastern Grand Canyon National Park includes well preserved evidence of a masonry architecture

tradition that changed with time. We use architectural data from the Museum of Northern Arizona-National Park Service joint excavation project to illuminate a building technology that was uniquely adapted to the river environment. Changes in architectural design and modification between A.D. 1050-1220 suggest a shift toward more permanent residences and an associated intensification in the number and type of architectural spaces.

Hough, Ian [248] *see* Brennan, Ellen

Houk, Brett (Texas Tech University)

[191] *The Deadly Years: Terminal Classic Problematic Deposits and the Fates of Dos Hombres and Chan Chich, Belize*

A pair of Terminal Classic problematic deposits from Dos Hombres and Chan Chich, Belize was first investigated and reported over a decade ago. Since then, similar features have been excavated at other lowland Maya sites. By their very nature, these problematic deposits resist simple classification and universal interpretation. However, they are important features for understanding the specific nature of the Terminal Classic abandonment at the sites where they occur. Using newly reported deposits for comparison, this paper reassess the significance of problematic deposits from Dos Hombres and Chan Chich with respect to the specific fates of the those two centers.

Houle, Jean-Luc [54] *see* Clark, Julia K.

Houston, Stephen [148] *see* Luzzadder-Beach, Sheryl

Hovers, Erella (The Hebrew University of Jerusalem) and Anna Belfer-Cohen (Institute of Archaeology, The Hebrew University of Jerusalem.)

[218] *Are they For Real? The Paradigms of Prehistoric Research, Burials and "Burials" in the Levantine Middle Paleolithic*

The Levant holds one of the richest records of Middle Paleolithic fossils. In less discriminating days, those were classified as intentional burials without the need to go into details of depositional contexts and taphonomic processes that could be used to evaluate this scenario. More recent research has put the burden of proof on the prehistorians who have to provide supporting evidence that Middle Paleolithic burials were intentional and symbolic. Here we review the research on this topic in the last three decades and evaluate its effects on our understanding of Middle Paleolithic burials in the Levant.

Howard, Jerry (Arizona Museum of Natural History)

[52] *Issues of Collapse in Classic Period Hohokam Irrigation Systems*

The massive irrigation systems of the Hohokam created a unique and sustainable agricultural system that lasted for over 1000 years. Archaeologists have often considered possible mechanisms that brought an end to the use of this highly successful adaptation to the desert environment. Past hypotheses concerning environmental degradation created by irrigation technology are reviewed and evaluated. The patterns of chronological and engineering shifts in the structure of the irrigation systems are then investigated in light of recent research. Finally, the questions of environmental degradation

raised in the recently proposed core decay model are explored.

Howe, Mark (Tonto National Forest), Tim Kelly (Sequoia National Forest), Daniel F. McCarthy (San Bernardino National Forest), Claudia Brackett (California State University/California State University-Stanislaus) and Richard Lundin (Wondjina Research Institute)

[158] Lake Isabella Rock Art Recording Project

In September of 2010 the Tonto National Forest conducted a Rock Art Recording Project around Lake Isabella in the southern Sierras of California. This project was designed to find new and previously recorded Rock Art sites using dstretch picture technology and pXRF. The pXRF was to determine the composition of the pictographs to understand basic composition as compared to the underlying country rock. This pXRF determination will aid in identifying pigments used by local tribes in prehistoric character and determine what materials were used in pictographs. This understanding will help to characterize trade patterns or local use of pigment materials.

Howell, Cameron (University of South Carolina)

[64] Airborne and Satellite Remote Sensing of Shell Middens along the South Carolina Coast

Extensive vegetation studies have shown that the calcareous forests overlaying prehistoric shell middens and mounds differ substantially from vegetation on surrounding soil types. Differentiating between types of vegetation canopy coverages is possible using airborne and satellite remote sensing platforms. Using spectrographic signatures from key plant species characteristic of midden sites, the imagery can be classified and trained to identify the spectral properties of known midden sites. The model can then be applied to search for unknown sites, with the potential to expand the area of study to the Atlantic coastline from North Carolina to northern Florida.

Howell, Todd (Ecosystem Management Inc.)

[143] In With the Old: Examining Issues in Using Older Mortuary Data

The use of mortuary data collected early this century poses a number of problems and opportunities. In this paper I address some of these issues with respect to mortuary databases from the ancestral Zuni villages of Hawikku and Kechipawan. These data were collected in the 1910s and 1920s; the excavations had goals that were somewhat different than current goals. This paper explores the basic qualities of these databases and the challenges of making the data comparable to other Southwestern mortuary datasets.

Howie, Linda (University of Western Ontario)

[85] Intruder Alert! The provenance, technology and social meaning of foreign-looking serving vessels from Lamanai, Belize

Central to the reconstruction of community patterns of ceramic production and consumption is the discrimination of locally-made from intrusive pottery. Scientific studies of vessel provenance and technology aid this objective, providing a direct means of linking pots to the landscape through their raw material ingredients and/or other technological characteristics. This information is

especially helpful when similarity in vessels' surface features and appearance does not permit obvious distinctions. This paper investigates the archaeological significance of foreign-looking monochrome black serving vessels at Terminal Classic Lamanai, demonstrating how microscopic, chemical and micromorphological analyses have contributed to understanding their social meaning. **[56] see Donis, Alicia E. [190] see Wiewall, Darcy L.**

Hritz, Carrie (The Pennsylvania State Un), Jennifer Pournelle (University of South Carolina) and Jennifer Smith (Washington University in St. Louis)

[26] High Risk: Deltaic Resilience and the Genesis of Mesopotamian Cities (Iraq)

The flourit of early Sumerian civilization in the Tigris-Euphrates delta at the onset of the 4th millennium BC marked a degree of economic differentiation, socio-political complexity, and urbanization theretofore unseen elsewhere in the ancient world. Discussions of the economic foundations of this urbanization posit three sustainable pillars of resources (1) alluvial irrigable (2) surrounding pasturelands and (3) levee back swamps and marshes. Following a quarter-century hiatus in foreign archaeological field research in Iraq, this paper will report preliminary results of the first NSF funded geo-archaeological ground reconnaissance of the Mesopotamian delta, aimed at investigating the relative contribution of these pillars.

Hu, Di (University of California, Berkeley)

[49] Weaving for the Sun and the Son: a comparison of production and control in the Inka acllawasi and the Spanish obraje

A cursory inspection of the Inka acllawasi and the Spanish obraje points to many similarities. They were controlled spaces primarily for the production of textiles. Both spaces functioned as institutions for religious and political indoctrination. This paper will examine both institutions through architectural, archaeological and documentary evidence to see whether the organization of production and control was fundamentally similar or different. Such a comparison will shed light on whether the Spanish regimes of labor, particularly those related to the production of textiles, represented a break or a continuation of the underlying principles of Inka labor organization.

Huamán, Luis [93] see Hayashida, Frances M.

Huang, Jennifer (Bureau of Reclamation), Mitzi Rossillon (Renewable Technologies, Inc.) and Ejvnd Nielsen (Bureau of Reclamation & Boise State University)

[83] Just checked in to see what condition site condition is in

The condition of archaeological sites in the American Falls Archaeological District in southeastern Idaho has been an area of concern due to exposure to multiple kinds of erosion over the years. Off road vehicles, cattle trampling, looting, vandalism, and the natural forces of wind and water are threatening the integrity of these sites. But to what degree? A recent condition assessment project looked at four sample sites across the District to gauge current conditions and provide recommendations for management action. The District is listed on the National Register and contains sites

representing regular human use over 12,000 years.

Huang, Jennifer [83] *see* Lincoln, Thomas R.

Hubbard, Duane (National Park Service, Southern Arizona Office), Gavin Gardner (National Park Service) and Jake DeGayner (National Park Service) [248] *New Archaeological Research Resulting from Border Impacts at*

The National Park Service recently partnered with the University of New Mexico to preserve sites in the border region of Southeast Arizona. Over the last year, the team has encountered new discoveries and management challenges. Although some parks have been in the NPS system for nearly a century, little is known regarding the archaeological sites on these lands. In the process of relocating previously discovered sites, archaeologists also recorded resources ranging from historic structures to Archaic period camps. In an effort to curtail impacts caused by illegal border crossings and subsequent interdiction efforts, as well as natural erosion, a wide array of condition assessments, documentation, and preservation methods have been implemented. The result of this effort is the establishment of a proactive archaeological inventorying and monitoring program that includes GIS analysis, intensive archeological site mapping, in-field recordation of current impacts and implementation of preservation treatments.

Hubbe, Mark (Universidad Católica del Norte) and Christina Torres-Rouff (Universidad Católica del Norte)

[233] *The occupation of the San Pedro de Atacama oases (northern Chile): A review of the chronology and geography of settlement through the direct 14C dating of human remains.*

The San Pedro de Atacama oases have been permanently occupied since approximately 4.2 kyr BP. This history is marked by distinct periods of interaction with neighboring groups and influence from foreign states (including Tiwanaku and Inca) as well as periods of relative cultural independence. Here we present 54 new AMS dates from human remains that, together with 57 previous dates from local cemeteries, allow us to review the chronological occupation of the distinct oasis districts. These data provide a better understanding of how human settlements were dispersed, including occupation and control of strategic areas and patterns of interregional interaction.

Huckaby, Laurie [192] *see* LaBelle, Jason M.

Huckell, Bruce (University of New Mexico)

[94] *West of the Plains: Paleoindians in the Southwest* Knowledge of Paleoindian prehistory is strongly colored by work accomplished on the Southern Plains, but the North American Southwest has an equally long and important record. This paper presents an overview of what is known of these manifestations from previous and current research, and shows that Clovis, Folsom, Plainview-Goshen, Cody, and Allen-Frederick sites are all present. Data on subsistence, site type, settlement location, and mobility are presented, and suggest that these groups were resident in the Southwest for extended periods of time. This overview suggests that we have barely scratched the surface of the potential

information available.

Huckleberry, Gary (Geoarchaeological Consultant) [199] *What We Still Don't Know: The Environmental Context for the Northward Spread of Agriculture 4000-2000 BC into the Southwest*

Recent research suggests that maize agriculture arrived in the North American Southwest through diffusion from Mexico in part due to climate change (increased moisture) beginning ca. 3900 BC. However, the proxy evidence for changes in Southwestern climate (e.g., packrat middens, pollen, paleoflood chronologies, laminated sediments, etc.) during the middle and late Holocene remains contradictory. The current lack of consistency between different proxy data sets limits our understanding of regional climatic-geomorphological conditions that may have influenced indigenous agriculture. Improved spatial and chronological resolution of Holocene paleoclimate and surficial geological processes is needed.

Hudgins, Carter (Clemson University) and Eric Klingelhofer (Mercer University)

[121] *Lost and Found: Jamestown, Nevis and the Calculation of Urbanization in the Early English Caribbean*

Described by its governor in 1720 as "a desert island to what it was thirty years ago," Nevis soon after lost its pre-eminent position among England's sugar islands. Archaeological investigations at Jamestown, one of two settlements that coalesced in mid decades of the 17th century, revealed evidence of cycles of urban resilience and revival until the decline of sugar production after emancipation obviated the need for two commercial entrepôts. A high incidence of Afro-Caribbean wares and variation in vessel form signaled changes in the town's role as well as its dependence on market and population cycles.

Hudson, Nicholas [258] *see* Silverstein, Jay E.

Huerta, Edgar (Cal State Fullerton) and Carl Wendt (California State University, Fullerton)

[96] *Using Petrographic Techniques to Understand the Organization of Olmec Bitumen Processing* Preliminary studies on the organization Olmec bitumen processing indicate regional differences, production scale, and processing techniques. However, these studies have not involved detailed analyses of the materials added during processing. Thirty-seven archaeological bitumen thin sections from seven Olmec sites were subjected to petrographic analysis to identify the types, quantities, and sizes of materials added to the raw bitumen. Results show differences in types, quantities, and sizes of additives, within and between sites. These findings indicate different "recipes" and processing scale, and may reflect distinct regional variation in the organization of Olmec bitumen processing activities.

Huffman, Thomas (Univ of the Witwatersrand)

[253] *The organisation of ritual in early farming societies in southern Africa*

Ritual activity in pre-Colonial farming settlements in southern Africa took place in areas pre-determined by an organisation of space that emphasized blood vs marriage

ties and status, as well as sacred and profane activities. Inside the settlement, codified rituals occurred at the back of the cattle kraal, the back of the main house and the back of the homestead. In times of extreme drought, rainmaking rituals followed similar principles except they took place in the bush.

Hufthammer, Anna Karin [236] *see* *Dolphin, Alexis E.*

Hughes, Richard (Geochemical Research Laboratory) [230] *Taming Time in the Great Basin*

Following the pioneering work of Heizer and Baumhoff, from 1967-1968 Billy Clewlow published a series of papers describing and chronologically ordering numerous morphological forms of Great Basin projectile points into meaningful archaeological sequence. His work was critical to establishing the temporal duration of each of these forms and creating what we call today temporal types. The projectile point chronology that Clewlow was instrumental in developing has been reaffirmed at countless archaeological sites throughout the Great Basin, has been pivotal in cross-dating otherwise undatable open sites, and has provided a chronological anchor for understanding how sites may have functioned through time.

Hull, Kathleen (University of California, Merced)

[11] *A Land of Many People: Population Dynamics as Context and Catalyst*

The archaeological record of California provides unparalleled opportunities for study of long-term population dynamics of small-scale societies. This potential derives from the wealth of oral tradition, ethnohistoric, ethnographic, linguistic, and human biological data, as well as the nature of the archaeological record itself. Multi-faceted demographic studies have explored fundamental issues of population size, growth, and movement, and may also contribute to more nuanced examination of historically situated social relations in small-scale societies. The relevance of such research extends beyond the state, as case studies of foraging societies in abundant, rather than impoverished, resource areas of both coastal and interior zones.

[151] *see* *Kremkau, Scott H.*

Hull, Sharon (University of Manitoba), Mostafa Fayek (University of Manitoba/Maxwell Museum) and F. Joan Mathien (Maxwell Museum)

[136] *Turquoise Procurement and Exchange Patterns between Three Ancestral Puebloan Great Houses*

Many turquoise artifacts have been recovered in the communities of Pueblo Bonito, Salmon, and Aztec; especially in early excavations at Pueblo Bonito, where an extraordinary amount (>200,000) of turquoise artifacts have been recovered. Although all three of these San Juan Basin communities share an interest in turquoise and have Chacoan attributes, the relationship between them has remained elusive. Identifying the provenance region of turquoise artifacts and examining the extent of and patterns of turquoise procurement and exchange provides insight into the relationship between the inhabitants of these three great houses.

Hulse, Eva (University at Buffalo)

[181] *Patterns of domestic space in Subarctic soils*

This study compares patterns of soil composition that

reflect various domestic activities at two different sites, Kierikki in Finland and Old Factory Lake in Canada. The results of this analysis allow prediction of regions of archaeological interest, and distinguish between archaeological features. The patterns reveal how people maintained their living space, and hint at seasonality of occupation.

Humphrey, Emma (University of Toronto)

[69] *Stocking the Larder: Site function through faunal analysis in the Kebaran Epipalaeolithic.*

The site of Urkan e-Rub IIa, an early Kebaran Epipalaeolithic site (approximately 18,000 cal years BP) in the Lower Jordan Valley, shows evidence of specialised gazelle hunting and processing. Initial interpretations of the site argued for a multi-purpose residential base camp, supported by lithic tool and shell bead manufacturing. This paper will present faunal data that throws some question into this interpretation. This evidence suggests instead that the site was part of a logistical mobility pattern, where gazelle were procured and processed in their entirety for either immediate consumption or transport elsewhere.

Hunt, Leigh Ann [57] *see* *Mitchell, Mark D.*

Hunt, Robert

[199] *Water is not only H₂O: Solutions, Suspensions and Agriculture*

"Water" is widely known to be necessary for plant growth, and therefore for agriculture. "Water" however is not just H₂O. Water as found in nature is also a set of solutions, and a set of suspensions. These solutions and suspensions can affect plant growth, and are therefore relevant for investigations of prehistoric agriculture. In this paper we focus on canal irrigated and flood water runoff fields. Attention is paid to the contents of the water. It is our objective to alert other scholars to what we do not know, and why it may be relevant for understanding agriculture.

[199] *Second Organizer*

Hunt, Terry (University of Hawai'i) [123] *Discussant*

Hunt, Terry [153] *see* *Morrison, Alex E.*

Huntley, Deborah (Center for Desert Archaeology), Barbara Mills (University of Arizona), Lara Muncaster (University of Arizona) and William Haas (University of Arizona)

[264] *The White-on-red Pottery Phenomenon in the American Southwest*

Between about AD 1050 and 1450, several varieties of pottery with white paint on a red-slipped background were made in the American Southwest. This "white-on-red phenomenon" crosscuts traditionally defined ceramic ware categories. We use a comprehensive database developed as part of the Southwest Social Networks Project to graph densities of white-on-red types through time and across space. We then examine the white-on-red phenomenon comparatively, tabulating specific decorative and technological attributes. We postulate that this phenomenon is at least partly the result of widespread interaction and migration, and that some white-on-red varieties were distinctive markers linking diverse groups.

Huntley, Deborah [201] *see Dungan, Katherine A.*

Hurley, Kevin [55] *see Rogers, Michael*

Hurley, Warren (Bureau of Reclamation) and Elizabeth M Perry (SWCA Environmental Consultants)

[83] *Traditional Cultural Properties and the Animas-La Plata Project*

The archaeological investigations associated with the Animas-La Plata water reclamation project near Durango, Colorado were fundamentally linked to the concept and manifestation of traditional cultural properties or places (TCP's). An often misunderstood and contested concept, TCP's in this project emerged as more than a regulatory challenge. In this project, archaeological sites and TCP's were one and the same, and the process of mitigation invited fresh discourse among Indian and non-Indian stakeholders concerning the value of archaeological sites and the information gathered from them. This poster chronicles important milestones in a journey towards cross-cultural understanding that spans more than a decade.

Hurst, Winston (Bohunk Inc.) and Catherine Cameron (University of Colorado)

[117] *Continuity and Change: Exploring the Chaco to Post-Chaco Transition in Southeastern Utah*

Southeastern Utah was on the fringe of the classical Chaco world; yet during the Chaco era, communities there were often centered on great houses or quasi-great houses. The Bluff Great House and Comb Wash communities were both occupied through both the Chaco and post-Chaco eras. Investigations in these communities illuminate the nature of the Chaco to post-Chaco transition in this part of the old Chaco world and highlight difficulties with discerning continuity in cultural practices during this crucial time.

Hurst, Winston [46] *see Till, Jonathan D.*

Huster, Angela (Arizona State University)

[58] *Long Term Stability?: Chronology and Demographics at Calixtlahuaca, Mexico*

The development of a three-phase chronology for the Middle to Late Postclassic site of Calixtlahuaca shows that the site does not conform to the Central Mexican pattern of steadily rising population over these periods. I discuss the methods involved in creating the chronology (discriminant analysis based ceramic seriation and Monte Carlo based methods developed by Kintigh and Cowgill for determining phase length from radiocarbon dates) and the implications of the findings.

Hutson, Jarod (University of Nevada-Reno), Teresa Wriston (University of Nevada-Reno) and Gary Haynes (University of Nevada-Reno)

[60] *Rock Art and Foragers' Imagination, and the Dirty Tricks of Rockshelter Deposition*

Lifelike hoofprint engravings (petroglyphs) are very limited in distribution in Zimbabwe. Rockshelters with these images are clustered in northwestern Zimbabwe, where foragers created the art between 2,000 and 4,000 years ago. Late Iron Age occupations overlying the forager levels are much younger. A nearby Early Farming

Community may date to the same time the foragers' rockshelter deposition ended. Two unknowns prevent us from reconstructing a timeline of the transition from foraging and farming: shifting paleoenvironments and changing human behaviors. The rock art may be the best starting point for understanding human societies in the Late Holocene.

Hutson, Scott (University of Kentucky)

[24] *They Built the Road. Did the Road Build Them?*

Early in the Classic period in Northern Yucatan, Mexico, leaders from the site of Uci oversaw the construction of a raised stone causeway connecting Uci with several sites extending eastward up to 18km. The causeway functioned as a political symbol because travel required no more than a non-constructed foot path. Nevertheless, the arduous process of constructing the causeway and the high settlement density along its route suggest that the causeway did more than manifest the agenda of political actors. Rather, it helped shape political agendas and local histories, thus encouraging a symmetric analysis of people and things.

Hutson, Scott [38] *see Davies, Gavin R.*

Hyde, David (The University of Texas at Austin) and Fred Valdez (The University of Texas at Austin)

[34] *Social Memory at an Eastern Maya Lowlands Hinterland Community: Pots and Burials at the Medicinal Trail Site*

Excavations at Group A of the Medicinal Trail site, a commoner community in northwestern Belize, have revealed two caches on a small Late Preclassic ceremonial platform and two burials on a Late Classic shrine are similarly arranged. A pattern of interment that utilizes the northwest and southeast corners of ceremonial structures is believed to be expressions of socio-religious importance, creating continuity of space and kinship by the inhabitants. This pattern and other material culture evidence reinforce the possibility of an investment in long term, multi-generational household identity, using social memory to link the past to their present.

Hylkema, Mark (California State Parks)

[222] *California State Parks and the Quiroste Valley Cultural Preserve*

The newly created 220 acre Quiroste Valley Cultural Preserve, situated along the central California Coast encompasses multiple prehistoric archaeological sites and was the location where the first Spanish land expedition visited a large village of Quiroste Ohlone just prior to finding San Francisco Bay. The goal of the preserve is to use archaeological information to restore the native habitat and manage it in cooperation with the Amah/Mutsun and Muwekma Ohlone Indian tribes.

[222] *Third Organizer*

Iannone, Gyles (Trent University)

[191] *Cross-Cultural Perspectives on Power, Prosperity, and Political Truncation*

Cross-culturally, the legitimacy of rulers has always been intricately bound up in the perceived prosperity of their polities, as is exemplified in the construction of awe-inspiring monumental architecture, the sponsorship of elaborate ceremonies, the wearing of ostentatious attire

and display of symbols of authority, and the "trafficking" in various forms of social currency. During times of stress, kings would have been expected to ramp up these various activities in efforts to maintain – at least in surface appearance – the prosperity of the polity. This could exacerbate an already difficult situation, leaving the king open to condemnation, and sometimes violent overthrow.

[191] *First Chair* [238] see Macrae, Scott A. [191] see Schwake, Sonja

Ibarra, Julio (Zona Arqueológica de Monte Albán) and Agustín Andrade (Zona Arqueológica de Monte Albán)

[95] *El uso del espacio en el Conjunto Monumental de Atzompa.*

El sitio arqueológico de Atzompa está conformado por espacios, públicos y privados. El emplazamiento del área principal, dispuesto en un grupo de plazas delimitadas por basamentos, asentados sobre terrazas construidas, aprovechando diferentes niveles altitudinales y siguiendo ejes orientados. Por otro lado, las Plazas o Conjuntos Arquitectónicos que se encuentran en la periferia, presentan mayor diversidad en composición, orientación y distribución. Han sido definidas 11 plazas, asociadas a casas, terrazas, plataformas, accesos, y diversas etapas constructivas. Se presenta la descripción y análisis de estos espacios, considerando su asociación, con elementos arquitectónicos y materiales arqueológicos, así como los diferentes momentos de construcción.

Iizuka, Fumie (Fumie Iizuka), Hector Neff (California State University Long Beach) and Richard Cooke (Smithsonian Tropical Research Institute)

[228] *Deducing Human Mobility by Studying the Circulation of Panama's Earliest Pottery (Monagrillo) (ca. 4,800-3,200 B.P.)*

Human residential and individual mobility during the Late Preceramic (~7,000 – 4,800 B.P.) and Early Ceramic (~4,800 – 3,200 B.P.) periods in Central Panama have been inferred from studies of settlement size and location, and subsistence practices. At this time communities were located on the Caribbean and Pacific watersheds in several biomes. The relevance of Panama's earliest pottery ("Monagrillo") to mobility has not been evaluated. We used chemical (portable XRF and LA-ICP-MS) and petrographic analyses to infer the nature of ceramic circulation among inland and coastal communities with a mixed farming, collecting, hunting and fishing economy.

Ikehara, Hugo (University of Pittsburgh)

[93] *Economic strategies and Political development during the Formative Period of the Andean North Coast*
The goal of this paper is to present a model which explains the relationships between agricultural strategies and political development during the Formative Period of the Andean North Coast. Economic structures during the Early and Middle Formative periods were very different across polities, but changes beginning around 750 B.C. created economical differences that supported the consolidation and rise of elites groups.

[125] see Chicoine, David

Ilirian, Gjipali [169] see Allen, Susan E.

Inanez, Javier (University of Barcelona)

[208] *Red Shine: Archaeometrical Characterization of Roja Bruñida Pottery from Panama*

Panamá Viejo was founded in 1519 by the Spanish expeditionary Pedrarias Dávila, becoming an important base for the trade with Spain. In 1671, pirates attacked and sacked the city, resulting in a fire that destroyed it entirely. Thus, a new settlement was built a few miles west, which would become the origin of the modern Panama City. This study accounts for the first archaeometrical characterization of the so-called Roja Bruñida pottery from Panama recovered in recent archaeological excavations at Panama Viejo and Casco Antiguo. The archaeological implications of this important ceramic in the Spanish colonial market in Panama is assessed.

Ingraham, Robert [206] see Belknap, Samuel L.

Ingram, Scott (Arizona State University)

[199] *What We Don't Know About Human Vulnerability to Dry Periods*

We don't understand climate's differential influence on human behavior over time and space. Thus, we cannot explain why at some times and places climatic hazards, such as dry periods, appear to stimulate behavioral responses and why at other times and places responses are not evident. I argue that a lack of progress on this issue in the Southwest is caused by insufficient empirical scrutiny of existing models of human vulnerability to climatic hazards and our reliance on an unverified assumption of resource marginality. I also present results that document the greatest vulnerability to dry periods where we least expect it.

[199] *First Chair*

Inomata, Takeshi (University of Arizona)

[182] *Plaza Construction and Ritual at the Preclassic Maya center of Ceibal, Guatemala*

Ceibal was founded as a formal ceremonial center around 1000 BC. The focus of its communal, public life was a temple-plaza complex, generally called an E-Group assemblage. The substantial accumulation of plaza floor constructions and the concentration of ritual deposits found in the plaza suggest that this open space was a symbolically and politically charged place tied to the identity of the community, its social order, and power relations.

[182] *First Chair* [225] *First Chair* [225] see MacLellan, Jessica [225] see Triadan, Daniela

Iriarte, María-José [218] see Arrizabalaga, Alvaro

Iseminger, William [193] see Lundin, Richard J.

Isendahl, Christian (Uppsala University) and Michael Smith (Arizona State University)

[90] *Urban agriculture and dispersed housing in the low-density cities of Mesoamerica*

Maya and Aztec cities exhibited a distinctive kind of low-density urbanism common in ancient Mesoamerica. The non-monumental components of these cities shared a number of characteristics that distinguish them from the high-density ancient and historical cities in the Old World that are often considered the norm for pre-modern urbanism. These traits include the practice of intensive

cultivation within urban settlements, residential zones that were dispersed and unplanned, and the arrangement of houses into spatial clusters that served as urban neighborhoods. Models from research on modern peri-urban zones and informal settlements help illuminate Mesoamerican low-density urbanism.

Ives, John (University of Alberta)

[94] *Resolving the Promontory Culture Enigma*

With no small irony, Julian Steward's approach to cultural ecology (and its subsequent impact on Americanist archaeology) limited interest in his earlier assertions that the Promontory Culture was created by Apachean ancestors. With few exceptions, neither his Apachean proposition nor the inherent richness of the Promontory assemblages received the serious attention they deserved. When viewed from Subarctic and Plains perspectives, however, his Apachean proposition is well supported; irrespective of this, the extraordinary fidelity of the Promontory materials allows for remarkable anthropological insights into the AD 13th century occupants of the Promontory Caves.

Ives, John [17] see Eiselt, B. Sunday

Iwanaga, Shozo (Kyushu University Museum)

[149] *Position of the Yayoi Society in the Context of Social Evolution and a Re-examination of the Concept of Chieftdom*

Debates still persist among Japanese archaeologists as to the position of the Yayoi (ca. sixth century B.D. to A.D. third century) society in the context of social evolution in Japan, whether it was at a tribal level or at the level of a state. The debates are an outcome of difference in the conceptual definition of a state, especially the early state in Japan. In this paper, I intend to re-examine the concepts of a tribe, ranked society, stratified society, early state, and especially chieftdom. I go on to define the Yayoi society by distinguishing it from the succeeding Kofun.

Izeki, Mutsumi (Keio University) and Kazuo Aoyama (Ibaraki University)

[93] *Aztec and Classic Maya Socioeconomic Organization and Urbanism*

This paper discusses Aztec and Classic Maya socioeconomic and political organization and provides some insights into the ongoing debate about the nature of ancient Mesoamerican urbanism. The Aztec obsession with turquoise, which characterizes their solar-war cult, contributed to develop long distance trade networks and affected socioeconomic system of the Southwest or turquoise mining district. The results of analysis of more than 140,000 lithic artifacts collected in and around Copan, Honduras, and Aguateca, Guatemala, suggest the procurement and distribution of obsidian polyhedral cores may have been administered by the royal court of the both cities as part of its political economy.

Jackson, Damon [81] see Bailey, Ralph [81] see Agha, Andrew [81] see Shah, Sudha A.

Jackson, Donald [224] see Salinas, Hernan P.

Jackson, Paul [195] see Pearce, Kenny

Jacobson-Tepfer, Esther (University of Oregon, Mongolian Altai Project)

[12] *The Appearance of Ostriches in Rock Art of Mongolia: Fauna and Paleoenvironment*

Ostrich (*Struthio camelus*) images are well known throughout Africa, including the oldest from Messak and the Tassili region through modern San paintings of ostrich theriomorphs. Although there are images said to be ostriches from northern China, the most reliable documentation of *Struthio anderssoni* comes from western Mongolia, from Khoit Tsenkir cave in Khovd aimag and Aral Tolgoi, in Bayan Ölgii aimag. The latter could well be the oldest known representations of *Struthio* in the world. This paper will present the Mongolian images within the context of rock art indicators of faunal sequence and reconstructed paleoenvironmental conditions.

[54] *Discussant*

Jacomet, Stefanie (IPAS Basel University Switzerland) [45] *Discussant*

Jagani, Sheel (University of California, Berkeley), Torben Rick (Smithsonian Institution, National Museum of Natural History) and Courtney Hofman (University of Maryland)

[105] *Ancient Oyster Fisheries of the Chesapeake Bay: Methods and Implications*

Anthropogenic change is well documented in contemporary records of the Chesapeake Bay, especially the collapse of the Bay's oyster fishery and associated changes in ecosystem structure and function. Questions remain about the nature of the oyster fishery in prehistoric times when Native Americans intensively harvested oysters and other Bay resources for millennia. Here we present results from our recent work at Fishing Bay, Maryland focusing on ancient shellfish harvest at a series of sites dated to the last 1000 years. Our analysis provides perspectives on ancient Chesapeake ecosystems, as well as oyster abundance and population structure.

Jagani, Sheel [152] see Piro, Jennifer J.

Jaillet, Angela (Indiana University of Pennsylvania)

[65] *Investigating Historic Accounts of Pandernarium: Geophysical Investigation at 36ME235*

The haunting words of African American writer, Ralph Waldo Ellison, give a voice to the unseen peoples of the past; "I am invisible, understand, simply because people refuse to see me." Recent archaeological investigations of antebellum African American and African diaspora communities are giving voice to a dynamic period of the past. Archaeological investigations, such as those conducted at Pandernarium, an antebellum freed African American settlement in northwestern Pennsylvania, are a way to see the past and to recognize, where we once refused. Geophysical investigation, in the form of ground-penetrating radar, provides invaluable insight into the variable landscape of Pandernarium.

[65] *Second Organizer*

Jaime-Riveron, Olaf (University of Kentucky), Christopher Pool (University of Kentucky), Dolores Tenorio (Instituto Nacional de Investigaciones Nucleares), Fabiola Monroy (Instituto Nacional de

Investigaciones Nucleares) and Melania Jimenez (Instituto Nacional de Investigaciones Nucleares)

[193] *Formative Period Variation in Basalt Sources and Technology at Tres Zapotes, Veracruz, Mexico*
In this study we employed a portable X-ray fluorescence spectrometer (XRF) to determine the chemical composition and infer source outcrops for basalt artifacts and debitage from Olmec and epi-Olmec contexts at Tres Zapotes, Veracruz, Mexico. We analyze source variation with respect to technological change and the contexts of production and consumption of basalt implements. Whereas previous studies of Olmec basalt source provenience focused on monuments and/or finished groundstone implements, we analyze debitage, and performs as well as finished artifacts to examine the relationship between manufacturing technology, material characteristics, and geological source.

Jakeli, Nino [203] see Bar-Yosef, Ofer

Jakimavicius, Ramunas [92] see McCormick, David R.

James, Steven R. (California State University at Fullerton)

[263] *Late Holocene Human Impacts on Marine and Terrestrial Fauna in Southern Coastal California: Archaeological Examples from San Nicolas Island and the Palos Verdes Peninsula*
Zooarchaeological and paleontological evidence from various regions of the world indicate that ancient humans substantially impacted many island and mainland coastal ecosystems. Data from late Holocene archaeological sites on San Nicolas Island and the Palos Verdes Peninsula in southern coastal California are examined with regard to overexploitation and resource depression of marine mammals, fish, and shellfish populations. The role of domestic dog as a top predator introduced in prehistory on San Nicolas Island and other Channel Islands is also examined. Biologists, conservationists, and other researchers need to consider prehistoric impacts in managing and preserving coastal ecosystems for the future.

[263] see Grijalva, Daniel S. **[263]** see Jones, Gary A.

Jamison, Gregg (University of Wisconsin-Madison)

[47] *Understanding Indus Seal Carving Traditions: A Stylistic and Metric Approach*
During the Integration Era of the Harappa Phase (2600-1900 BC) inscribed seals were among the most important components of Indus material assemblages, yet important questions remain regarding how production was organized and varied within and among different sites. Using formal stylistic and metric analyses of various elements of seals, it may be possible to fingerprint groups that would have been carved by different producers. Preliminary results suggest these techniques are useful for providing new insights into the scale and nature of variation in Indus seal carving traditions.

[47] *First Chair*

Janes, Stephen

[136] *An Ancient North American Linescape*
Ground surveys have discovered a network of ancient lines crossing the San Juan Basin and adjacent mountainous areas of New Mexico and Arizona.

Separate from the inferred Chacoan "road" system, the linescape is defined by the alignment numerous small structures (>100 square meters), linear sherd scatters, and distinct landforms. Two sets of lines occur in the basin trending east to west and northeast to southwest respectively. Lines mapped in detail extend at least 70 kilometers and beyond the basin suggesting that they may be part of a much larger linescape.

Janetski, Joel (Brigham Young University) and Richard Talbot (Brigham Young University)

[94] *Fremont Social Organization: A Southwestern Perspective*

For too long scholars have embraced an introspective view to illuminate our understanding of the Fremont phenomenon. This is especially true of social structure as no ethnographic analogues existed in the Fremont area to provide a basis for conjecture regarding Fremont societies. Here we propose re-casting the question of Fremont social order as an aspect of the larger Southwestern farming pattern. Fundamental to that pattern are the well-documented, albeit diverse, Southwestern tribal communities that can provide a starting point for understanding Fremont society.

[188] *Discussant*

Jansen, Doris (University Kiel (Germany)) and Oliver Nelle (University Kiel (Germany))

[25] *Relationship between human influence and forest composition in the Neolithic – examples from the lowlands of northern Central Europe*
Humans left their fingerprints already in the Neolithic by changing the environment around their settlements and graveyards. How far from these areas the human impact reached? Did they influence the forest composition? To find out about these questions, analyses of charcoal are done. Additional to the determination of charcoal, diameter class and growth ring analysis are carried out. Not only information about the wood composition, but further knowledge about what part of a tree was burnt and sometimes even about growth conditions is gained. Samples from archaeological sites (human wood usage) are compared with samples from soils (natural forest composition).

Jantz, Richard L. [77] see Willey, P

Janusek, John (Vanderbilt University)

[24] *Animate Monoliths and Emergent Authority in the Andean Lake Titicaca Basin*

Many stone objects were powerful nonhuman subjects in the Andes. In the Lake Titicaca basin, these included monumental carved effigies erected in early centers. Charged events in evocative places afforded contexts for animating these effigies and facilitating their embodiment of relations with ancestral beings and landscape features. As social networks continually shifted and, in particular, the urban center of Tiwanaku emerged, older monolithic effigies came to present a community's past and newer effigies its present. The same sociospatial moments fostering animation became equally vital for producing new types of human subjects in a context of increasingly centralized authority.

[24] *Second Chair* **[24] *Second Organizer*** **[267]** see Williams, Patrick R.

Janz, Lisa (University of Arizona)**[12] Radiocarbon dating of ratite eggshell as a means of dating archaeological sites**

Ratite eggshell is an ideal material for radiocarbon dating and provides highly accurate dates. As such, it should be an excellent source of dates for archaeological sites, particularly those with no organic remains. Ostrich eggshell from dated and undated archaeological contexts in Mongolia and China were analyzed using AMS-radiocarbon. Results suggest that in while in some circumstances, ostrich eggshell may be useful for determining the age of a site, in other cases it is not a reliable indicator. More work should be done in determining in what circumstances humans may have utilized fossil shell.

[12] First Chair

Janzen, Anneke (UC Santa Cruz) and J. Cameron Monroe (University of California, Santa Cruz)**[177] The Dahomean Feast: Royal Culinary Practices and Animal Procurement Strategies in 18th-Century West Africa**

Fauna from an 18th-century Dahomean royal palace site in Cana, Bénin provides insight into royal West African culinary practices in a period of dramatic political transformation. The remains of a wide range of taxa indicate a broad array of food procurement strategies. Additionally, the low incidence of weathering, relatively high density of bones, and very tight date range for the assemblage (1775-1780) suggests a feasting event. This assemblage yields insights into the political economy of animal resources in Atlantic West Africa, and, more broadly, provides a comparative example for discussions on the nature of foodways in the African Diaspora.

Jarrett, Rebecca [31] see Kittel, Michelle

Jazwa, Christopher (University of Oregon), Douglas Kennett (University of Oregon) and Bruce Winterhalder (University of California, Davis)**[123] Testing Predictions of a Human Settlement Model on California's Northern Channel Islands**

The expansion of permanent settlements on the Northern Channel islands starting ~8,000 cal BP is generally consistent with the predictions of the Ideal Free Distribution (IFD). The current model incorporates environmental factors such as watershed size, shoreline type, and the presence of kelp beds to predict the age of first settlement. We have expanded the model to incorporate additional variables and test, using excavation data from Old Ranch Canyon, a high ranked location on Santa Rosa Island, the persistence of permanent settlement in high ranked drainages and resource depression in this drainage prior to the expansion to less suitable locations.

[123] First Chair

Jelinek, Lauren [80] see Maeyama, Kimberly

Jenkins, Austin (St. Cloud State University)**[163] Blackduck and Psinomani: Using GIS to Distinguish Archaeological Complexes**

The Blackduck and Psinomani Complexes of the Upper Midwest are chronologically sequential and overlap spatially. Stylistic and technological differences in ceramics provide the strongest evidence for

distinguishing the two. Other diagnostic artifacts and features are not well defined due to a lack of stratigraphic integrity within most sites. Site locations and types as well as environmental and cultural data were analyzed using a geographic information system (GIS) and statistical measures. This study seeks to further understanding of the Blackduck/Psinomani transition and to demonstrate how GIS can help to understand cultural phenomena (e.g. culture change/continuity and land use) in archaeological contexts.

Jenkins, Dennis (Museum of Nat. & Cult. Hist., University of Oregon), Loren Davis (Oregon State University), Thomas Stafford (Stafford Research, Inc.) and Eske Willerslev (Centre for GeoGenetics, University of Copenhagen)**[262] Dating, context, and stratigraphic associations of late Pleistocene cultural deposits in the Paisley Caves of South-Central Oregon**

Ancient human DNA has been recovered from 16 coprolites radiocarbon dated between 12,895 and 14,370 calibrated years ($10,980 \pm 20$ to $12,345 \pm 55$ BP) at the Paisley Caves in the Summer Lake basin of south-central Oregon. This paper presents new evidence of associations of artifacts, coprolites, and extinct faunal remains in the well dated "Gray Sand" strata of Paisley Caves 2 and 5. Chronological control is provided by a suite of 27 radiocarbon dates obtained on species identified twigs, soluble residues, single fibers from coprolites, rodent droppings, and bones.

Jenkins, Sarah (Washington State University)**[178] Old site, new questions: putting resource intensification to the test in the Southeastern Columbia Plateau using faunal remains from Windust Cave C (45FR46)**

Recent research suggests that the use of certain resources intensified in the Columbia Plateau during the Late Prehistoric period. Evidence for intensification is illustrated by the many artifacts and features related to a forager-collector lifestyle in the Southern Columbia Plateau. However, direct evidence for intensification of Artiodactyls through decreased richness and evenness and greater processing of elements for extraction of grease and marrow, has yet to be shown. I put resource intensification to the test using the findings from Windust Cave, a temporary hunting camp used from 10,000 B.P. to historic time, in conjunction with faunal assemblages from contemporaneous sites.

Jennings, Justin (Royal Ontario Museum)**[267] The Huarhua Rock Salt Mine: Possible Archaeological Implications of Modern Salt Extraction Practices**

One of the larger sources of rock salt in the south central Andes is the Huarhua mine in Peru's Cotahuasi Valley. Although continued extraction has destroyed traces of Pre-Columbian activities within the mine itself, other archaeological evidence suggests that the salt has been exploited for at least a millennium. Mining practices have undoubtedly changed through the centuries, but Huarhua's rock salt is still mined today by villagers working without mechanized tools. The methods and organization of modern extraction at Huarhua may therefore provide some insights into how Andean rock salt mines could have been mined, managed, and

controlled in antiquity.

Jennings, Thomas (Texas A&M University) and Ashley Smallwood (Texas A&M University- Center for the Study of the First Americans)

[155] *An Analysis of Clovis Site Types and Occupation Patterns: Exploring Homogeneity and Variability within Clovis Settlement*

Clovis was traditionally defined by a shared suite of technological traits, but new evidence suggests some variation within Clovis technology. This variability raises the question, was Clovis a homogenous continental-wide adaptation? Should we expect consistency in settlement patterns, or do site size and function vary regionally? This paper compares Clovis sites in North America to evaluate whether occupation patterns are consistent or variable across space. We use site area, inter-cluster distance, and artifact assemblages to infer site function and compare and contrast settlement strategies within and between regions.

[155] *First Chair*

Jennings, Thomas [120] see Smallwood, Ashley M.

Jensen, Anne (UIC Science LLC)

[159] *Where Great Whales Come Sailing By: Whaling Captains' Footprints on Alaska's North Slope*

Whaling has long been the organizing focus of coastal North Slope Iñupiat culture. Many scholars believe that whaling was important in Thule culture prior to the Thule migration, although it has been difficult to confirm this. This paper examines the material correlates of whaling at sites where whaling is known to have taken place. It is suggested that little evidence of whaling is to be found in house interiors, which have received most archaeological effort to date. Rather, whaling-specific material culture tends to be found outside the houses proper, in some cases associated with women's activity areas.

Jerardino, Antonieta (ICREA/University of Barcelona)

[253] *Integrating hunter-gatherer resource intensification and feasting along the West Coast of South Africa*
Megamiddens dating to between 3000 and 2000 BP along the South African West Coast are interpreted within a resource intensification framework. Most protein consumed by foragers during this millennium derived from marine resources according to isotopic evidence. Raising population densities and signs of impact on local fauna between 3500 and 2500 BP are concomitant with growth stunting among coastal foragers. A later decline in environmental productivity between 2500 and 2000 BP coincides with an increase in interpersonal violence. Feasting and/or intensified ritual at nearby Steenbokfontein Cave were probably developed as a coping mechanisms to mediate social and ecological stress.

Jerrems, William (Independent)

[231] *Testing the Clovis paradigm: fishing and hunting at the end of the Younger Dryas*

It has been thought that Pleistocene megafaunal extinctions occurred prior to the peopling of the Great Basin. Few unequivocal associations of extinct fauna and human activity have been dated to Clovis times (11.3-11.0 kya). Challenging this, evidence from shores of

Pyramid Lake, Nevada, suggests the persistence of extinct mammoth to 10.3 kya (terminal Younger Dryas) and human utilization of fresh bone, ivory and antler for tool manufacture. This paper reviews the evidence of fishing and hunting along the receding shoreline of Pyramid Lake and the refugium that this area offered for the late survival of mammoth.

Jeske, Robert (University of Wisconsin Milwaukee)

[141] *Red Ochre Mortuary Sites in Southeastern Wisconsin*

Red Ocher is a poorly understood and vaguely defined archaeological concept relating to burial sites scattered across the south and west Lake Michigan drainage. Although generally accepted as Late Archaic in age, there are few data to support chronology or most other aspects of Red Ocher sites from southern Wisconsin, northern Illinois, or northern Indiana. The concept of Red Ocher is reviewed using new data from several recently excavated and newly analyzed sites in southern Wisconsin. Biological, material culture and spatial data are summarized to provide a tentative framework for placing these burials into a cultural context.

Jessome, Kenzie [96] see Merchant, Peter S

Jimenez, Melania [193] see Jaime-Riveron, Olaf

Jiménez Betts, Peter [237] see Perez, Ventura R.

Jimenez-Rueda, Jairo Roberto [68] see Silva, Rosicler T.

Jochim, Michael (Univ of Cal - Santa Barbara) [123]
Discussant

Johannesson, Erik (UNC Chapel Hill)

[54] *Identity, Death, and Commemoration: An Analysis of Xiongnu Mortuary Practice*

This paper examines aspects of mortuary practice against the backdrop of the first nomadic polity in Mongolia, the Xiongnu (ca 200 BCE-200 CE). Mortuary contexts provide invaluable opportunities to assess identity formation and ideologies on display in funerary ritual. Here is discussed how political centralization can be discerned through the treatment in death of various age categories and how these in turn can reveal information about the perception of personhood in the past.

Johansen, Peter (University of British Columbia)

[189] *Forging Social Relations, Producing Metals: Investigating Scale and Context in the Socio-material Landscape of Iron/Steel Production in Iron Age Karnataka*

Mortuary evidence from the South Indian Iron Age (1200-300 BC) documents the materiality of iron and steel objects in the expression of social differences in death ritual. Yet far less is known about the social relations of metallurgical production itself. Here I consider ferrous metallurgy a technologically sophisticated package of land-use practices that produce a range of material objects, social relationships, and dynamic, multi-scalar, socio-material landscapes. This paper investigates the political materiality of landscapes of metallurgical production in Northern Karnataka and the consequences

of its potential vectors of differential access to places, people and things on Iron Age social life.

[189] *First Chair* [189] *Second Organizer*

Johansen, Trine Bjørneboe (UC Davis)

[180] *Snares, nets and stone traps: Increasing foraging efficiency for small game at Iita, Northwest Greenland*

The utilization of snares, nets and stone traps made small animals valuable additions in the subsistence strategy of the Inughuit at the site of Iita, Northwest Greenland. Small game such as arctic fox (*Vulpes lagopus*), arctic hare (*Lepus arcticus*) and dovekies (*Alle alle*) dominate the 24,743 faunal remains excavated at Iita. Although foraging efficiency is often measured in terms of body size this paper suggests that capturing techniques should be considered equally when discussing optimization of resources and that the presence of small animals caught in snares, nets, and stone traps may indicate an overall increase in hunting efficiency independent of prey size.

Johnson, C. (Bureau of Land Management)

[239] *The Long-Lost Coast: Searching for Evidence of Early Coastal Migration in the King Range National Conservation Area*

The long-held "Ice-Free Corridor" theory for the initial peopling of the Americas has been challenged by a number of researchers posing a "Coastal Migration" model. Testing this concept is proving difficult however, due to the fact that most terrestrial coastal settings of the Late Pleistocene are inundated by higher sea levels resulting from large-scale glacial melting. Recent GIS modeling indicates only one region with tectonic uplift rates that exceed the rise of post-glacial sea levels. This paper reports on current efforts to locate, map, and test remnant marine terraces in search of evidence of coastal migration along California's Lost Coast.

[239] *First Chair*

Johnson, Danette [158] see Gaskell, Sandra

Johnson, Donald (McGill University), James Savelle (McGill University) and Arthur Dyke (Geological Survey of Canada)

[159] *Pioneering Thule Inuit on Somerset Island: Implications for Thule Development*

'Pioneering' period Thule sites (ca. A.D. 1200-1300) have been reported on northwest Ellesmere Island and northeastern Greenland, but the route by which these groups may have entered the eastern Canadian Arctic from the Bering Strait region has never been addressed, due to lack of data. Recent excavations on southeast Somerset Island at an apparent 'Pioneering' Thule site suggest that these earliest groups followed a southern Arctic mainland coast/Boothia Peninsula/Somerset Island route. The implications of this research are addressed, and suggest that many more 'Pioneering' Thule sites in the southern Arctic mainland coast/islands are yet to be discovered and investigated.

Johnson, Eileen [66] see Puseman, Kathryn

Johnson, Erlend (Tulane)

[31] *Entrance Structures and Their Uses and Meanings: a look at Entrance Structures from Three Sites in the Southeastern Mesoamerican Area*

Low ranged, structures were built at the site's main entrance at several sites in the Southeast Mesoamerican area. These entrance structures are unique to the area and provide important insights into elite management of public areas. This poster uses three examples of these structures from El Cafetal, El Coyote and El Puente. Entrance structures controlled the access of people to these sites and were stages for public activities like feasting. Through activities such as the burial of ancestors within these structures elites symbolically and physically claimed control over access to and public ritual.

Johnson, Jerald (CSU, Sacramento)

[77] *Ishi In Retrospect From An Archaeological Perspective*

This presentation will emphasize the many discrepancies between the published literature and the archaeological record. It will also explore why the Yahi were so culturally conservative and had such a small population. Were these people really as uncontaminated by White culture as Alfred Kroeber had hoped or were they on the way to acculturation? Also how did Edward Sapir manage to obtain so much information from Ishi before he died? Finally when will the Sapir notebooks be published since they were missing for almost 70 years and only resurfaced in 1985?

[256] *Discussant*

Johnson, John (Santa Barbara Museum of Natural History), Joseph Lorenz (Central Washington University), Ripan Malhi (University of Illinois Urbana-Champaign), Tracey Pierre (University of Copenhagen) and Eske Willerslev (University of Copenhagen)

[11] *A Land of Diversity*

Native California has long been recognized for its great degree of linguistic diversity. The multiplicity of languages derived from past migrations into the region and cultural adaptation to a diverse range of ecological types. Reconstructing the record of ancient migrations has been approached through techniques of linguistic prehistory, archaeology, oral tradition, morphometric measurements of skeletal anatomy, and most recently by DNA studies. Specific mitochondrial DNA lineages have been shown to correlate with ethnolinguistic groupings, shedding light on the origins of the diverse peoples that inhabited the California region at the time of European contact.

[151] *Discussant*

Johnson, Kent (SHESC / Arizona State University), Kristin Nado (Arizona State University) and Paul Goldstein (University of California, San Diego)

[233] *A Reevaluation of the Dual Diaspora Model of Tiwanaku Organization in the Moquegua Valley, Peru using Odontometric and Cranial Nonmetric Data*
Tiwanaku enclave communities in the Moquegua Valley of southern Peru were composed of two distinct groups: Omo-style and Chen Chen-style Tiwanaku populations. While archaeological data from the Río Muerto site complex indicate that cultural boundaries between the groups were fluid, previous biodistance studies have generated contradictory interpretations of biological interactions between these populations. The present study uses two morphological proxies of genetic

relatedness (odontometric and cranial nonmetric traits) from skeletal samples from Omo-style and Chen Chen-style sites at Río Muerto to calculate biological distances that better represent underlying genotypes and provide greater resolution of the biological interactions between these populations.

Johnson, Laura (Pacific Lutheran University) and Bradford Andrews (Pacific Lutheran University)

[190] *Expedient Flaked Stone Tools at a Mayan Center: Analysis of a Lithic Collection from Baking Pot, Belize*
Little research has been done on stone tools from the site of Baking Pot, a prominent Mayan center in Belize. Baking Pot was primarily occupied during the Late Classic period. This paper examines how the availability of local chert conditioned the types of tools being produced. In particular, the collections contain many informal tools, including utilized flakes, partially utilized cores, choppers, and hammerstone cores. The numerous informal tools support the idea that raw material availability can affect the nature of flaked stone technologies. These data provide valuable comparative information on flaked stone technology in the Belize River Valley.

Johnson, Phillip (Texas A&M University) and Eric J. Bartelink (California State University, Chico)

[255] *Prehistoric Marine and Terrestrial Resource Consumption in West Polynesia: Isotopic Evidence from Tutuila Island, Amerika Samoa*

The relative dietary importance of marine versus terrestrial resources has been the focus of several recent subsistence studies of ancient Polynesians. This study examines stable carbon and nitrogen isotopes in 32 radiocarbon dated burials from Tutuila, American Samoa (ca. 1600-100 B.P.). Additionally, we provide a partial food web reconstruction through stable isotope analysis of archaeofaunal remains and modern faunal and plant remains. We tested the hypothesis that marine protein consumption declined through time concomitant with increased use of terrestrial domesticates, and discuss the implications of our findings in light of current archaeological subsistence models for West Polynesia.

Johnson, Phillip [35] see Riley, Timothy E.

Johnson, Sarah [232] see Springer, Chris L. M.

Johnson, Scott (Tulane University)

[221] *Yaxuna to Chichen Itza: Using Small Sites to Look at Big Problems*

It is clear that Chichen Itza rose to power in the Late and Terminal Classic periods. Many of the data used to reconstruct past political, social, and regional histories have come from large sites, such as Yaxuna, Ek Balam, Coba, Uxmal, and Chichen Itza itself. Only a handful of small sites have been examined for evidence of this regional power shift. This presentation will outline the work and research paradigms used at small sites, emphasizing the work at Popola, Yucatan, and how it relates to the question of Chichen Itza's rise.

[221] *First Chair*

Johnson, William [181] see Gaines, Edmund P.

Johnstone, Dave (Humboldt State University)

[228] *The Middle Formative Ceramics from the Cochuah Region*

Nearly half of the sites excavated within the CRAS study area have yielded some sherds dating to the Middle Formative period. However, no primary deposits containing pure Middle Formative ceramics have been encountered. All Middle Formative ceramics were recovered from construction fill associated with later occupation. While the collection has some superficial resemblances to the Mamom ceramic sphere, the differences suggest that we have a separate ceramic sphere for the Northern Yucatan during the Middle Formative.

Jolie, Edward (University of New Mexico)

[188] *A Perishables Perspective on Falls Creek and the Basketmaker II World*

Perishable artifacts were an integral component of Basketmaker II burial assemblages at the Falls Creek Rock Shelters. The associated perishable artifact inventory, including coiled baskets, prepared hides, human hair cordage, braided sashes, and twined blankets, bags, aprons, and mats, provides a unique glimpse into the social lives and funerary practices of early agriculturalists at the eastern edge of Colorado Plateau. This presentation describes the style and technology of these artifacts and interprets them in light of perishable assemblages from other regions of the Basketmaker II world.

[78] *Discussant [188]* see Webster, Laurie

Jones, A [20] *Discussant*

Jones, Alexandra (University of California, Berkeley)

[268] *Discussant*

Jones, Brian (UMass, Amherst)

[2] *A Social Network Analysis Approach to Henrich's Model of Biased Skill Transmission: Implications for the MSA – LSA Transition*

Social Network Analysis provides an appropriate modeling environment for exploring the dynamics of learning among socially interconnected groups. Henrich's 2004 model of biased information transmission is applied to the development of behavioral modernity in Africa during the Middle Stone Age. As between-group links increase between small-scale social networks, complex information is more effectively stored and transmitted throughout the population. Rather than particular technological innovations or cognitive changes, the development of a pattern of behavior promoting between-group social interaction may mark the dawn of behavioral modernity among humans.

Jones, Catherine (University of Wisconsin-Milwaukee)

[142] *A Pilot Study of the Application of Energy Dispersive X-Ray Fluorescence to the Identification of Individual Human Remains*

This paper presents the results of a pilot study to determine the feasibility of applying energy dispersive x-ray fluorescence spectroscopy to the analysis of human bone. The aim of this study was to identify a discrete elemental signature that could provide a diagnostic tool for separating the remains of one individual from another. X-ray fluorescence spectroscopy is a powerful, portable

tool for nondestructive elemental analysis, and its use in the determination of an elemental signature would establish a new diagnostic tool that could be effectively used in archaeological cases of commingled remains, especially those which are large scale or fragmentary.

Jones, Daniel [258] *see Silverstein, Jay E.*

Jones, Deanna (CSU Northridge) and Anabel Ford (UCSB)

[238] *Mismanagement or Misrepresentation: Implications of Botanical and Faunal Data from the Maya Forest* Current notions of environmental interaction by the ancient Maya suggest grave mismanagement. Ford (2008) has studied the interaction between the Maya and their landscape by analyzing archaeological and paleoenvironmental data. Ford argues that paleoenvironmental reconstructions commonly used to study the Maya rely solely on wind pollen, which does not account for over 90% of the biotically pollinated fruit and hardwoods. The lack of complete information results in misrepresentations of the Maya, and deserves more attention. The focus of this presentation will be to test Ford's hypothesis by evaluating flora and fauna from archaeological sites in the Maya area.

Jones, Emily (Utah State University), Tod Hildebrandt (Utah State University), Ryan Breslawski (Utah State University) and Elizabeth Seymour (Utah State University)

[177] *The Idaho Archaeofaunal Database* This poster describes the Idaho Archaeofaunal Database project. The Idaho Archaeofaunal Database is a GIS-linked searchable database of vertebrate animal remains from archaeological sites in Idaho. Users can search for specific species of animals; search results consist of a map highlighting sections of Idaho that include archaeological sites containing that taxon. The project is designed to serve both wildlife managers, who can use the database for information on the historic ranges of vertebrate species as reflected by their presence in archaeological sites, and zooarchaeologists, as part of larger projects in the state of Idaho.

Jones, Eric (Wake Forest University)

[55] *Building Swidden Agricultural Settlement Theory: Comparing the Late Woodland Northeast and Southeast* Fifteen years ago, Glenn Davis Stone stated, "it is not even clear what an agrarian settlement theory should look like". This was and still is strikingly true for swidden agriculture in temperate climates. Several swidden agricultural societies thrived in the Eastern Woodlands from AD 1000–1600. Studying their settlement remains and reconstructed landscapes allows us to build settlement theory for this subsistence strategy. This research analyzed the spatial patterning of Haudenosaunee sites and sites in the North Carolina Piedmont in relation to environmental and sociopolitical factors. The results suggest that defensibility, transportation, and agricultural production influenced settlement choice decisions.

[55] *First Chair*

Jones, Gary (California State University, Fullerton) and Steven R. James (California State University at Fullerton)

[263] *The Ninth Channel Island: Archaeological Investigations and Historical Ecology at Abalone Cove on the Palos Verdes Peninsula in Southern Coastal California*

Archaeological investigations on the California Channel Islands and adjacent mainland coastal sites are providing significant information for understanding ancient human impacts on marine and terrestrial fauna, which can be used for interpreting the historical ecology of these past ecosystems. Through a partnership with the Palos Verdes Peninsula Land Conservancy, field classes from California State University at Fullerton conducted archaeological surveys and test excavations at Abalone Cove on the Palos Verdes Peninsula during the past four years. Results of the research are presented and comparisons are made with other coastal and island sites.

Jones, George (Hamilton College) and Charlotte Beck (Hamilton College)

[262] *A Paleoarchaic Surface Record from Coal Valley, Nevada*

In 2007, exploratory reconnaissance of Paleoarchaic sites in Coal Valley, Nevada, was conducted to recover stone artifacts for source provenance analysis. We investigated three assemblages, each of which contains diagnostic tools including fluted and unfluted lanceolates, stemmed points, and crescents. Among the former is an example that compares favorably with western Clovis, while others have gracile features. The crescent sample, though small, exhibits the full range of morphological variation seen in the tool class. Source characterization of obsidian and dacite artifacts points to a strong local provenance signal. We consider these assemblages in light of questions regarding tool morphology variation, assemblage function, and Paleoarchaic mobility.

Jones, George [22] *see Goodale, Nathan B. [94]* *see Beck, Charlotte*

Jones, John G. (Washington State University), Nicholas Dunning (University of Cincinnati) and David Lentz (University of Cincinnati)

[119] *Typha Tales: Paleoenvironmental Analysis of Two Tikal Aguadas*

Peripheral areas of Tikal were heavily occupied and utilized, particularly in the Bajo de Santa Fe area, east of the site center. Numerous aguadas were employed by the site inhabitants reflecting this intense exploitation. Sediments in these wetlands are generally undisturbed following site decline and abandonment, leaving excellent pollen records of past environmental conditions. Examination of two of these sequences, Aguada Terminos and Aguada Vaca de Monte reveals a fairly detailed agricultural and silvicultural record. Ancient agriculture, site abandonment, reforestation and site re-use are apparent in these records.

Jones, John G. [46] *see Holstad, Emily [88]* *see Drake, Douglas H. [119]* *see Dunning, Nicholas P. [88]* *see Kennett, Douglas J.*

Jones, Kevin (State Archaeologist, Utah) [91] *Discussant*

Jones, Robert [201] *see Dungan, Katherine A. [52]* *see*

Clark, Jeffery J.

Jones, Terry (Cal Poly San Luis Obispo) and Al Schwitalla (Garcia and Associates, Inc.)

[11] *A Land of Many Seasons: Bioarchaeological Signatures of the Medieval Climatic Anomaly in central California*

Data from 16,152 central California skeletons show strong evidence for demographic stress during the Medieval Climatic Anomaly (cal A.D. 800-1350), a period marked by prolonged and severe droughts. Cultural phases that bracket the Medieval Climatic Anomaly show frequencies of enamel hypoplasia and dental caries higher than any other pre-contact period. Phases synchronous with the Late Medieval Climatic Anomaly (cal A.D. 1210-1390) show pre-contact apices in dental caries, signs of disease, and violence. Evidence of anemia is high for the late MCA although it increased afterwards. Findings suggest that unforeseen climatic downturns caused problems for California hunter-gatherers.

Jones, Terry [11] see Klar, Kathryn A.

Jones, Timothy (Contemporary Archaeology)

[197] *An Overview: 30 Years of Applied Activist Archaeology*

Contemporary archaeology, the use of archaeological principals and techniques to address current problems and issues, has been in use for at least three decades. The theoretical foundations and justifications were provided nearly two decades ago. This presentation will cover a host of applied applications including those related to food systems, supply and manufacturing systems, waste disposal systems, alternative energy production, mining exploration and others.

Jordan, Aaron [150] see Nelson, Shaun R.

Jordan, Alexis (University of Wisconsin-Milwaukee)

[42] *A Preliminary Study of Iron Age Glass in Ireland*
The study of beads in archaeological contexts is a significant part of the reconstruction of material culture. As portable pieces that serve as stylistic, temporal, and social markers, beads reflect patterns of interaction and communication. In the Irish Iron Age, the systematic study of artifact types has begun to clarify dating and cultural contact questions. Glass objects, most commonly beads, appear in multiple contexts across Ireland but have only been summarily discussed. Therefore, a comprehensive database of sites containing Iron Age glass was created to establish a preliminary set of observations regarding the characteristics and variability of the glass objects.

[42] *First Chair*

Jordan, James [263] see Anderson, Shelby L. R.

Jordan, Kurt (Cornell University)

[55] *Life in Wartime: Local Adversity at the Seneca Iroquois White Springs Site, circa 1688-1715*

Research on Postcolumbian Seneca Iroquois sites illustrates that political-economic conditions (especially the local military setting) played a crucial role in guiding decisions about the course of daily labor, community and house construction, resource choices, and settlement

ecology. Since 2007, archaeologists from Cornell University and Ithaca College have investigated the 1688-1715 White Springs site. This paper reviews the results of the project, detailing life in a Seneca community founded after French invasion and occupied in a time of war and uncertainty. While overall conditions were adverse, Senecas remained politically autonomous, maintained significant inter-regional connections, and experimented socially and materially.

[55] see Rogers, Michael

Jordan, Stacey (AECOM)

[50] *"The Trail is Not a Trail": cultural resources inventories in the BLM National Historic Trails project*
America's National Historic Trails are congressionally designated routes echoing the major overland travels of the historic period that shaped what is now the western United States. As drawn, these routes illustrate the flow of goods and people through the region, however their traces on the ground may differ vastly from the solid black lines mapping their paths. As shown by this project, the trail is a concept – manageable nonetheless – that includes physical traces of a trail, its setting, and the context provided by associated archaeological resources.

[50] *First Chair*

Jorgensen, Mia (University at Buffalo)

[243] *Resuming the Past: Revisiting Ceramic Materials from Millon, Drewitt, and Bennyhoff's 1959 Investigations of the Pyramid of the Sun*

The reanalysis of ceramics from the Pyramid of the Sun is based on the archaeological investigations of René Millon, Bruce Drewitt, and James Bennyhoff held at the University at Buffalo and published in an 1965 report in Transactions of the Philosophical Society volume 55 Part 6. The reanalysis intends to examine vessel fragments in an effort to further clarify the relationship between the Pyramid of the Sun and Plaza One situated within the site of Teotihuacán in San Juan, México. The implications of the study could reveal relatedness relative to chronology, vessel style, form, and fabric.

Jorgenson, Gina (UC Davis, BLM), Jelmer Eerkens (University of California, Davis) and Gry Barfod (University of California, Davis)

[194] *A Bioarchaeological Investigation of Migration and Social Organization in the Prehistoric California Delta*

The analysis of strontium isotope ratios ($^{86}\text{Sr}/^{87}\text{Sr}$) in human teeth and bone can be used to answer increasingly complex questions about past human behavior. By focusing on individuals, detailed and specific analysis of migration, social organization, and group composition can be examined. This paper presents an analysis of $^{86}\text{Sr}/^{87}\text{Sr}$ in human teeth and bone samples from the recently excavated population at CA-CCO-548 (the Marsh Creek Site). This Windmill site is providing an important opportunity to investigate how social organization is influenced by the interrelated processes of resource intensification and sedentism in California.

Joslin, Terry (University of California, Santa Barbara)

[263] *Historical Ecology and Human Adaptations to Coastal Ecosystems along the Southern San Simeon Reef Region, California*

Archaeological and ecological data from central

California Coast midden sites spanning the Middle to Late Holocene provide a unique perspective into marine subsistence and the dynamic nature of human-environmental interactions. The research presented in this paper suggests that intertidal resource communities remained relatively stable over time, perhaps the result of low population densities dispersed across the region. Small near-shore marine fish and rocky intertidal shellfish appear to have largely supported human occupation over 5,000 years without diminishing littoral productivity, demonstrating the considerable adaptive variability of coastal hunter-gatherer-fishers.

Jousse, Hélène [133] see *Sereno, Paul C*

Joyce, Arthur (University of Colorado at Boulder)

[24] *Social and Material Transformations of Monte Albán's Main Plaza after the Classic-Period Collapse*
This paper considers Postclassic (A.D. 800-1521) material and symbolic transformations of Monte Albán's Main Plaza. I argue that Early Postclassic ritual deposits reflect the historical rupture of the time as commoners reclaimed the sacred rites of the Main Plaza, nobles removed the remains of their ancestors, and large portions of the plaza were abandoned and erased from memory. By the Late Postclassic the history of Monte Albán's sacred ruins was reinvented for the ideological purposes of a new noble class as the Main Plaza became a place where elite ancestors participated with gods in the creation of the current world.

Joyce, Arthur [5] see *Brzezinski, Jeffrey S. [182]* see *Urcid, Javier*

Joyce, Rosemary (University California Berkeley)

[122] *Generic archaeology: Changing the packaging, or changing the product?*

I have argued that archaeologists engage in the reproduction of what Bakhtin called genres, "form-shaping ideologies" that "convey a vision of the world...by developing concrete examples". I would now argue that the many innovative experiments consciously intended to change the nature of archaeological communication have not transformed the basic genres in which they are embedded. The generic uniformity of archaeology surely can be changed, but not by slight modifications in the packaging. What we need is to rethink the product itself. I illustrate my argument with discussion of a work in progress that does not conform to existing archaeological genres.

[16] *Discussant*

Juarez, Santiago (Northwestern University)

[212] *Community Practices at the Periphery: Household Settlement Patterns near Lake Mensabak in Chiapas, Mexico.*

Modern agricultural fields were surveyed for Maya archaeological sites near Lake Mensabak in Chiapas, Mexico. Three fields revealed evidence of a complex and well organized settlement patterns, in which households were rigidly organized according to a Northwest axis. Such organization exhibits community practices that guided the distribution of land and its resources. With an emphasis on community, my research concentrates on the macro-level processes that brought households together. This research also represents a new direction

in which the Late to Terminal Classic period is treated as the emergent period of settlement.

Judd, Margaret (University of Pittsburgh)

[152] *REMEMBRANCE, RELICS AND RECOVERY AT MOUNT NEBO, JORDAN*

Mount Nebo, the largest and hypothetically most cosmopolitan monastery in Byzantine Jordan, provides an opportunity to understand the structuring of the human death course among individuals united by monastic culture. The collective burials within the Robebus Chapel (A.D.530) blurred the individual biological identities, thus necessitating the method and theory of 'anthropologie de terrain' to disarticulate the individual from the community in order to rearticulate the experienced life and funerary deposition. Disparities in placement, processing and selective remembrance suggest that some individuals were venerated in death, yet retained their communal identity.

Juengst, Sara (UNC-CH) and Sergio Chavez (Central Michigan University)

[233] *After the Fall: Trauma and Labor in the Late Intermediate Period at Ch'isi*

The Late Intermediate Period (AD1000-1450) in the Lake Titicaca region was a time of decentralization and chaotic political fluctuations. The collapse of both Tiwanaku and Wari at the end of the Middle Horizon left the political sphere open to new powers and influences, causing abandonment of sites and shifting social conditions. The Late Intermediate Period burials at Ch'isi, a Lake Titicaca temple site occupied from Yayamama times onward, reflect this cultural revolution through the pathology and trauma seen on these skeletal remains. The tumultuous political changes are directly visible on these bodies themselves.

Julien, Catherine (History, Western Michigan University) [15] *Discussant*

Julien, Marie-Anne (University of Tubingen), Helene Martin (INRAP - UMR 5608), Herve Bocherens (University of Tubingen) and Ariane Burke (University of Montreal)

[205] *Bison procurement in the southern steppes of Eastern Europe: zooarchaeological, incremental and biogeochemical approaches*

During the Upper Paleolithic, bison is well represented in faunal assemblages in the southern steppes of Eastern Europe, and Paleolithic economies are considered to "specialize" in bison hunting. Located in south-eastern Ukraine, Amvrosievka is a complex of Epigravettian sites - including a camp and a kill/processing site - particularly rich in bison remains. In this paper we present the results of a seasonality study based on the combined use of zooarchaeological tools, incremental study and stable isotope analysis of the bison remains from Amvrosievka. The results enable us to evaluate the advantages and disadvantages of the different methods.

Julio-Miranda, Patricia [67] see *Lelgemann, Achim*

Kagawa, Aurora [261] see *Vitousek, Peter*

Kahn, Jennifer (Bishop Museum)

[261] *Elite Access to Resources and Labor: Late*

Prehistoric Residential Complexes in Coastal Kohala, Hawai'i

Excavations at two elite residential complexes in Leeward Kohala indicate multiple phases of site occupation in later prehistory and the presence of activity areas. Elite access to marine and terrestrial resources, craft specialization, and labor allocation are highlighted in the assemblage analyses. Results of the fishbone identifications are discussed in relation to fishing gear and profuse shell midden. The size and frequency of the shell and faunal remains are indicative of access to high status foods. Geochemical analyses of basalt artifacts illustrate the extent to which local versus imported exotic raw materials were used in adze production.

[261] see McCoy, Mark D. [261] see Mills, Peter R.

Kahotea, Des (University of Waikato)

[197] *The Margin of Archaeology*

When individual archaeologists use the field of archaeology for cultural and political activist purposes such as Maori land claims and seeking the protection of significant heritage this is condoned by the archaeological community who view archaeology is to be used for science not political activism. This stance is also to protect their institutional power and role they have as the authority for archaeology which is in the main Maori heritage. This paper examines the dilemma faced by individuals who use their archaeological training, knowledge and professionalism for community advocacy roles.

[252] *Discussant*

Kaiser, Bruce [267] see Rademaker, Kurt M.

Kaiser, Jessica (University of California, Berkeley)

[152] *The Wall of the Crow Cemetery in Giza, Egypt: Remembering the Children*

This paper will give a brief overview of the non-elite Saite and Roman period Wall of the Crow Cemetery in Giza, but will mainly concentrate on the differential patterns of child-burials in the Saite material, which diverge from those of adults not only in terms of spatial arrangement within the cemetery, but also in terms of the amount and type of burial goods and bodily treatment they received. Possible explanations for this discrepancy and the reasoning behind the specific choice of placement within the cemetery (at a locale that is still today associated with pregnancy and childbirth) will be discussed.

Kakaliouras, Ann (Whittier College) [217] Discussant

Kakos, Peter (Navajo Nation-HPD)

[158] *Rock Art: A Lost Language of Meaning, Myth, and Symbols*

Rock Art: A Lost Language of Meaning, Myth, and Symbols Ethnographic inquiry into the aboriginal use of symbols, stories and myths often provides no clue to understanding or decipherment in most cases. But if Rock Art incorporates a structure of mythos into its matrix using symbols with apparent meaning, how then is one to proceed in its study and how does archaeology address this, and what underlies the true meaning of Rock Art? Even when close ethnographic links between Rock Art and culture can be demonstrated,

Kakoulli, Ioanna (Materials Science & Engineering

Dept. UCLA), Sergey Prikhodko (University of California, Los Angeles), Christian Fischer (University of California, Los Angeles), Sirine Fakra (Advanced Light Source, Lawrence Berkeley National Laboratory) and Matthew Marcus (Advanced Light Source, Lawrence Berkeley National Laboratory)

[220] *CSI archaeology: 'The Andean Mummy Case'. An omnidisciplinary approach intergrading field, laboratory and synchrotron radiation methods*

This research describes the application of portable X-ray fluorescence (pXRF) and Variable Pressure Scanning Electron Microscopy (VPSEM) coupled with Energy Dispersive X-ray spectroscopy (EDS) combined with synchrotron radiation X-ray and infrared microspectroscopies (SR-microXAS and SR-microFTIR) for the study of Pre-Columbian human scalp hair. Results indicated acute arsenicism most likely caused by drinking arsenic contaminated water and through diet. Our approach was able to discriminate from exogenous contamination and diagenetic processes.

[220] *First Chair*

Kaldahl, Eric (Amerind Foundation, Inc)

[139] *The Tohono O'odham Nation Museum: One Native Nation's Presentation of their People and their Land*

The Tohono O'odham Nation built a museum between 2001 and 2007. The museum featured nine exhibitions that told their people's story. The museum's primary audience is the Nation's 28,000 tribal members, particularly their youth. The exhibition content was decided in community meetings. The O'odham relationship to their land was crucial to the exhibitions. Their relationship to the archaeological landscape was not deemed worthy of much exhibition space. The stories that archaeological research might tell were also not of much interest. Instead the relationship between the O'odham and their homeland was explored via community history, story, song, and lived experience.

Kaldenberg, Russell (ASM Affiliates)

[230] *Honoring the Life and Times of C. William Clewlow, Jr., Iconic Archaeologist of the Great Basin and Far Southwest*

C. William "Billy" Clewlow, Jr. has placed his incontrovertible stamp on the anthropology and archaeology of the Great Basin and the Far Southwest for over forty years. From his early days at UC Berkeley, where he was mentored by Robert Heizer and pioneered studies of Native American rock art to his days in the 1960s protest movements, his flings as a contract archaeologist, professor, story-teller, prolific writer, rock and roll artist and visionary and bullfighter. Billy is a living legacy to generations of archaeologists. Among his noteworthy accomplishments include a long list of publications from seminal papers on early humans in the Great Basin to recent papers on ethnohistoric rock art and aboriginal trails. This paper attempts to summarize some of his long lasting accomplishments and help recognize his place as a creative contributor to archaeological studies and one of the founders of cultural resource management.

[230] *Second Organizer [230] First Chair*

Kalosky, Ethan (University of New Mexico) and Keith Prufer (University of New Mexico)

[40] *Settlement and Ecology at the Classic period Maya*

center of Uxbenka'

Studies of settlement dynamics in the Maya Lowland traditionally focused on the development of social complexity and institutionalized hierarchy. Agencies responsible for these patterns are frequently ignored. Drawn from Human Behavioral Ecology, The Ideal Free Distribution provides an empirical framework to investigate household decision making strategies over time, placing agents at the forefront of analysis. Using the Classic period polity of Uxbenka as a case study, we examine the distribution of non-elite settlement in relation to ecological and social variables. The results suggest that household level decision making, rather than political constraints, are at least partly responsible for settlement patterning.

Kamiya, Masahiro (Texas A&M University) and Laura Short (Texas A&M University)

[162] Effects of Post-Excavation Conditions on Infrared Spectroscopy

Infrared Spectroscopy is a well-established method for chemical residue analysis that identifies molecular bonds but only in the last few decades has it been applied to archaeology. This poster presents preliminary studies in the applicability of Fourier-Transformed Infrared Spectroscopy (FTIR) and Raman Spectroscopy to archaeology—the effects of potential contaminants on artifacts post-excavation. This study replicates the environments an artifact may experience in short term storage and transportation from the field into the laboratory. Modern ceramic “artifacts” were spiked with organics, stored in plastic and paper bags, and left in a variety of indoor and outdoor conditions for a week.

Kamiya, Masahiro [35] see Thoms, Alston V.

Kang, Bong (Gyeongju University)

[149] A Social Reconstruction of the Korean Bronze Age: Based on the Dolmens Discovered in the Southeastern Korea

Dolmens are considered one of the principal mortuary programs in the Korean Bronze Age. Some scholars became interested in a social reconstruction and they have asserted that Korean dolmen society reached chiefdom. This issue has been one of the hottest research topics among Korean and foreign archaeologists. A number of Korean scholars have taken it for granted that Korean dolmen society reached a centralized political organization. This paper based on the analyses of spatial distribution of dolmen and artifacts recovered from the burials argues that the dolmen society in the southeastern part of Korean peninsula remained egalitarian.

Kangas, James [83] see Slaughter, Mark C.

Kannady, John [257] see Noll, Christopher D.

Kansa, Eric (UC Berkeley, School of Information)

[216] Effective Use of the Web to Support Archaeological Research

The World Wide Web represents one of the most profound developments in information sharing since the origins of writing. In the past 15 years, it has radically transformed scholarly communications and research. New NSF data access and management policies further

highlight the growing importance of the Web. However, because the Web is still new, archaeologists need guidance using it effectively. This paper will discuss basic principles of Web architecture, design, services, interoperability and longevity. Examples from Open Context and related projects provide practical guidance for researchers in using the Web as a platform to publish field data.

[144] Discussant [144] Second Organizer

Kansa, Eric [216] see Kansa, Sarah W.

Kansa, Sarah (AAI / Open Context), Levent Atici (University of Nevada, Las Vegas), Justin Lev-Tov (Statistical Research, Inc.) and Eric Kansa (UC Berkeley)

[216] Other People's Data: Blind Analysis and Report Writing as a Demonstration of the Imperative of Data Publication

Scholars increasingly rely on digital formats for their research. While sharing PDFs of published syntheses has become commonplace, researchers tend not to share raw data, meaning that others cannot access the primary content for reexamination or reuse. Thus, though web publication of data is increasingly easy to accomplish, many scholars have yet to realize the rewards of sharing their primary data. We present results of blind analysis and report-writing by three zooarchaeologists on the faunal dataset from Chogha Mish, Iran. Divergent results highlight the importance of publishing original datasets alongside syntheses and providing detailed documentation of datasets and methodologies.

[144] Third Organizer [144] First Chair

Kantor, Loni (Arizona State University)

[36] The Materiality of Huichol Costumbre

Among the Huichol of Jalisco, Mexico, costumbre, or ancestral tradition, is more than a means of maintaining cultural identity, it is necessary for the preservation of the world as a whole. Costumbre is the manner in which Huichol people negotiate with their deities in order to prevent calamitous change and a return to primordial chaos, and it entails the performance of rituals at various places throughout the landscape. In this poster I describe the practice and materiality of Huichol costumbre, and demonstrate its potential to enhance our understanding of the geographic scope and content of ritual activity in ancient contexts.

Kanukova, Maria [108] see Koetje, Todd A.

Kappelman, John [3] see Loewen, Natalia

Kappers, Michiel (QLC), Frederik W. Schnitger (QLC, Amsterdam) and Scott M. Fitzpatrick (NC State University)

[115] Development of an Integrated Database and Geographical Information System for Archaeological Site Recording and Management

The management and recording of data recovered from archaeological sites has benefited tremendously from the development and use of computerized GIS software and more sophisticated forms of data management. Here we present a user friendly database system specifically designed for real-time field processing of archaeological

finds that: 1) utilizes barcode labeling as an inventory tool; 2) does not require a link with third party software; and 3) harnesses the analytical and imagery power of GIS. Case studies from the Netherlands and the Caribbean highlight the effectiveness of this integrated system in both field and laboratory settings.

Kappers, Michiel [163] *see* Casto, Kara I.

Karavanic, Ivor and Fred Smith (Illinois State University)

[218] *Research history and alternative interpretations of the Middle/Upper Paleolithic interface in Croatia*

A short research history of the Middle/Upper Paleolithic transition in Croatia will be presented. Alternative interpretations of transitional evidence from Vindija and Velika Pecina will be discussed from various perspectives (archaeological, paleoanthropological, genetic). New interpretations are relevant for the debate about Neandertal/early modern human relationships in Central Europe.

Kardulias, Paul (College of Wooster)

[6] *The Multi-Component Wansack Site (36ME61): The Prehistoric Longue Durée in Western Pennsylvania*
Straddling the glaciated/unglaciated divide on the border between Ohio and Pennsylvania, the Wansack Site provided an economically viable locus for human occupation from the Early Archaic to the Late Prehistoric period. Four seasons of intensive excavation in the 1970s retrieved a large array of ceramics, lithics, and environmental data. The lithics include a large number of points and scrapers; microwear analysis of the latter reveals hideworking traces. The ceramic assemblage includes fragments of over 40 cord-marked vessels, many with incised rims. Pollen indicates the setting was a deciduous forest; corn pollen was found in one feature.

Karoll, Amy (University of Arkansas)

[258] *Reconsidering the End of the Early Bronze Age in Western Syria*

Based on analysis of materials from Tell Qarqur on the Orontes River in western Syria, this paper presents new insights on the end of the Early Bronze Age (c. 2200-1950 B.C.). Archaeological sites across the region show evidence of abandonment during this period, which some scholars have attributed to climate change. Excavations at Tell Qarqur indicate an urban expansion during the terminal Early Bronze Age with a continuous sequence of occupation well into the 2nd millennium B.C. Results suggest that abandonment of sites may not have been as widespread as previously assumed and force a reconsideration of regional settlement history.

Kartal, Metin [63] *see* Grant, Sarah

Kasper, Kimberly (University of Massachusetts-Amherst) and Kevin McBride (University of Connecticut and the Mashantucket Pequot Museum and Research Center)

[3] *Reconstructing the Cultural Factors of Anthracology: A Case Study of the Mohantic Fort in Southeastern New England*

In the last two decades, the study of wood charcoal (anthracology) emerged as a sub-field to reconstruct paleo-environmental landscapes. More recent

investigations focus on cultural factors associated with the use and management of woodland resources. The late seventeenth century Mohantic Fort, located within the Mashantucket Pequot Reservation, is ideal to analyze those human-environmental dynamics. Methods, such as Minimum Piece Diameter Analysis, explore the presence of wood charcoal in different contexts, such as palisades, midden, and pit features. This data will be compared to eighteenth century Mashantucket sites and create a diachronic study of plant interactions on a changing historical landscape.

Katterman, Grace

[49] *Puruchuco Garments from the Time of the Conquest*
The Puruchuco Cemetery on the outskirts of present day Lima has yielded numerous Late Horizon burials. Two of CIPS textile specialists recently had the privilege of analyzing the garments from the last four mummies recovered there by Dr. Willy Cock. One was male and three were female. Two were extended, Christian style, and two were flexed. While no Spanish features were found in the clothing, the mix of local and Inca garments including the wide striped dress of a Chosen Woman in one of the Christian burials, suggests an intriguing story.

Katz, Sandra (University of Pittsburgh), William Engelbrecht (Buffalo State College) and Kathleen Allen (University of Pittsburgh)

[164] *Hearthside activities at the Eaton Site*
Archaeological research has revealed much about the architecture of Iroquoian longhouses, and how structural features have changed in response to historical events. However, the economic organization of the longhouse remains, by and large, a "black box." This study investigated the distribution of economic activities within a prehistoric Iroquoian village, the 16th century Iroquoian component of the Eaton site. We compared the concentrations of artifacts and faunal remains from indoor and outdoor fire pits at this site, and found that complementary activities took place within and between two houses. Implications for future research on task distribution within Iroquoian villages are explored.

Katz, Sandra [55] *see* Allen, Kathleen M.

Kaufman, Brett (Cotsen Institute of Archaeology, UCLA)

[220] *Metallurgical responses to Deforestation: Alloy sequencing and environmental proxy data from the EBIV-MBII Southern Levant*

Consistent and widespread exploitation of metals throughout the late third and early second millennium BCE by cultures of the Ancient Near East necessitated and increased the fuel requirements for production of these metals, primarily in the form of timber charcoal. Anthropogenic deforestation, in addition to the aridifying landscape caused by the Late Holocene climatic episode (~2300 BCE), led to the mass adoption of tin bronze by humans as a fuel saving mechanism. Investigation of the local alloy progression over an 800 year period (EBIV-MBII) at the site of 'Enot Shuni in the Southern Levant reveals this culture's environmental choices.

Kaufman, David (University of Kansas)

[170] *Orion, Uaxactun, Izapa, and Creation*
Orion is linked with creation and fertility in the mythology

and cosmology of Mesoamerica and North America. This paper explores the possibility that, based on monumental evidence at the site of Uaxactun, Orion and creation are both linked in Mesoamerica with a February nadir, or passage of the sun. This winter nadir, coinciding with the beginning of the annual agrarian cycle, was perhaps more important to ancient Mesoamericans than solstices and equinoxes. The link between the winter nadir and creation is supported by the Popol Vuh and possibly by monumental evidence at the site of Izapa.

Kaufmann, Cristian [177] *see* Gutierrez, Maria A.

Keeler, Dustin (University at Buffalo)

[89] *Archaeological survey of a paleo-shoreline in Northeastern Kamchatka, Russia*

During the 2010 field season a large scale survey was conducted over two months along a paleo-shoreline resulting from seismic land uplift near the coast of Northeastern Kamchatka. The sites found are quickly and accurately dated in the field based known volcanic tephra layers, which are abundant in this area due to the presence of nearby volcanoes. The results demonstrate changing settlement patterns throughout the Holocene occupation of the region.

Keeley, Jon (U.S. Geological Survey)

[192] *Early Human Impacts on Fire in California Ecosystems*

Global studies of Holocene fire activity find a strong link between climate and fire activity and this has been used as evidence that humans played a minimal role in Holocene fires. In some regions such as California this charcoal record is biased against detecting human impacts and there is abundant evidence of humans controlling fire regimes. Human impacts were largely a function of natural ignition sources and population density. High elevation sites with unlimited lightning ignitions may have been little affected but just the reverse is to be expected on coastal and foothill landscapes.

Keene, Joshua (Texas A&M University) and Clayton Marler

[262] *XRF Analysis of Stemmed Points from the Idaho National Laboratory, Northeastern Snake River Plain*

The Idaho National Laboratory is located on the upper Snake River Plain, in southeastern Idaho, and encompasses nearly 900 square miles of Federally managed cool, high desert. During summer 2010 we collected a sample of obsidian stemmed points from locations across INL in proximity to what were relatively lush riverine and lacustrine environments during the terminal Pleistocene/early Holocene. Here we present results of energy dispersive X-ray fluorescence analysis conducted on these points, and in combination with results from prior studies, interpret Paleoindian raw material preference, mobility, and exchange in the northern Great Basin.

Keene, Joshua [94] *see* Goebel, Ted

Keller, Angela (University of Texas at Arlington)

[190] *Locating Marketplaces in a Classic Maya Moral Economy*

As described by early Spanish chroniclers, market trade

was a vital component of the Maya economy at Conquest. Nevertheless, the extrapolation of a market-based economy back into the Classic period remains controversial largely for two reasons: (1) a lack of undisputed archaeological evidence for marketplaces, and (2) a perception that the documented Classic Maya system of tribute and gift exchange was inimical to market trade. This paper presents recent archaeological evidence for physical marketplaces at Classic Maya sites, and posits a reconceptualization of the Classic Maya moral economy which incorporates tribute and gifting alongside elite-controlled markets.

[9] *see* Mixter, David

Keller, Donald

[20] *The Log Kiva? Terminal Pueblo Occupation in the Eastern Grand Canyon*

Lower Unkar Site Feature 8, with ceramic, radiocarbon, and dendrochronological evidence potentially postdating A.D. 1200, may be one of the latest Pueblo structures in the Grand Canyon. Unusual construction includes use of small-diameter coursed wall logs, apparently cut and carried into the canyon from higher rim areas. Attributes, including slab-surfaced floor, hearth box and ash pile, ventilator, square shape and probable roof entry, with formal abandonment, are compared with regionally ascribed prehistoric and historic Pueblo kivas. Is Feature 8 a kiva of unusual construction, part of a terminal phase of Pueblo occupation in the eastern Grand Canyon?

[163] *see* Gibbs, Tim

Keller, Jessica [69] *see* Conrad, Geoffrey W.

Kellett, Lucas (University of New Mexico)

[227] *The Domestic Economy of Ancopaccha: The Wari Occupation of the Andahuaylas Region (Apuirímac), Perú.*

The Andahuaylas region of southern highland Peru is an excellent laboratory in which to examine Wari imperial development in the hinterland since the area is situated between the imperial capital and several surrounding provincial centers. In this paper, I offer a local perspective of provincial life in Andahuaylas during the Wari occupation and outline recent excavation work at the small village site of Ancopaccha. Using faunal and macrobotanical data, I describe the domestic economy during the Middle Horizon, which supports the existence of small-scale, agro-pastoral subsistence strategy which was centered in the lower valleys.

Kellner, Corina, Andrew Somerville (University of California, San Diego) and Margaret Schoeninger (University of California, San Diego)

[233] *Strontium analyses of human bone reveal no Wari state emissaries in the Nasca region of south coastal Peru (750-1000 A.D.)*

The Wari state and the local society of Nasca of the south coast of Peru (750-1000 A.D.) had a close relationship as evidenced by the Wari imperial site of Pataraya in the Nasca valley, similarities in ceramic styles, and the ease of travel to and from the Wari heartland. Strontium stable isotope analysis of human remains can clarify the relationship between the Wari state and the Nasca. Our analyses find no evidence of Wari emissaries entering the Nasca region and suggest that direct Wari influence was absent in the Las Trancas

valley.

Kellner, Corina [255] see Schoeninger, Margaret J.

Kelly, Gwendolyn (University of Wisconsin - Madison)

[100] *Technology, Production and Trade: Beads in the Society and Economy of Early Historic South India (c.300 BCE - 300 CE)*

Beads and other ornaments were important items of trade, wealth display, and cultural identity in South India during Early Historic Period. At Kodumanal, in Tamil Nadu, beads were manufactured using multiple different techniques (chaînes opératoires), in a wide variety of local and non-local raw materials. Evidence from Kodumanal is compared with other sites in South India, as a means to understand both the local organization of production and consumption, and its role in the broader region. I argue that the intensification of bead production at Kodumanal is indicative of processes of increasing interdependence, specialization and trade.

Kelly, John [198] see Brown, James A. [193] see Lundin, Richard J.

Kelly, Robert (University of Wyoming)

[17] *Demography and Climate in Northwestern Wyoming*

John Speth encouraged his students to question assumptions. One assumption of archaeology is that human demography responds to climate change, growing in "good times" and declining in "bad times." However, this assumption is rarely tested because our ability to reconstruct human demographic change has been limited. With a new method developed by Surovell et al (2009, J. Arch. Sci.) we believe we have reconstructed demographic change in Wyoming's Bighorn Basin, and here test whether the periods of population growth and decline correlate with significant changes in climate.

[262] *Discussant [17] First Chair [57]* see Lee, Craig M.

Kelly, Sophia (Arizona State University) and Craig Fertelmes (Arizona State University)

[193] *The Applicability of Bulk Elemental Characterization Techniques for Identifying Prehistoric Ceramic Recipes in the Phoenix Basin, Arizona*

The ethnographic literature includes numerous examples of potters who use prescribed recipes in the manufacturing of ceramic containers. This study utilizes bulk EDXRF characterization techniques to determine if prehistoric Hohokam potters in central Arizona used specific ceramic recipes in pottery production. The analysis gathers geochemical data from decorated red-on-buff pottery with a Bruker Tracer III-IV portable spectrometer under different filter and energy settings. The resultant data are examined to assess the chemical variability within and between ceramic sherds that are sourced to discrete sand composition zones.

Kelly, Sophia [187] see Lack, Andrew [187] see Abbott, David R.

Kelly, Tim [158] see Howe, Mark L.

Kelsey, Ann [91] see Springer, Corinne H.

Kemp, Brian M. [46] see Chisholm, Brian S. [70] see Newbold, Bradley [194] see Monroe, Cara [178] see Flanigan, Kelli B.

Kempton, Karen (Wyoming Army National Guard)

[150] *Twenty Years of Contributions to Wyoming Archaeology*

The Wyoming Military Department manages approximately 75,000 acres of land at four training sites and 17 armories across the State of Wyoming. Since 1990 the Army National Guard has sponsored archaeological surveys and, in some cases, ethnographic investigations at these locations. Nearly 66,000 acres have been inventoried and 1,100 sites have been recorded. These studies have contributed to the broad understanding of the prehistory and history of Wyoming.

[150] *Third Organizer*

Kendall, Bryan (University of Iowa), Ted Marks (University of Iowa) and Jonathan Thomas (University of Iowa)

[61] *Experimental Replication of Usewear on Late Stone Age Microliths from Southern Africa*

Most usewear studies of Late Stone Age (LSA) microliths have focused on wear resulting from projectile impact. This project examines microwear patterns on experimental microliths created by direct impact, ostrich eggshell (OES) bead manufacture, composite weapon hafting, and transportation. Using scanning electron microscopy (SEM), wear on experimental microliths is compared to LSA microliths from the site of Erb Tanks, western Namibia. Microscopy demonstrates that microwear in the LSA assemblage resulted from transport or bead drilling, rather than projectile impact. This suggests that the Erb Tanks assemblage may represent an episode of 'tooling up', and that microliths were potentially versatile tools.

Kendall, Heather (Simon Fraser University)

[160] *Chert characterization and sourcing at ST 109, Keatley Creek*

Examinations of resource procurement areas are one of the most effective ways for understanding how First Nations people exploited the landscape. My research investigates the nature of stone material collection strategies within the British Columbia Interior Plateau by characterizing and sourcing the siliceous lithic assemblages excavated from Structure 109 and its associated features at the Keatley Creek pithouse site. The artefacts are associated with the later horizons of the Plateau Pithouse Tradition (2400 – 200BP). For this study, I utilized X-Ray Fluorescence and Instrumental Neutron Activation Analysis to characterize and correlate the chert and chalcedony artefacts.

Kendig, William [105] see Whistler, Emily L. [123] see Guttenberg, Richard B.

Kennedy, John [179] see Adams, Jeffrey A.

Kennedy, Lisa [202] see Bain, Allison

Kennedy, Sarah (University of Wyoming) and Kylie Quave (Southern Methodist University)

[6] *Identifying Inka Domestic Contexts in the Absence of Surface Architecture (Cusco, Peru)*

Archaeological households are often identified by architectural comparisons within a site or a region. However, in the absence of surface remains, what tools do archaeologists have for recognizing households? At the Inka site of Cheqoq, northwest of Cusco, we are examining lithic tools and debitage to better identify houses in relation to other contexts such as public structures, multi-use precincts, and a ceramic production workshop. This analysis of microartifactual remains from flotation heavy fraction and hand recovered lithic debitage and objects looks at ubiquity and percentage measures, as well as significance tests to establish patterns of household and site-level organization.

Kennedy Richardson, Karimah O. [123] see Teeter, Wendy G. [105] see Posadas Vidales, Lylia I.

Kennett, Douglas (University of Oregon), Dolores Piperno (National Museum of Natural History), John G. Jones (Washington State University), Megan Walsh (University of Oregon) and Brendan Culleton (University of Oregon)

[88] *Pre-Pottery Farmers on the Pacific Coast of Southern Mexico*

We present paleoecological data from sediment cores taken along the Pacific coast of southern Mexico near Archaic Period archaeological sites. Burned maize phytoliths first appear in these sedimentary records at 6,500 cal BP in association with macroscopic charcoal and forest disturbance plant taxa. Periodic burning and forest disturbance, consistent with farming activities, is also evident in the macroscopic charcoal record between 6,500 and 4,700 cal BP. These data indicate that people were slash and burn farming during the Archaic Period prior to the adoption of pottery and the proliferation of Early Formative Period villages after ~3,800 cal BP.

Kennett, Douglas [145] see Ebert, Claire E. [108] see Gilmour, Daniel M. [34] see Aquino, Valorie V. [9] see Thompson, Amy Elizabeth [88] see Culleton, Brendan J. [5] see Gomez, Josue A. [123] see Jazwa, Christopher S.

Kent, Jonathan [156] see Gaither, Catherine

Kepecs, Susan (University of Wisconsin-Madison) and Rani Alexander (New Mexico State University)
[200] *Adventures in Demography: Comparing population trends in Yucatan using documentary and archaeological evidence*

Thomas Charlton argued that 16th century demographic collapse in Mesoamerica was the primary cause of sociocultural change in the post-contact period. In this paper we examine the methodological challenges of using archaeological and documentary sources to reconstruct population trends in Yucatan. We analyze two specific episodes of demographic change: the 16th century decline resulting from the Spanish invasion, and the 19th century decline produced by Yucatan's Caste War. Archaeological evidence shows that the rate of 16th century decline was less severe than documentary sources suggest. Nineteenth-century aggregation and dispersal caused disparities in population estimates calculated from archaeological and documentary sources.

[200] *Third Organizer*

Keremedjiev, Helen (University of Montana)

[113] *Public Archaeology and Conflict Narratives: On-Site Interpretation Practices at Historic Battlefields in Montana*

How do different groups of people relate to an historic event with the cultural landscape and their cultural heritage; and how does archaeology have a role in these interactions? Heritage sites, such as battlefields, are focal areas for spatial and temporal remembrances of the past. Multiple interpretations of a cultural landscape can impact visitors' understanding of historic events. Looking at on-site interpretation methods and annual commemoration practices, this paper highlights how cultural landscapes, archaeology, and cultural resource management laws affect peoples' knowledge, feelings, and experiences at four historic battlefields in Montana: Bear Paw, Big Hole, Little Bighorn, and Rosebud.
[113] *Second Organizer [113] Second Chair [113]* see Fisher, Jack

Kerr, Matthew [19] see Reber, Eleanora A.

Kersel, Morag (DePaul University) and Yorke Rowan (The Oriental Institute, University of Chicago)
[254] *Deconstructing the Holy Land: Cultural Heritage, Archaeology, Tourism and the Miniature*

The appropriation of cultural heritage sites for the purposes of tourism often dictates which sites are promoted and interpreted - a reflection of decision makers with specific agendas. At the theme park of Mini-Israel in central Israel the visitor is invited to "see it all small," but which spaces are selected? This miniaturized version of Israel includes representations of cultural heritage sites ranging from archaeological sites to tank museums. We examine these choices not only as reflections of nationalism, but also as manifestations of modern identity creation, consumer desire, and tourism.
[78] *Discussant*

Kersel, Morag [236] see Chesson, Meredith S.

Khalidi, Lamy (University of Chicago & CEPAM-CNRS-UMR 6130), Krista Lewis (University of Arkansas at Little Rock), Bernard Gratuze (IRAMAT-CNRS-UMR 5060 - University of Orléans) and H. Xander Veldhuijzen (UCL Institute of Archaeology)
[167] *On the cutting edge? Obsidian and Iron Use and Exchange in Pre-Islamic Highland Yemen*

Three decades of research have produced a register of sites and a landscape record spanning the Neolithic through Himyarite periods. Recent geochemical analyses of archaeological obsidian provide data for a diachronic model of local obsidian exchange. Consequently we can identify both continuity and shifts in exchange networks within the context of environmental, cultural, and political changes and confirm Yemen's role as a major source zone in Arabia. Parallel archaeometallurgical analyses of iron production debris from later Himyarite contexts where obsidian consumption declined, have added to a broader picture of the long-term dynamics of resource and technological strategies.

Khalidi, Lamy [133] see Sereno, Paul C

Kiahtipes, Christopher (Washington State University)

[192] *Fire, Foragers, and Ecological Mythology*

Archaeological and ecological research in the last 10 years has brought to light the many ways in which humans interact with their environment. However, these studies have largely emphasized the impacts of agricultural and industrial economies at the expense of small-scale societies like hunters and gatherers. Sedimentary evidence from the Great Basin and the Congo Basin provides an opportunity to explore the fundamental problem of how researchers generate meaningful hypotheses about human foragers and their environment. These hypotheses are especially important because they challenge popular mythology about environments, human behavior, and the role of fire in ecosystem management.

Kidder, Barry (Texas State University-San Marcos)

[266] *The Chthonic Canvas: Elite Maya Scribes, Portals of Power, and Artistic Production in the Late Classic Period*

Iconographic and epigraphic analyses show elite Maya scribes were envisioned as creator deities that could contact and transform into a specific pantheon of gods through shamanic rituals. These gods associated with the artistic class were denizens of the Underworld and were thought to reside in apertures of sacred landscapes such as caves and cenotes. Thus, elite Maya scribes adopted the multivocal symbol of the cave as a medium to bolster their perceived supernatural abilities and reinforce their prestigious sociopolitical position in the face of increased horizontal and vertical social complexity.

Kidder, Tristram (Washington University) and Min Li (Peking University/Washington University in St. Louis)

[133] *Geoarchaeology of China's Pompeii: The Sanyangzhuang Site, Henan Province*

The focus of geoarchaeological research at Sanyangzhuang is to understand the geological context of the site and the nature of the flood that buried the Han occupation. Research shows the site area has a complex geological history in which the Yellow River has been the dominant force through the 13th century C.E. The landscape history reveals multiple episodes of long-term stability starting at the end of the Pleistocene and punctuated by flood events and periods of landscape instability. These patterns tell us much about the evolution of the Yellow River floodplain and its relationship to human settlement during the Holocene.

Kieffer, C. L. (University of New Mexico, Maxwell Museum)

[56] *One Cave, Many Contexts: The Skeletal Deposits from Midnight Terror Cave, Belize*

Although cave contexts in the Maya area often have excellent preservation, activities in the past and present make analysis of skeletal deposits in difficult. This paper outlines a more holistic approach that can be used to determine the differences between different mortuary activities in caves based on associated remains, osteological analysis, and contextual analysis. Examples from Midnight Terror Cave will be used to demonstrate that a single explanation of utilization cannot be used for an entire site. Rather multiple types of mortuary practices are possible, including primary and secondary deposits,

ancestor veneration, and sacrifice.

[266] see Krasnec, Katina V.

Kielhofer, Jennifer [262] see Smith, Geoffrey M.

Kiernan, Kevin (University of Kentucky)

[82] *New Deal Archaeology on St. Simons Island, Georgia*

Preston Holder's 1936-1937 WPA archaeological campaign on St. Simons Island, Georgia, is richly attested in relatively unknown, untapped, and unpublished resources. These include official and unofficial reports and correspondence; detailed field notes, burial lists, faunal lists, graphs, and maps; laboratory and sherd analyses; contemporary artifact displays requisitioned for locals and tourists; a wide range of photographs; and three-score of bins containing over 100,000 ceramics. Using a recently discovered and restored profile, contour, and location map prepared by a professional draughtsman, this poster illustrates the nature of some New Deal excavations by reference to the Charlie King Mound.

Kilby, David (Eastern New Mexico University)

[155] *A Regional Perspective on Clovis Blades and Caching Behavior*

In 1963, F. E. Green reported the discovery of 17 blades at Blackwater Draw, NM, proposing that Upper Paleolithic-style blades were characteristic of Clovis technology and that this particular collection of blades had been cached near a small stream at the site. In the nearly 50 years that have passed since this landmark discovery, sufficient data have accumulated to indicate that regional patterns exist for both Clovis blade manufacture and Clovis caching. This paper explores the relationship between blade technology and caching behavior at a regional scale, offering potential explanations for where they occur and where they do not.

Killick, David [136] see Hedquist, Saul L.

Killoran, Peter (University of Wisconsin-Whitewater) and Mirza Nelba Del Castillo Salazar

[33] *A Preliminary Report on the Burials Recovered from the Pisanay Site in the Sihuas Valley, Peru.*

Excavations began in the summer of 2009 to document changes in ethnic identity over time at Pisanay site. The site is interesting in that it located in area for potential interchange between the Tiwanaku and Wari polities. However, the site dates primarily to the Late Intermediate Period 1000-1450 CE. The poster will present a discussion of the skeletal remains from 7 tombs. Age, sex, pathology and taphonomic issues as it affects the larger project are examined.

[33] *First Chair*

Killoran, Peter [33] see Winkley, Marilyn

Kim, Bumcheol (Chungbuk National University)

[149] *Overheated Competition and Erroneous Investment: Monumentality and Political Economy in the Bronze Age, Central-western Korea*

Dolmens, megalithic tombs are the most prevalent features in Korean Bronze Age landscapes. Different from traditional thought, the construction of dolmens concentrated on relatively short period, the transition of

Early to Middle Bronze Ages. The transition in central-western Korea witnessed emergent complexity and incipient regional-scale political economy accompanied by rice-agricultural intensification. The socioeconomic changes followed and/or paralleled with competitive construction of dolmens that traditionally functioned as territorial markers and symbols of collective rituals. However, overheated competition between local leaders, regional-elite-to-be seems to have led erroneous investment as analyzing distributional patterns of dolmens with reference to soilscaes reveals.

Kim, Minkoo (Chonnam National University)

[25] *Agroforestry in the Ancient Mahan States of Korea*
Carbonized and waterlogged wood remains from nine archaeological sites are examined in order to shed light on the management practices of tree species during the Mahan period (ca. 100 B.C. to A.D. 500). The analysis provides evidence of a shift in wood composition after the establishment of the Mahan states, especially a dominance of chestnut (*Castanea crenata*). Chestnut proliferates in the secondary forest around village, usually under human intervention. The current study suggests that people of the Mahan states exerted control over the propagation of chestnut trees, and that this plant was an important source for fuel, construction materials, and food.

Kim, Nam (University of Wisconsin-Madison)

[23] *Construction and Population Estimates for the Co Loa Site in Vietnam*

The Co Loa site in Vietnam's Red River Delta is believed to be one of the first capitals of Vietnamese civilization. Recent archaeological investigations have demonstrated that the site was likely founded sometime during the third century BC, lending support to Vietnamese oral traditions regarding an indigenous, early state-like society. This paper presents additional research highlighting the construction requirements for the site's monumental system of fortification features, along with estimates for the site's population size during the Iron Age. The data have implications for the type of polity responsible for founding and constructing the proto-urban site.

Kimball, Larry (Appalachian State University), Nathan Faulks (Appalachian State University), Tonya Coffey (Appalachian State University) and Nazim Hidjrati (North Ossetian State University)

[59] *Quantitative characterization of microwear polishes: Atomic Force Microscope and Interferometry approaches as applied to Mousterian tools from Weasel Cave, Russia*
The functions of flaked stone tools are usually determined by the observation of microwear polishes with the incident-light microscope with magnifications of 50-400x – known as the Keeley Method. In our study into the function of Mousterian flint tools from Weasel Cave, we employ the atomic force microscope (AFM) and the optical profile interferometer, in addition to the light microscope and the SEM. The advantage of the AFM and the interferometer are the extremely high resolution permitted and most importantly the quantitative data extracted from microwear polishes. The merits of these different instruments are discussed in the context of polish differentiation for microwear traces on archaeological specimens interpreted as due to contact with meat, fresh hide, dry hide, bone, wood, as well as

hafting.

Kimball, Larry [108] see Hidjrati, Nazim [108] see Koetje, Todd A.

Kindon, Andrew (West Valley College), John Morris (Institute of Archaeology, Belize) and Samuel Connell (Foothill College)

[190] *Commercial Centers of the Maya Past and Mennonite Present: the UCLA Maya Archaeology Project at Aguacate, Spanish Lookout, Belize*

New investigations at the Maya sites of Aguacate in Spanish Lookout, Belize have uncovered a rich occupation history. Two years of excavations at Aguacate Uno highlight the area's location along important transportation routes running from the Peten to the Yucatan. The Aguacate region is imagined as a dynamic semi-autonomous polity playing a vital role in interregional commerce. The sites sit on the edge of escarpments between the major centers of El Pilar and Lamanai. We suggest that El Pilar may have derived its power from ties to the wealthy Aguacate settlement region.

King, Adam [164] see Stephenson, Keith

King, Eleanor (Howard University) [138] *First Chair* [138] see Fields, Shawn

King, Jason (Center for American Archeology)

[141] *Variability in Middle Woodland Mortuary Practices at the Pete Klunk (11C4) and Gibson (11C5) Sites*

The Pete Klunk (11C4) and Gibson (11C5) sites comprise a core body of data for understanding Middle Woodland (50 BC - AD 400) period peoples. Despite their importance, the temporal place of the cemeteries within the Middle Woodland period has remained unexplored. In this paper, I present eight new radiocarbon dates from the Pete Klunk site. These data are analyzed with recent assays from the Gibson site in order to identify intra- and intersite sequences of moundbuilding and temporal change in funerary practices. Results are then placed in the context of regional expressions of Middle Woodland mortuary behavior.

King, Jay [262] see Duke, Daron [83] see McGuire, Kelly

King, Robert (Bureau of Land Management) and Jeanne Moe (Bureau of Land Management)

[113] *Teaching Archaeology at National Boy Scout Jamborees: Experiences, Issues, and New Ideas for the Future*

Since the 1980s, the Bureau of Land Management has participated in National Boy Scout Jamborees that are held every four years. The latest was at the 2010 Jamboree near Fredericksburg, Virginia, with the Bureau creating a hands-on activity for Scouts who helped construct an ancient Indian dwelling over the course of 10 days. It was patterned after one found archaeologically in BLM's Canyon of the Ancients National Monument in southwestern Colorado. This paper shares insights from that project and earlier hands-on archaeological activities at past Jamborees. It also explores evaluating and improving this type of

participation by archaeology educators in the future.

King, Thomas (Unaffiliated)

[172] *How Does EPA Get Away With It? The Delegation Two-Step and the CERCLA Shuffle*

The U.S. Environmental Protection Agency avoids protecting historic places in two major ways. First, it delegates many functions to the states, and doesn't require them to address the requirements of laws like the National Historic Preservation Act. Second, it invokes the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) to exempt itself from the "procedural" requirements of most environmental laws. Despite its ostensible mandate to "protect" the "environment," EPA has been able for decades to slither out from under doing anything about archaeology and historic preservation.

Kingwell-Banham, Eleanor [111] *see Fuller, Dorian Q.*

Kinkella, Andrew (Moorpark College)

[75] *Settlement at the Water's Edge: The Ancient Maya of the Cara Blanca Pools, Belize*

Pools of water have long been recognized as areas of both ritual and economic importance for the ancient Maya. This research focuses on ancient Maya settlement patterns as they relate to a string of 25 freshwater pools, located in the Cara Blanca area of west central Belize. The importance of water ritual in the location of ancient Maya sites is discussed, as is the nature of the settlement at the pools, the relationship between the pools and the larger sites in the vicinity, and the similarities between the Cara Blanca settlement and other poolside sites throughout the Maya area.

Kinnear-Ferris, Sharyl (National Park Service)

[46] *Hopi pottery in the Southern Utah canyon country*

A collection of Hopi artifacts was returned by their discoverers in 2002 to Canyonlands National Park after an absence of nearly 40 years. The collection was found as a single cache and includes eight ceramic vessels of Hopi types dating between AD 1400 and 1600, three whole gourds, and four half gourds. The circumstances of the find and its return are discussed, and other reported occurrences of Hopi pottery in southern Utah are reviewed. The implications of finding Pueblo IV Hopi pottery as far north as Canyonlands National Park are explored.

Kintigh, Keith (Arizona State University) [144]

Discussant [117] Discussant [99] Discussant

Kipnis, Renato (Scientia Consultoria Científica)

[17] *Amazonian Anthropogenic Soils' Antiquity at Upper Rio Madeira, Northwestern Amazon, and Its Implications for the Colonization of South American Neotropics*

In the Amazon region we still lack information on when, where, and how small scale foraging societies changed to more sedentary lifestyles and complex social arrangements based on agriculture. Nonetheless, in the last few years there is a growing consensus that the first colonizing population of the Neotropical region did so with a broad-spectrum subsistence economy, and that Amazonian anthropogenic soils is a crucial record for understanding this process. Here we present evidences for early and middle Holocene cultivation of local crops

by pre-ceramic groups in the upper Madeira River, such as rich-organic soil and artifacts associated with plant processing.

Kirakosian, Katie (UMass Amherst)

[27] *Getting Back to our Roots: Using Ethnography to Better Understand the Archaeological Record*

In order to understand the significance of shell middens in southern New England, ethnographic research was employed in this dissertation project. Members of the Native descendant communities and Non-Native experts were interviewed about the current meaning and significance of these places on the landscape as well as possible significance and meaning for the Pre-Contact creators of these sites. As this is part of a larger ongoing project, only a portion of the results is offered here with a discussion of the challenges and potential of such research.

Kirch, Patrick (Univ. California Berkeley)

[261] *Household archaeology and the rise of archaic states in Hawai'i*

The late pre-contact polities of Hawai'i arguably transcended the boundary between chiefdoms and states. Since 2007, the Hawai'i Biocomplexity Project has archaeologically investigated household sites, in two territorial units of Kohala District, Hawai'i Island. Our objective has been to elucidate the role of households—of both commoners and elites—in the late precontact evolution of Hawaiian society. This paper offers an overview of the project, including our theoretical orientation and presentation of key findings. The results of household archaeology in Kohala support a shift from a domestic mode of production to a more integrated political economy including specialized production.

[261] *see Mills, Peter R. [261]* *see Ladefoged, Theng*

Kissel, Marc (University of Wisconsin) and John Hawks (UW-Madison)

[108] *Mode 3 tool types and the Homo Helmei hypothesis*

The recent publication of the Neandertal genome has demonstrated that humans and Neandertals share an ancestral population only 200-400,000 years ago. This leads credence to the 'Homo helmei' hypothesis, a hominid species whose existence is based upon the appearance of Mode 3 tool types and the Florisbad cranium. We examine whether the behavioral record is consistent with this idea, and then reevaluate it in light of new fossil and genetic data. Rather than positing a new species, the data suggests there is no evidence for an increase in inter-regional diversity over time, as predicated by the hypothesis.

Kitchel, Nathaniel [155] *see Gingerich, Joseph A.M.*

Kittel, Michelle (CSU Stanislaus), Catalina López (California State University, Stanislaus), Rebecca Jarrett (California State University, Stanislaus) and Melissa Muñoz (California State University, Stanislaus)

[31] *The Settings of Power and Prestige: Elite Architecture at Los Naranjitos, El Paraíso Valley, Western Honduras*

While the monumental structures that formed the site core of large centers in southeast Mesoamerica have

been extensively investigated, the focal structures of secondary and tertiary centers have received far less attention. Like their counterparts at large centers, these buildings served as settings for the ritual and quotidian activities through which social, economic, political, and ideological affiliations were negotiated and enacted. In this poster we explore the spatial organization, architectural form, and construction techniques of the buildings and open spaces at Los Naranjitos, an elite residential group in the El Paraíso Valley, western Honduras.

Klar, Kathryn (University of California, Berkeley) and Terry Jones (California Polytechnic State University, San Luis Obispo)

[11] *A Land Visited: Reasserting the Case for Polynesian Contact in Southern California*

Many American archaeologists continue to resist the idea of prehistoric Polynesian landfall in the New World largely on the basis of chronological issues and an unwillingness to accept linguistic evidence as a critical complement to the archaeological record. Here we supplement our original linguistic and archaeological case with previously overlooked artifactual evidence including compelling stylistic similarities in bone and shell fishhooks, and newly located Chumashan language data. These results address the chronological questions, and make the linguistic case even more difficult to explain by any conclusion other than face-to-face contact between ancient Polynesians and Native Americans.

Klarich, Elizabeth (Smith College) and Andrew Roddick (University of Victoria)

[267] *Arcillas and alfareros: Clay and temper mining practices in the Lake Titicaca Basin*

In this paper we examine both ethnographic data and archaeological evidence for mining of raw materials for pottery production in the South Central Andes. Specifically, we focus on the relationship between sources, technological style and value in the modern potting community of Pucará in the northern Titicaca Basin and a Late Formative (200 BC- AD 300) archaeological example from the Taraco Peninsula in the southern basin. We focus on the issue of "sourcing" prehistoric pastes in a dynamic geological environment, and question how issues of value and ownership, so central in the ethnographic present, can be studied in the past.

Klaus, Haagen (Utah Valley University) and Izumi Shimada (Southern Illinois University)

[156] *Bodies and Blood: Evidence and Interpretation of Middle Sicán Human Sacrifice on the North Coast of Peru, A.D. 900-1050*

Excavations within the Middle Sicán heartland of northern Peru have revealed previously unknown diversity of sacrificial practices during the Late Intermediate Period. Multiple forms of evidence define at least two traditions of ritual killing spanning intentionally un mutilated victims associated with high-status funerals and temple dedications; blood sacrifice-related throat slitting, chest opening, decapitation, and stabbing of mostly subadults predominated in rural settings. We consider potential symbolism, implications for the multi-ethnic structure of Middle Sicán society, and how ritual killing shifted away from Moche-era warrior sacrifice

towards more generative forms of violence likely preoccupied with water and fertility in the living world.

[217] *Discussant*

Klaus, Haagen [156] see Perez, JoEllen M. **[156]** see Bentley, Sylvia **[260]** see Cervantes, Gabriela

Klehm, Carla (University of Texas at Austin)

[140] *Local Impacts of Long-Distance Trade: Hinterland relationships at Bosutswe in Iron Age Botswana*

Intensifying long-distance trade relations in the 11th century linked Africa to Asia, paralleling the rise of complex regional polities, political centralization, and social stratification in southern Africa. This paper concerns proposed excavations at three Iron Age sites around Bosutswe, Botswana, the longest continuously occupied African polity south of the equator. While the cultural stratigraphy of Bosutswe is well known, its development needs contextualization in relation to its vicinity, supporting and perhaps competing sites. Spatial and quantitative analyses are proposed to define how trade, status, and power were articulated at inter-site and intra-site scales. Pilot study results are presented.

Klein, Rebecca (U.S. Army National Guard)

[150] *Bridging the Gap: Better Archaeology through Public Outreach*

As a Federal agency, the Army National Guard is tasked with the management of cultural resources on its installations. This provides ARNG CRMs a distinct opportunity to add to the breadth of knowledge about North American prehistoric lifeways. At the Guard Bureau level, Cultural Resources Program Managers are dedicated to fostering responsible management while building and maintaining strong relationships with interested parties - Native American Tribes, universities, museums, historical societies, and the public. It is through this interagency approach and a commitment to public outreach that ARNG can continue to make substantial contributions to the study of North American prehistory.

Klein, Richard [12] see Texier, Jean-Pierre

Kleindienst, M.R. [218] see Blackwell, Bonnie A. B.

Kling, Amber (University at Buffalo)

[73] *Theorizing High Elevation Enclosures in Pambamarca, Ecuador*

The Ecuadorian highlands, with its numerous fortifications and enclosures, speak of the Inca occupation and indigenous resistance while also presenting researchers a rare opportunity to study heavily militarized landscapes. Although research has often focused on the larger fortifications in the Pambamarca region, this paper discusses the smaller unstudied enclosures referred to here as "High Elevation Enclosures". Compared to other sites, their unique attributes and locations, and lack of militarized features makes the need for alternative roles and functions to be posited. Geochemical testing, geo-prospection and excavation can help reveal their possible multifaceted nature and potential role in Inca warfare.

Klingelhofer, Eric [121] see Hudgins, Carter L

Klokler, Daniela (Museu Nacional - UFRJ) and Ximena Villagran (Universidade de São Paulo)

[253] *Optimal foraging and exceptional feasting: from environmental adaptation to social integration*
Shell-bearing sites have attracted researchers with a focus on subsistence for its good preservation of faunal remains. Models based on optimal foraging theory have been extensively used to explain Pleistocene shell accumulations as evidence for maritime resource exploitation in scarcity times. However, Holocene shell sites do not necessarily fit within this framework. Researchers have realized that some of these structures could have been intentionally built and that the force behind construction was derived from ritual. We intend to explore the role of feasting in the development of some sites and discuss the possibility to combine both views of resource use.

Klokler, Daniela [253] see Gaspar, Maria Dulce

Knell, Edward (California State University, Fullerton) and Matthew E. Hill (University of Iowa)

[231] *Linking Late Paleoindian Bones and Stones: Regional Variation in Late Paleoindian Land Use and Foraging Strategies*

This study identifies and explains regional-scale patterns of Great Plains Late Paleoindian (10,000-8000 yrs BP) land-use and subsistence through inferences gained by linking lithic and faunal analyses. Human behavioral ecology principles are used to generate a model depicting seasonal variations in land-use and subsistence organization in different environmental zones. The model is tested using diet breadth, kill size, seasonality, and lithic raw material provenance data from 56 Late Paleoindian sites. The analysis builds on a prior test of the model that was limited to the Cody complex. A dynamic view of Late Paleoindian land-use and subsistence practices is ultimately provided.

[231] First Chair

Knierim, Rebekka [123] see Guttenberg, Richard B.

Knoerl, John (National Park Service)

[259] *How Battlefields Disappear*

Conflicts among competing priorities such as preservation and urban development have been in play ever since the National Historic Preservation Act was signed into law in 1966. Resolving these conflicts is often hampered by our inability to visualize the nature of the conflict. In the case of Civil War battlefields, urban development tends to fragment these landscapes. This process was modeled on eleven battlefields. The results suggest that it may be possible to use this information to plot out a strategy for acquiring parcels of land that optimally function to halt continued fragmentation of the battlefield.

Knudson, Kelly (Arizona State University) [217]

Discussant

Knüsel, Christopher [237] see Robb, John E.

Kobti, Ziad [257] see Crabtree, Stefani A.

Koenig, Orrin [101] see Schroeder, Bryon A.

Koetje, Todd (Western Washington University), Naomi Cleghorn (University of Texas, Arlington), Nazim Hidjrati (Institute of History and Archaeology, North Ossetia State University), Larry Kimball (Appalachian State University) and Maria Kanukova (Institute of History and Archaeology, North Ossetia State University)

[108] *The Other Last Neanderthals: Final Mousterian Occupation at Weasel Cave, Russia*

The Weasel Cave-Dormouse Hall cave system is the deepest Pleistocene stratigraphic context in the Caucasus Mountains. The Upper layers present another refugium of late Neanderthal occupation in Eurasia. We argue this given the late (~27,000 BP) dating of the most recent Mousterian occupation, coupled with an apparent absence of an early Upper Palaeolithic in the north-central Caucasus, and contemporary modern human occupation in north-western Caucasia, and the Trans-Caucasus. Herein, this final Neanderthal occupation at Weasel Cave is detailed in terms of: dating, site structure, archaeozoology, and microwear studies, as well as, evidence of several unusual symbolic-laden artifacts

Koga, Yuko [224] see Alvarez, Damian

Kohler, Jack [77] see Riffe, Jed

Kohler, Tim A. (WSU/SFI/CCAC)

[99] *Understanding Settlement Responses to Low- and High-Frequency Behavior in SW Colorado*

Many Southwestern archaeologists recall Jeff Dean's distinction between low- and high-frequency climatic variability, but fewer remember his predictions about what he thought the different effects of those might be on societies. I review his suggestions, and evaluate them with reference to the Village Ecodynamics Project area of southwestern Colorado. I will close by reviewing VEP progress towards incorporating low-frequency variability into our existing high-frequency maize productivity dataplans.

[99] see Varien, Mark D [118] Discussant [257] see Crabtree, Stefani A.

Kohn, Alison (Arizona State University)

[24] *Constructing Neighborhood Space and Political Populism in Peri-Urban La Paz, Bolivia*

In this paper I argue that the autoconstruction (self-construction) of peripheral migrant neighborhoods in contemporary La Paz has mediated the emergence of new political forms, aesthetics, and practices that, in part, comprise the materiality of recent social movements and identity claims in Bolivia, often referred to as 'indigeneity.' Through a discussion of my own ethnographic research in La Paz carried out since 2002, I show how this new urban aesthetic, which is locally called "cholo architecture," emerges at the intersection of incremental neighborhood construction and the constitution of political subjectivity and authority.

Kohn, Sophie (Archaeological Research Center of St Louis)

[147] *Mortuary Practices at Paquimé and in the Casas Grandes Region*

Burial practices in the Casas Grandes culture area are poorly understood. While the excavations of the JCGE

offered detailed information on four sites, few excavations have been undertaken that published detailed descriptions of burials. Those that do reveal fairly standard burial practices throughout the region. One exception is Paquimé, which has revealed extensive variation in treatment of the dead. Some practices were heavily ritualized, including sacrifice and consumption of the dead. Researchers argue for varying levels of influence from Mesoamerica; mortuary practices at small sites and Paquimé offer insight into local versus non-local influence, and distinguish between Paquimé and smaller sites.

Kohut, Lauren [227] see *Wernke, Steven A.*

Kolb, Michael (Northern Illinois University)

[86] *Settlement aggregation and the built-landscape in Hawai'i*

This paper examines archaeological data from Hawai'i in order to illustrate how supra-household social relationships become formalized in the built-landscape over time. As human populations aggregate, they begin to enhance and formalize social relationships through the construction and manipulation of supra-household "institutions" that help shape human behavior and synchronize human activities across space. Yet how exactly does the institutionalization process perpetuate itself over time? Results from Hawai'i indicate that certain forms of the built landscape, particularly temples and boundary markers, were instrumental in communicating and solidifying the social norms necessary for negotiating new forms of aggregated settlement.

[86] *First Organizer* **[80]** see *Monaghan, George William*

Koons, Michele (Harvard University)

[227] *Examining Late Moche Sociopolitical Organization in the Chicama Valley: A View from Licapa II*

Recent findings at the mid-sized Moche center of Licapa II in the Chicama Valley indicate that it was occupied for a short two century span at the end of the Moche era. Differences in architectural patterning and diverse styles of ceramics and other artifacts in the residential versus monumental sectors suggest that the relationship between these spaces was complex. These findings coupled with other patterns in the valley question the nature of Moche organization as previously considered and the role an organized state may or may not have had over the region during this late period.

[163] see *Sturm, Jennie O.*

Koontz, Cassandra (Vanderbilt University) and John Rick (Stanford University)

[233] *Unceremonious Endings: Burial Treatment, Trauma, and Paleopathology of a Historic Population from Chavín de Huántar, Peru*

Analysis of intrusive human burials (MNI=9) interred at Chavín de Huántar in northern Peru, likely dating to the late 1800s, indicates these individuals performed strenuous activities and that some suffered violent injuries during life. Of the nine individuals, five were males (15-50 years old). Among the five males, 60% present antemortem cranial trauma, and none exhibit perimortem cranial fractures. Cranial trauma was not the mechanism of death in these individuals. Adults suffered from degenerative joint disease, suggesting participation in strenuous labor. Burial treatment and the paucity of

artifacts may indicate hasty interment of the decedents.

Koontz, Rex (University of Houston)

[28] *Problems Left Unsolved: The Iconography of the Classic-Postclassic Transition in Eastern Mesoamerica from a Gulf Lowlands Perspective*

Over the last decade of her life, Linda Schele worked tirelessly on iconographic problems presented by the rise of Chich'en Itza and the Maya collapse. This paper reviews several of Linda's key findings and places them in the context of Gulf Coast iconographic patterns during the same period.

Kopperl, Robert (Northwest Archaeological Associates, Inc.), Christian Miss (Northwest Archaeological Associates, Inc.) and Charles Hodges (Pacific Geoarchaeological Services)

[231] *Evidence of Human Occupation of the Puget Sound Lowlands at the Pleistocene-Holocene Transition from Excavations at the Bear Creek Site (45KI839), Redmond, Washington.*

Artifacts below a 10,000 year-old peat deposit at the Bear Creek site near Seattle are the first Pleistocene-aged materials found in situ in the Puget Sound Lowlands of Western Washington. Preliminary excavations yielded a lithic assemblage characteristic of both Clovis and Western-stemmed Paleoindian projectile point traditions, debitage indicative of discrete reduction episodes, and protein residue data on stone tools reflecting subsistence on a variety of terrestrial mammals and salmonids. Coupled with environmental and geoarchaeological data, the assemblage suggests settlement at the confluence of lake and stream after glacial retreat and prior to wetland formation at the end of the Pleistocene.

Kosiba, Steven (Monmouth University)

[24] *The Politics of Objectification: Converting Places and Constructing Subjects during Early Inka State Formation (Cusco, Perú)*

This paper introduces a conceptual framework for understanding the politics of objectification. Using recent archaeological data from Cusco, Perú, I examine how labor practices that constructed, converted, and demolished pre-Inka objects and places ultimately worked to mobilize early Inka political claims to historicity and social difference. By building colossal walls, destroying valued objects, and monumentalizing long-revered shrines, social actors of the Cusco area recast select places and objects as specifically Inka, thereby producing an Inka landscape and social order to which they themselves were subject. In these situated practices of material transformation, a new political era was inaugurated.

[24] *First Chair*

Koszkul, Wieslaw [14] see *Zralka, Jaroslaw*

Kovacevich, Brigitte (Southern Methodist University), Michael Callaghan (University of Texas at Arlington), Patricia Castillo (Universidad de San Carlos) and Melvin Rodrigo Guzman Piedrasanta (Universidad del Valle)

[9] *"Head of Stone": Archaeological Investigation at the Maya Site of Holtun, Guatemala*

The archaeological site of Holtun is located in the central

lakes region of Guatemala situated approximately 12 km south of Yaxha. Holtun is considered a medium-sized urban civic-ceremonial center and comprises part of a group of epicenters located to the south of Lake Yaxha. Many of these sites contain major monumental architecture dating to the Late Preclassic period (350 BC – AD 0), which is a major focus of this project. In this paper we discuss the history of research and site occupation, characteristics of major architectural groups, and mapping results of the 2010 field season of the Holtun Archaeological Project.

Kovacik, Peter [66] *see Puseman, Kathryn*

Kovalchik, Jacob [5] *see Lipo, Carl P.*

Kowalewski, Stephen (University Of Georgia)
[86] *Discussant*

Kowsz, Erica (Hamilton College) and Nathan Goodale (Hamilton College)

[162] *Ancestral Ties and the Archaeology of Place: Documenting an "Extinct" People*

In 1956, the Sinixt Nation, indigenous to the Upper Columbia River Drainage, was declared extinct by the Canadian Government despite the survival of tribal members in the U.S. Excavations in the Sinixt ancestral territory have provided evidence of continuous occupation for the past 3000 years. Using existing ethnographic and historical sources as a starting point, we filmed interviews with modern-day tribespeople to create a multimedia record of current Sinixt perceptions of their traditional lifeway. Relating ethnographic sources to the past requires exploration of how group identity manifests in the archaeological record and the significance it holds for descendant populations.

Kranzler, Brian (Museum of Northern Arizona)

[20] *Jewelry and Worked Stone Artifacts Along the Grand Canyon River Corridor*

This paper examines jewelry and worked stone artifacts from nine sites along the Colorado River corridor in Grand Canyon. Sites examined include both seasonal and long term habitation sites. Are items of personal adornment traded in or are these items of local manufacture? Does this change through time? Are there raw material sources for jewelry within the canyon? One site examined is Furnace Flats, where a high number of pendants made from green travertine were found in one room. Was this a manufacturing and distribution locus for this particular item?

Krasinski, Kathryn (Fordham University) and Gary Haynes (University of Nevada, Reno)

[30] *Actualistic Research of Proboscidean Processing and Cutmark Production*

Cutmark studies have figured prominently in New World Pleistocene archeology; however, the influence of carcass processing activities, flesh availability, tool type, and raw material on cutmark attributes remains poorly understood. Before utilizing modified faunal remains as proxies for a human presence in the Americas, a thorough understanding of bone responses to cultural modification is critical. An actualistic approach was undertaken to study the effects of butchering large mammal remains including an African elephant carcass

and cattle limbs. While little intertaxonomic variation between cutmark placement was observed, cutmark morphology was complex. Simple V-shaped cutmarks are not diagnostic of stone tool use.

Krasnec, Katina (University of New Mexico) and C. L. Kieffer (University of New Mexico, Maxwell Museum)

[266] *Determining Status in Looted and Sacrificial Contexts at Midnight Terror Cave*

Grave goods have been widely used to identify individuals' status. In cases of looting and sacrifice this approach is limited by the absence or reduced quantity of grave goods. In these cases, overall health, paleopathology and isotopic data can indicate the status of individuals. The application of this approach to osteological material from Midnight Terror Cave, Cayo District, Belize suggests the presence of both elite and commoner sacrificial victims. Different models will be presented to account for their presence as well as the religious and social implications.

Krause, Samantha (Maya Research Program), Thomas Guderjan (University of Texas at Tyler), Sheryl Luzzadder-Beach (George Mason University) and Timothy Beach (Georgetown University)

[238] *Identifying the extent of ancient Maya ditched field systems in the Rio Hondo valley of Belize and Mexico.*

Scholars have long known that intensive agricultural systems were a component of the Classic Maya economy. Early studies identified ditched agricultural field systems and sparked debate whether they were human made distracting from the question of their extent and their role in Maya economy. Recent aerial surveys have revealed that the extent of agricultural intensification in the Rio Hondo valley was not yet well known and probably was underestimated by the archaeological community. We present new data resultant from aerial photography, mapping and GIS that will enable us to better understand the scale and nature of ancient Maya agricultural systems.

Krautkramer, Jesse (Tahoe National Forest)

[29] *Cultural Transmission, Style, and Continuous Variation Among North Central Sierra Nevada Projectile Points*

Changes in the form of material culture over time and space are directly linked to changes in the context of cultural transmission. This implies change in the general social context. Continuous morphological variation in a sample of 673 projectile points from 30 sites both east and west of the Sierra crest is used to examine style in north central Sierra Nevada prehistory. Distinct trends in continuous variation are compared to archaeological contexts associated with C14 dates and obsidian hydration readings. Theories of style and cultural transmission facilitate interpretation of these patterns and provide insight into social changes and longstanding traditions.

Krawchuk, Meg and David Ganz (Climate Change Team, The Nature Conservancy/ Visiting Scholar, UC Berkeley)

[192] *Lessons Learned from Alternative Approaches to Community-Based Fire Management in Yunnan Province, P.R. China*

Yunnan, which means "Beautiful Clouds in the South", is

a province in the most southwest region of China. There is incredible biological and ethnic diversity in Yunnan, which has resulted in a rich heritage of community-based fire management (CBFiM). We examine the diversity of management through three communities and their CBFiM approaches: the village of Wenyime, in Chuxiong Yi Autonomous Prefecture, a village near Shangri La in Diqiang Prefecture, and Liming village in Laojunshan in Lijiang Prefecture. All three examples illustrate a recent shift in direction; a movement away from centralized and state-driven forest fire management towards decentralized and mainly community-based management regimes.

Kremkau, Scott (Statistical Research, Inc.), Seetha Reddy (Statistical Research, Inc.) and Kathleen Hull (University of California at Merced)

[151] *Knapping through time along the coast: Lithic Technologies in the Ballona, West Los Angeles*

The Ballona Lagoon in west Los Angeles encompasses over 8,000 years of human occupation. Lithic collections, including more than 50,000 analyzed for this talk, are composed of primarily subsistence-related tool kits, in addition to a large, unique collection of ritual artifacts. This talk will present major technological changes in lithic artifacts over time in the Ballona, and their implications for food procurement and preparation, trade and interaction. Some of the topics discussed include role of milling equipment, introduction of the bow and arrow, variability in projectile points, site function, and food preparation and disposal behavior associated with feasting.

Kremkau, Scott [80] see *Natoli, Amelia M.*

Krigbaum, John [23] see *Liu, Chin-hsin [206]* see *Olson, Elizabeth Joy*

Kristan-Graham, Cynthia (Auburn University)

[98] *All the Earth is a Grave: Symbolic Ancestral Burials at Tula Chico and Tula Grande*

The Epiclassic-Early Postclassic site of Tula in Hidalgo features many sculpted images of human figures. Recent discoveries in Tula Chico add to the corpus of relief carvings of prone figures already known from Tula Grande. All may be considered deceased ancestors on the basis of pose, costume, and architectural context. I suggest that the imagery can be considered a form of symbolic ancestral burial used for veneration, polity rituals, and the recording of political history.

Kroskie, David (Indiana University of Pennsylvania)

[209] *The Role of Small Habitation Sites in Monongahela Subsistence-Settlement*

Studies centered on Monongahela village sites have contributed significantly to our understanding of Monongahela subsistence-settlement patterns. However, this understanding is limited due to a lack of attention placed on other site types. A comparative study of small habitation and village sites from the same general area and time period provides insight into the complementary role of these sites in Monongahela subsistence and settlement patterns. Specifically, the possibility that small habitation sites were special purpose sites utilized in tandem with village sites can be explored.

Krus, Anthony (Indiana University)

[210] *The Development of Bastions: A Morphometric Analysis of Mississippian Fortifications*

Palisades with bastions were first constructed in the Mississippian region (1000AD-1450AD) and were soon built throughout the Midwest and Southeast. A database of every Mississippian period palisade with bastions was compiled. Using geometric morphometrics as an analytical technique, a typology for bastions on palisades created and used to track how the architecture of these structures developed. It was found that through time bastions became smaller and shifted from closed-back structures to open-back structures. This is interpreted as the product of prehistoric technological developments to decrease how much wood and labor was spent in palisade construction.

Krus, Anthony [115] see *Nathan, Rebecca A. [82]* see *Marshall, Joel*

Kruse-Peebles, Melissa (Arizona State University), Dana Nakase (Arizona State University) and Sharon Hall (Arizona State University)

[223] *Soil Nutrient Dynamics and Moisture Retention of Prehistoric Runoff Agricultural Systems the Perry Mesa Region, Central Arizona*

Prehistoric agricultural land use in the arid to semi-arid American Southwest included runoff agriculture where surface overland flow is directed to fields during intense rainfall events. Construction of small terraces enhanced moisture and fertility conditions by slowing and retaining transported water, organic debris and sediments. This paper presents data from recent soil and runoff collections from the Perry Mesa region of central Arizona. Soil nutrient and moisture dynamics of this runoff agricultural system will be used to discuss prehistoric agricultural potential and evaluate how management of surface runoff and the construction of terraces relate to long-term agricultural sustainability.

[223] *Second Chair*

Kruzick, Zena (UC Berkeley)

[170] *Icons of Death and Sacrifice: Hachas of Southern Mesoamerica*

The iconography of Southern Mesoamerican hachas is rich in evocative symbolism: heads of specific animals, anthropomorphic motifs, particular deities, and powerful depictions of human heads in the jaws of sacred animals. This presentation explores the symbolism of these enigmatic icons and suggests possible organizing principles for their use in the context of the Mesoamerican ballgame.

Kuckelman, Kristin (Crow Canyon Archaeological Center)

[117] *Violence during the Chaco to post-Chaco Transition in the Northern San Juan Region*

The Chaco to post-Chaco transition was a time of marked change among Ancestral Pueblo farmers in the northern San Juan region of the US Southwest. From about A.D. 1130 to 1180, severe drought stimulated and formed a backdrop for population movement, privation, and societal upheaval. Evidence of violence and other hardship evidenced on human remains from numerous sites includes antemortem and perimortem trauma. Violence is also implicated in deposits of human remains

so intensely modified by human actions that cause of death cannot be determined. Careful consideration of affected remains and their contexts illuminates crucial aspects of this important transition.

Kuckelman, Kristin [237] *see* Martin, Debra L.

Kuhn, Steven (University of Arizona) and Ron Shimelmitz (University of Arizona/Tel Aviv University)

[218] *Shifting views of the Acheulo-Yabrudian and the Lower to Middle Paleolithic transition at Tabun Cave.* After more than 80 years Tabun cave remains one of the key reference sequences for the Lower and Middle Paleolithic of the Levant. Assemblages termed Acheulo-Yabrudian or Mugharan make up a large part of the sequence at Tabun. Different investigators have placed these assemblages within either the Lower or the Middle Paleolithic. Alternative classifications of the Acheulo-Yabrudian reflect changes in how the larger periods themselves are conceived. Choices to place the Acheulo-Yabrudian within either the Lower or Middle Paleolithic also have important consequences for how cultural and biological transitions in the Levant are understood.

Kuijt, Ian (University of Notre Dame) and Colin Quinn (University of Michigan)

[226] *Body to Ashes: Social and Physical Transformations Through Cremation*

Cremation rituals are often conceptualized as reflecting a journey and the transformation of the body and spirit. Burning is a means of destroying, consuming, and transforming the body in a way that introduces control, allowing the living to manipulate the time and place of interactions with the dead. Drawing upon multiple case studies we consider the pathways of transformational treatments of the body, from cremation, to where the bones were cleaned and transported, and finally, the place where the remains were deposited.

[226] *Second Organizer*

Kuijt, Ian [107] *see* Nauman, Alissa **[226]** *see* Quinn, Colin P. **[107]** *see* Conway, Meagan **[107]** *see* Lettieri, Philip R. **[107]** *see* McNeill, Casey M. **[107]** *see* Lash, Ryan P. **[107]** *see* Gunter, Madeleine

Kuiken, Garrett (Garrett Kuiken) and Lauren DeOliveira (CSU - Channel Islands)

[105] *Preliminary Analysis of a Coastal Californian Chumash Site*

This is a preliminary analysis of materials from CA-VEN-167. This coastal site is located in southern California adjacent to the Santa Monica Mountains and Mugu Lagoon. The site was first surveyed in 1965. The current study analyzes the distribution of archaeological artifacts and ecofacts collected through excavation. Obsidian hydration and radiocarbon samples indicate that this site dates to the later Middle Period (200 AD -700 AD). Data analyzed as a part of this study represent the first materials recovered from an excavated context.

Kunesh, James [181] *see* Gaines, Edmund P.

Kurin, Danielle (Vanderbilt University) and D. Enmanuel Gomez Choque (Universidad Nacional San Cristobal de Huamanga)

[245] *No pain, no gain: post-imperial violence and ethnic solidarity among the Chanka of highland Peru (AD 1000-1400)*

This paper employs a bioarchaeological perspective to investigate the ways people physically and socially interacted with one another in the wake of tumultuous socio-political and environmental changes. Here we examine how the disintegration of the Wari Empire affected hinterland Chanka communities in Andahuaylas, Peru. This research examines a large collection of human skeletal remains excavated from burial caves in order to discern how communities on the local level responded to the post-imperial milieu through changes in identity-marking practices like cranial modification, and an increase in intentional physical injuries suggestive of violence, variably directed towards specific sub-populations groups.

[245] *First Chair*

Kurin, Danielle [245] *see* Pink, Christine M **[233]** *see* Gabbard, Aubree A.

Kurnick, Sarah (University of Pennsylvania)

[9] *Political Authority among Ancient Maya Mid-Level Elites: 2010 Excavations at Callar Creek, Belize*

Archaeologists have devoted considerable attention to the operation of political authority among the ancient Maya, particularly within and among the major centers. A few archaeologists have examined how political authority operated at smaller centers, especially those lacking epigraphic and iconographic information. Recent investigations at a mid-level elite compound – located at Callar Creek, in the Mopan Valley of Belize – have considered how individuals at such smaller centers acquired and maintained their authority. This paper will report the results of the 2010 excavations at Callar Creek and will consider how these results bear on issues of ancient Maya sociopolitical organization.

Kvavadze, Eliso [203] *see* Bar-Yosef, Ofer

Kvetina, Petr (Institute of Archaeology Prague, Czech Republic) [110] *Discussant*

Kwak, Seungki [4] *see* Marwick, Ben

La Favre, Karl (UCLA)

[6] *Highland South-Central Andean Archaic Population: An Analysis of Projectile Points from the Qawra Thaki Survey*

The recent publication of a chronological typology of projectile points for the south-central Andean highlands (Klink and Aldenderfer 2005) provides new opportunities in the study of surface survey collections from this region. This study examines one such collection, the material from the Qawra Thaki project. Population size through time and space is the focus of this study. The work of other researchers in the Río Ilave (Craig 2005) and Río Huenque (Klink 2005) drainages provides comparative data; the results of the present study similarly suggest a Late Archaic population boom, but substantially smaller population sizes in the Qawra Thaki area.

LaBelle, Jason (Colorado State University), Jason Sibold (Colorado State University) and Laurie Huckaby (United States Forest Service)

[192] *Glass Beads, Conical Lodges, and Fire Scars: Native American Occupation of the Colorado Front Range*

Archaeological research has furthered our understanding of recent Native American occupation (AD 1600-1870) of the grasslands, foothills, and mountains of northern Colorado. Site types include habitations, rock art panels, game drives, ritual locations, and burials. These locales are found in a variety of ecological communities, suggesting widespread cultural use of diverse habitats. Fire ecologists have also built a chronology for this same span and across ecosystems, identifying natural fire patterns as well as possible anthropogenic signatures within the regional fire history. Our presentation focuses on the methodology of our on-going research and preliminary observations in linking archaeology with fire ecology.

Lack, Andrew (Arizona State University), Sophia Kelly (Arizona State University), David Abbott (Arizona State University), Joshua Watts (Arizona State University) and Pamela Cox (URS Corporation, Phoenix, AZ)

[187] *The Duration and Extent of Specialized Red-on-buff Production among the Hohokam along Queen Creek in the Phoenix Basin*

Intensive production of Hohokam red-on-buff pottery occurred along the middle Gila River in the Phoenix Basin of southern Arizona. Recent research indicates that villages in the vicinity of Queen Creek may have also been important production locales. The timing and scale of production at Queen Creek, however, has not yet been documented. Utilizing ceramic sourcing techniques, this study confirms that production occurred in the Queen Creek area over several centuries. This production increased in the late 11th and early 12th centuries following the demise of the ballcourt system and coinciding social fragmentation across the Phoenix Basin.

Lack, Andrew [187] see Abbott, David R.

Lacombe, Sebastien (Binghamton University), Margaret Conkey (University of California, Berkeley) and Kathleen Sterling (Binghamton University)

[218] *Legacies of Paleolithic research in the French Central Pyrénées*

As one of the geographic regions of Europe where prehistoric research and activities were first undertaken in the late 19th/early 20th centuries, there are deep traditions and archaeological legacies that have structured what we today consider the archaeological record of the region. For the most part, it has been cave-oriented research, including a focus on the Paleolithic arts. We will review some of the key contributions of longstanding research activity but also address some of the explicit and implicit limitations that have resulted from such a history.

Lacombe, Sebastien [153] see Sterling, Kathleen

Ladefoged, Thegn (University of Auckland), Julie Field (Ohio State University), Patrick Kirch (University of California, Berkeley), Michael Graves (University of New Mexico) and Andrew Flaws (University of Auckland)

[261] *The distribution of residential features and changing land use in the leeward Kohala field system, Hawai'i*

Clusters of Hawaiian residential architectural features are often interpreted as the remains of ethnohistorically defined kauhale habitation complexes. Within these residential entities separate structures were used for activities such as cooking, eating, and sleeping. An analysis of 331 residential features from upland Makiloa and Pahinahina ahupua'a suggests that not all spatial associations have short-term behavioral significance. By focusing on the morphological attributes of features as indicators of chronological and behavioral trends the spatial analysis of features informs on ecodynamic processes of long-term land use within the larger context of the development of the Leeward Kohala Field System.

Ladefoged, Thegn [261] see Vitousek, Peter

Ladwig, Jammi (University of Minnesota, Twin Cities)

[35] *Geometric Morphometrics Applied to Grass Phytoliths*

Within the Poaceae family of plants there is a high degree of redundancy in size and shape of active silica-accumulating short cells. The rondel phytolith morphotype has received much attention in attempting to differentiate between taxa. Geometric morphometrics allows one to consider shape using landmark data, thus allowing the researcher to utilize powerful statistical analyses in novel ways. This poster presents the results of a geometric morphometric analysis of rondel phytoliths from three species of grass: *Zizania palustris* (wild rice), *Zea mays* (corn), and *Leersia oryzoides* (rice cutgrass).

Laffey, Ann (University of Florida)

[103] *Guerreros, condors, and staff bearers, guardians of ancient Andean time: Monumental calendric reliefs of the Moche and Tiwanaku.*

Reliefs from the ancient Andean empires of the Moche (A.D. 100-800, Peruvian Andes) and the Tiwanaku (A.D. 400-1100, Peruvian-Bolivian Andes) are presented as lunisolar-Venus calendric compositions. The "Guerrero" or Warrior (Moche) and the Gate Way of the Sun (Tiwanaku) reliefs consist of forty-eight characters arranged in a grid and are displayed within monumental architecture. The interpretation of the reliefs is founded on a base-ten numeric system, the construct of a Wari calendric textile (A.D. 600-1000, Peruvian Andes), and the socioeconomic organization of the Moche and Tiwanaku empires who utilized the reliefs for ritual, tribute, and mit'a (corvée) coordination.

[103] First Chair

Lakatos, Steve [37] see Blinman, Eric

Lalande, Jeffrey (LaLande Archaeology and History Services)

[192] *So, Just How Extensive Was Anthropogenic Fire in the Pacific Northwest and California?: Southwestern Oregon as a Case Study*

Recent debate over the geographic extent and environmental importance of anthropogenic fire in the Pacific West has led to oversimplification and overstatement by some on either side of the argument. The ethnographic record for Native burning practices in the southwestern portion of Oregon -- an area

considered transitional between the traditional Northwest Coast, Columbia Plateau, and California culture areas -- is a relatively detailed one. When combined with basic fire-ecology characteristics of the areas' three main vegetation zones, this record permits improved understanding of the relative amounts and distribution of anthropogenic fire in those zones.

Lam, WengCheong (Harvard University)

[228] *"Private" Ceramic Workshop in the Late Qin State (300-200 B.C.): A case study of stamped ceramics from Xiyang region, China*

Based on the study of stamped ceramics from the Qin state, this article is going to show the possibility of going beyond the dichotomy between attached and independent specialization. Analyses of inscriptions and archaeological contexts related to the this special kind of ceramics show that production activities, although were engaged by levels of household units, were not absolutely independent to each other but rather integrated into a large social network dominated by government. This article also wants to call attention to the study of production procedures so that relationships between production units and other institutions can be better illustrated.

Lamberg-Karlovsky, C (Peabody Museum) [13]

Discussant [114] Discussant

Lambert, Patricia (Utah State University)

[71] *Traumatic Injury at Cerro Oreja: Violence and Occupational Risk in the Moche Valley during the Early Intermediate Period*

Traumatic injuries in human skeletal remains from Cerro Oreja in the Moche Valley of northern Peru provide a basis for reconstructing patterns of violence and accidental injury during the Early Intermediate Period, ca. B.C. 400-100 A.D. Both healed and perimortem cranial injuries are present in the remains from Cerro Oreja, providing support for arguments based on settlement survey data that the Salinar and Gallinazo Phases were marked by conflict and warfare. A relatively high injury rate overall may be associated with aggression, but could also reflect the occupational risks of living and working on the steep slopes of Cerro Oreja.

[184] *Discussant [71] First Chair*

Lambert, Shawn (Panamerican Consultants Inc.) and Steven Meredith

[6] *Illustrating important variables in Early Archaic Gulf Coastal Plain projectile point classification.*

Projectile point form remains the only means for inferring the age of archaeological components. This is especially true for surface finds, which can be the backbone of regional studies. This poster focuses on Early Archaic projectile point classification, and how graphic illustration can be a useful tool for communicating minor variation in form which can indicate a difference in hundreds of years for a date of manufacture. Such illustration can be effective for this set of artifacts which often were subjected to several stages of modification in their use life.

Lamoureux St-Hilaire, Maxime (Trent University)

[40] *The Last Inhabitants of Minanha: Examining the Differential Abandonment of an Ancient Maya*

Community

Towards the end of the Classic Maya period, many southern lowland city-states were gradually abandoned. How did this abandonment process play itself out? What did it signify for the ancient Maya who had lived in those landscapes for centuries? This paper addresses these questions by looking at on-floor assemblages from a dozen residential groups at the ancient Maya center of Minanha. Representing contexts spanning the entire social spectrum, from commoners to royal elites, the paper explores how the "collapse" differentially affected different segments of society. It also examines the social identities of the last occupants of the Minanha community.

Landa, Olga (Zona Arqueologica de Monte Alban, INAH)

[95] *La arquitectura monumental de Atzompá: Las plataformas exploradas.*

La arquitectura monumental de Atzompá muestra hasta tres etapas constructivas, con evidencias de diversas adecuaciones en el crecimiento, modificación de las estructuras y de la ornamentación que en ocasiones es manufacturada de manera apresurada y superficial ya que muchas de las veces los elementos arquitectónicos desplantan o se adosan sobre la roca madre que sirve de cimentación natural a los cuerpos. Entre las propuestas de las temporadas de campo del Proyecto Arqueológico del Conjunto Monumental de Atzompá se encuentran 4 plataformas con similitudes y diferencias muy marcadas. Las exploraciones recientes han sacado a la luz características arquitectónicas singulares de éstas.

Landau, Kristin (Northwestern University)

[128] *Measuring Social Interaction within Copán's Communities*

Although archaeologists have long researched the elite core of urban Copán, distinct communities on the outskirts lie uninvestigated. In this paper I explore the social organization of rural communities, with specific attention to eight so-called paired groups and reasons for their spatial configuration. I evaluate these reasons by performing various statistical analyses in GIS to define and measure ancient social interaction and inequality. The same methodology can be inversely applied to present-day Copán so that communities might develop more harmoniously, especially in areas where ancient ruins and modern interests intersect.

[128] *First Chair*

Lane, Brian (University of Hawai'i) and Vernon Scarborough (University of Cincinnati)

[119] *Terrestrial Coring Techniques and Water Management*

Soil cores have proven enlightening for many fields of study. More common are the wet cores used to provide palynological data and other environmental indicators. A different coring technique that employs dry-land coring to sample stratigraphy and cultural material has been utilized effectively for understanding a continually changing landscape, especially in conjunction with test pits and other data collecting strategies that are time intensive. This paper presents a case study for a particular dry-land coring device use to understand best the water management systems at Tikal.

Lane, Brian [119] *see Scarborough, Vernon*

Lange, Frederick (LSA Associates) [183] *Discussant*

Langenwaller, Paul (Biola University, La Mirada, CA)

[70] *Dog Burial and Related Ceremonial Activity among the Miwok and Yokuts of the Sierra Nevada in California*

Dog burials are widely distributed in California archaeological sites. Ethnographic and archaeological studies indicate that the Miwok and Yokuts people along the western slope of the Sierra Nevada Range buried dogs and integrated them into a number of ceremonial contexts. There is consistency in burial position among known dog burials, but variations in grave accoutrements and evidence of perimortem trauma suggest that multiple social contexts were involved in the practice.

Archaeological evidence helps to clarify the ethnographic record, but burials must contain specific attributes to support inferences about context and function, including pet burial and property destruction.

[70] *First Chair*

Langlie, BrieAnna (Washington University in St. Louis) and José Capriles (Washington University in St. Louis)

[129] *Plants in a Pastoral Economy: Macrobotanical Analysis of a Formative Wankarani Site*

Previous research regarding the Formative Wankarani cultural complex (1500 B.C. - A.D. 400), located in the central highlands of Bolivia has revealed an agropastoral economic subsistence. Here, we introduce a preliminary macrobotanical analysis from the Formative site of Irucirca. By concentrating on samples from diverse features including both domestic and corral contexts, this research reveals detailed insights into Formative economy and interactions with the ecological landscape. This data further contextualizes the economy of the Wankarani complex in the dynamic Andean Formative.

Lankton, James (UCL Institute of Archaeology), Laure Dussubieux (Field Museum of Natural History, Chicago), Bernard Gratuze (Institut de Recherche sur les Archeomateriaux, CNRS, Orleans), Patrick Degryse (Centre for Archaeological Sciences, K.U.Leuven) and Boonyarit Chaisuwan (Fine Arts Department, Phuket, Thailand)

[100] *First Millennium CE Bead Production in Southern Thailand*

The recovery of large numbers of glass beads from sites in southern Thailand dating to the first millennium CE provides abundant evidence for the importance of beads to the economic and cultural life of the communities there. While it is commonly assumed that many or most of these beads were locally produced, the actual evidence is rather limited. In this presentation we will briefly review some of this evidence, emphasizing newer scientific techniques, in order to solve the puzzle of imports vs local production. In addition, we will consider possible cultural and economic factors behind the observed patterns.

Lapp, Jennifer (University at Buffalo)

[132] *The shell mounds of LaFlor, Nicaragua and their significance in Nicaraguan prehistory.*

An archaeological survey spanning two field seasons

was conducted in LaFlor, Nicaragua. Shovel tests, as well as units, were placed within a grid to investigate the area. It was determined to be a large and potentially long-term settlement. Items that were encountered include mollusc remains, lithic debitage, faunal and human remains, ceramic materials and shell mounds. The data indicate that the persons of LaFlor relied heavily on mollusc procurement, which may have tied into an economic exchange system. LaFlor was evidently a significant precolumbian settlement for both the living and the dead.

Larson, Dorothy (Maxwell Museum)

[264] *Why Not Typology? A Case Study from the Albuquerque District of the Northern Rio Grande region.*

This paper explores the ways in which a strictly typological approach to ceramic technological and decorative style may limit research that focuses on social identity and migration. This issue is evaluated within the setting of the late Developmental-Coalition transition (AD 1050-1200s) in the Albuquerque District of the northern Rio Grande region of the American Southwest. I describe the methodological transformation from a typological study (focused on Socorro and Santa Fe Black-on-white) to a non-typological approach. I conclude that the differences between the approaches shape research in significant ways that are not merely a matter of semantics.

Larson, William (Archaeological Research Center, CSU, Sacramento), Bridget Wall (ARC CSUS) and Mark Basgall (ARC CSUS)

[239] *The Smith Creek House Pit Site: Archaeological Investigation of an Ethnographic Village.*

In late 2009 the Archaeological Research Center at CSU, Sacramento, in conjunction with the Bear River Band of Rohnerville Rancheria, conducted test excavations at the ethnographic village of "Nole-Bi" and an adjacent rock shelter located at the confluence of Smith and Larabee creeks in Humboldt County, California. This paper examines ethnohistoric data pertaining to these and other local settlements in relation to results of the archaeological investigations.

Larsson, Asa (Societas Archaeologica Upsaliensis) and Liv Nilsson Stutz (Oxford College of Emory University)

[226] *Irreconcilable Differences? Cremation, Fragmentation and Inhumation in Mesolithic and Neolithic Sweden*

Archaeological analyses of mortuary practices have seen cremation and inhumation as radically different and almost irreconcilable strategies to handle human bodies after death. Coexistence of the two practices has been noted, but these observations have often been seen as an anomaly, and the discourse has tended to reproduce the idea that the practices represent fundamentally different approaches to disposal of the dead. However, deeper attention to the co-existence of cremation and inhumation at several Mesolithic and Neolithic sites in Sweden shows that they can be part of coherent mortuary programs aimed at separating flesh from bones.

Lash, Ryan (University of Cambridge), John O'Neill (Cultural Landscapes of the Irish Coast Project),

Terry O'Hagan (University College Dublin) and Ian Kuijt (University of Notre Dame)

[107] *Raiders of the Lost Shark: Re-discovering St Leo's Chapel, Inishark, Co. Galway*

One module of the CLIC project on Inishark focused on St Leo's Chapel, whose medieval fabric belies a deeper history than its relatively late appearance in the documentary record in the nineteenth century. Re-survey and excavation in 2009 and 2010 established the original layout of the church and a construction date of 1050-1130. Three trenches opened around the eastern gable identified burials beneath stone lintels and a leacht (a penitential station). The latter neatly ties St Leo's Chapel into a wider pilgrimage circuit incorporating numerous monuments on the island that is also emerging from detailed study of the associated folklore.

Lastra, Yolanda (Instituto de Investigaciones Antropológicas)

[21] *Otomí language and history*

Taking into consideration present-day distribution of Otomí speakers and reviewing what is known of their former history we can begin to have an idea of the extension of the territory they once occupied. Mexica conquests divided it and, while incorporating some Otomí traits, they no doubt obliterated much of what had been Otomí contributions to Mesoamerican culture. Aztec speakers despised the Otomí; their attitude was transmitted to the Spanish conquerors and from them to Mexican and other researchers. It is to be hoped that as interest in them increases, they will be recognized as very important contributors to Mesoamerican culture.

Laurence, Andrew (Texas A&M University) and Alston Thoms (Texas A&M University)

[35] *Microscopic Revelations from Pre-Columbian Earth Ovens in Central Texas*

Microfossil analysis is an important method for obtaining direct evidence of plant utilization. Recent experiments attest to its potential application as a method of investigating specific functions of cooking features with stone heating elements. This poster presents initial results of microfossil analysis of FCR from five earth ovens in central Texas. Calcium carbonate deposits on FCR yielded starch grains, phytoliths, and calcium oxalate crystals from yucca (*Yucca cf. baccata*), along with other unidentified species. It is yet unclear as to whether yucca and some of the unidentified species were utilized as food or packing material.

Laurence, Andrew R. [35] *see Thoms, Alston V.*

Laursen, Steffen (Moesgaard Museum & Aarhus University)

[47] *Gulf and Dilmun Type seals: The Post-Harappan life of the Indus valley seals tradition, c. 2100 – 1600 BC.*

From around 2100 BC a glyptic tradition emerges in the Arabian Gulf, which is dependant on the well-established schools of the Indus Valley seal cutters. These circular hybrids of classic Harappan seals rapidly became popular amongst the merchants of Dilmun, centred on Bahrain Island. At first these 'Gulf Type' seals drew heavily on Indus Valley iconography and Indus script was occasionally implied in a pidgin-like manner. While the earliest circular seals incorporate features from Mesopotamian glyptic only to a lesser extent, this

becomes a more important source of inspiration for later Dilmun Type seals.

Law de Lauriston, MacLaren (University of Tulsa)

[231] *A Paleo-Archaic Through Caddoan Site in Eastern Oklahoma*

A site at Fort Gibson Lake in Eastern Oklahoma has yielded late Paleoindian through Caddoan artifacts that provide a glimpse of the dynamic nature of the area, and may shed further light on the cultures that used the site through time and space. This paper focuses on the general findings of the Three Fingers Bay site and artifacts, and includes terrestrial, foreshore and marine archeological investigations of the immediate site vicinity.

Lawrence, Ken (SWCA-Texas State University)

[10] *A Recalibrated Geoarchaeological Framework of Texas*

As part of research for a master's thesis, a recalibrated radiocarbon baseline was constructed and used to compare the depositional histories of select drainage basins as well as examine possible climatic influences on the drainages and, by extension, Texas archaeology. Specifically, this paper will discuss the results of a recent archival study of select archaeological-geoarchaeological research projects in Texas that focused on alluvial deposits of Texas river basins. The research targeted projects with chronometric data from sites with deep, intact alluvial stratigraphy, which encompassed the Late Pleistocene–Holocene. Subsequently, select radiocarbon assays from these previous investigations were compiled and recalibrated using the same calibration curve (i.e., INTCAL09). Ultimately, the uniform calibration of the radiocarbon assays provided a consistent chronological framework for all of the previous investigations that could be used to compare drainage basins, paleoenvironmental data, and cultural chronologies across Texas.

Lazcano, Jesús [21] *see Lazcano Arce, Carlos*

Lazcano Arce, Carlos (Coordinación de Humanidades-UNAM) and Jesús Lazcano (Universidad Nacional Autónoma de México)

[21] *La identidad étnica de los habitantes prehispánicos del Valle Puebla-Tlaxcala. Su contrastación mediante el espacio domestic*

El objetivo del presente trabajo consiste en exponer la propuesta teórico-metodológica con la cual hemos venido trabajando para dar cuenta de lo étnico en las sociedades del pasado. Partimos del principio que la identidad étnica es una dimensión de la realidad social que sólo las sociedades concretas con cierto nivel de desarrollo presentan; esto implica cuando menos, explicar los aspectos y procesos fundamentales que intervienen en su conformación, así como aquellos involucrados en su transmisión y perpetuación. Nuestro interés radica en darle rostro a los grupos que habitaron el Valle Puebla-Tlaxcala durante el periodo Epiclásico (650-950 d. C.).

Lazrus, Paula Kay (St. John's University)

[4] *Utilizing tax and notarial documents to re-imagine a post-medieval landscape*

The landscape around Bova, southern Calabria is typical of the foothills of the Aspromonte, although changing fast.

In the last decade land has become increasingly enclosed and EC initiatives have encouraged people to make agricultural choices they might not have chosen otherwise. Erosion has played an important role in shaping the contemporary ecology. Looking back at traveler's descriptions, diaries, tax and notarial records, we glimpse the area as it was in the 17 and 1800s. Using these documents it is possible to initiate the process of re-imagining the landscape and consider the social and economic implications for the local inhabitants.

[78] *Discussant*

Leach, Melinda (University of North Dakota)

[179] *Technology and Mobility in the Archaic Northwestern Great Basin: a View from the High Rock Country*

The prehistory of Archaic peoples in the northwestern Great Basin has been characterized by long-term fluctuations in climate, technology, population, and mobility. The view from the High Rock Country of northern Washoe County, illuminates a picture of culture change. With technological, chronological, and volcanic sourcing evidence from the Massacre Lake Basin and Serendipity Shelter, a strategically-located rockshelter with abundant evidence of tool production, food preparation, and possible ritual production of rock art, I explore variation in local lithic production systems across diverse ecozones. Some critical comparisons are also drawn with studies completed in the larger northwestern Great Basin region.

Leach, Peter (John Milner Associates, Inc.)

[265] *Prospection for Submerged Prehistoric Sites In Marine Environments: A Case Study From The Damariscotta River Estuary, Maine*

Marine geoarchaeological investigations in the Damariscotta River estuary identified a preserved paleosol at -12.67 meters MLW and 6300 14CyBP. A combination of subbottom profiling, side-scan sonar, marine vibracoring, and GIS revealed extensive reworking of much of the study area through tidal channel migration and current scour. The paleosol, however, was preserved through indirect bedrock armoring and biodeposition by relict oyster beds. While no cultural materials were identified, the presence of a well preserved paleosol in subbottom profiles and marine cores is an encouraging case study in prospecting methods for submerged prehistoric sites and geomorphic factors leading to site preservation.

[265] *Discussant* [265] *Second Organizer* [80] *see Lloyd, Timothy C.* [265] *see Chadwick, William J.* [105] *see Ford, Ben L.*

Leap, Lisa [20] see Balsom, Janet R.

Leary, Jim (English Heritage)

[42] *Authoring the Mound. Recent work at Silbury Hill, UK.*

Silbury Hill is an iconic monument within the Stonehenge and Avebury World Heritage Site, and the largest prehistoric mound in Europe. Following a collapse on the summit, an earlier tunnel into the Hill was re-opened. The ensuing excavations in 2007/8 were perhaps the last opportunity for our generation to look at the construction sequence of this monument. This paper, presented by the director of the excavations, will discuss how this work

has allowed us to rethink the Hill, suggesting that the sequence is considerably more complex – the mound growing organically through many small events, rather than a few grand statements.

LeBlanc, Allison [202] see Bain, Allison

LeBlanc, Kathleen (Simon Fraser University)

[5] *Gender Ceramic Ethnoarchaeology in Fiji*

I propose to showcase a poster related to my research on ceramic ethnoarchaeology in a traditional pottery district in Kadavu, Fiji. My research, focusing on gendered social interaction, has demonstrated that relatively homogeneous ceramic assemblages can result from patrilineal residence patterns due to pressure placed on women to conform to the village style. This pressure results from the social interaction during the production process. Despite some variation in size and shape of cooking vessels (kuro), women actively work to emulate the shape of pots that have come before them and show no desire to alter the traditional style.

LeBlanc, Steven (Harvard University), Michele E. Morgan (Peabody Museum, Harvard University) and Jason H. Curtis (University of Florida)

[203] *Seasonal variation in maize consumption by Eastern and Western Basketmaker II populations indicated by stable isotope analysis of human hair*

Maize was an important dietary staple for Eastern and Western Basketmaker II populations in the southwestern United States. However, there was considerable intraannual variation in the amount of maize consumed by individuals. Human scalp hairs (n=50) from Eastern and Western Basketmaker II individuals display marked intraindividual variation in stable carbon and nitrogen isotope values. Sequential sampling along single strands of hair yielded isotopic values and variability indicating that for several months of the year wild plants and/or meat contributed importantly to Basketmaker II diet. This newly emerging technique can be usefully applied to other populations.

Leckman, Phillip (Statistical Research Inc.) and Nicholas Reseburg (Statistical Research, Inc.)

[80] *Reporting Hydrological Histories for Archaeological Resources: The Inundation Assessment Tool*

Archaeological sites located along lakes and reservoirs experience unique adverse effects due to wave action, inundation and other hydrologic events and resource managers must deal with these very real impacts to cultural resources. During recent NHPA Section 110 compliance surveys for the Corps of Engineers, SRI developed a tool to help provide resource managers with baseline data for these effects. This database-driven tool provides a detailed inundation report for recorded sites around the reservoir including inundation episode duration in days, number of episodes, and more by using historic pool elevation data and comparing it to recorded site elevations.

LeDoux, Spencer (University of Wisconsin-Milwaukee)

[235] *Spatial Relationships and Burial Patterns at the Lake Jackson Site, Florida*

The Lake Jackson site is a Mississippian mound center

located near modern day Tallahassee, FL. An excavation of Mound 3 during the late 1970s unearthed 23 burials that established ties to the Etowah site in Georgia. A GIS program was used to analyze spatial relationships among the burials. Based on the artifact assemblages and burial orientation, this preliminary research identified three distinct burial patterns. One of the burial patterns suggests a new kinship or lineage introduced to Mound 3. This research has implications on the changing relationships between kinship and ideology at Lake Jackson.

Lee, Chris [153] *see Morrison, Alex E.*

Lee, Christine (Inst. Vert. Paleontology and Paleoanthropology)

[23] *Preliminary analysis of human skeletal remains from a Dian culture cemetery, Yunnan Province, China*
The Jinlianshan site is an Eastern Han Dynasty (25-220 CE) Dian cemetery. There are few completely excavated mortuary sites from southern China. Over 400 individuals were recovered from 268 tombs. This study uses physical anthropology methodologies including paleopathology, developmental defects, and dental anthropology to determine the lifestyle, health status, and biological affinities of the cemetery sample. Preliminary findings show Jinlianshan to be closely related family members from a high percentage of shared genetic defects. Their dental health suggests a high carbohydrate (rice) and soft protein (fish) diet. One interesting finding is evidence of crush injuries possibly consistent with earthquake activity.

Lee, Craig (Univ of Colorado - Boulder), Robert Kelly, Ira Matt, Rachel Reckin and Marcia Pablo

[57] *Alpine Snow and Ice as a Source of Archaeological and Paleoecological data in the Rocky Mountains*
Archaeological materials have been identified in association with relatively static snow banks, or "ice patches," that attracted animals and their human predators in western North America. Ice patches exhibit little internal deformation or movement and can contain ancient ice that, unlike glaciers, is kinetically stable and preservative. Archaeological and paleobiological materials recovered in these contexts provide insight into alpine paleoecology and the use of high elevation environments by Native Americans. This presentation will review efforts to identify and survey ice patches in the Rocky Mountains and highlight a collaborative effort between university, tribal and government partners in Glacier National Park.

Lee, Gyoung-Ah (University of Oregon)

[35] *Archaeological Perspective on Origins of Azuki Bean (*Vigna angularis* ssp. *angularis*)*

Azuki bean (*Vigna angularis* subsp. *angularis*), is probably domesticated in northeast Asia. Its wild counterpart, *A. angularis* subsp. *nipponensis* is grown throughout East Asia. The earlier archaeological finds of azuki are from the Neolithic Korea (Chulmun) and Japan (Jomon). Difficulty in studying archaeological azuki lies in the preservation issue. Azuki is similar to mung bean (*V. radiata*), and without preservation of embryo, the two cannot be distinguished in archaeological context. This study documents the morphological characters of early azuki from the Chulmun sites, and compares them to

Jomon specimens in order to illuminate the prehistoric management of azuki there.

Lee, JiHyun Rachel (University of Michigan) and Ho Pil Yun (Gyeongnam Development Institute Historical Cultural Center)

[149] *Social and Spatial Changes in the Early Villages of South Korea*

Changes in social organization from ca. 1500 to 300 B.C. can be detected through overall changes in architecture and site layout in south-central South Korea. The villages of the Mumun period saw several material changes through time, including greater reliance on agriculture and craft specialization. In addition, domestic and corporate structures were transformed, with indications of social ranking. A contextual examination of intra-site spatial relationships serves to reveal the changes of the built environment and their implications in this period of South Korea.

Lee, Rachel [3] *see Li, Min*

Lee, Sungjoo

[149] *Understanding Leadership Types from Burials*

From early intensive farming societies to early states, varying material, economic, ideological, and prestigious bases have characterized leadership power. To understand the emergence of centralized political systems of early states it would be helpful to define the nature of power that leaders of regional polities used and tried to gain strategically. Assuming that power bases that leaders in different regions and/or periods attempted to exploit were represented in burial ceremonies, I define the leadership types by comparing burials. According to the variations of their burials, it is possible to classify chiefs of prehistoric and proto-historic Northeast Asia into four types.

Lee, Thomas A. [51] *see Lowe, Lynne S.*

Leech, Rhonda (Ts'kw'aylaxw First Nation), Suzanne Villeneuve (Simon Fraser University), Darcy Matthews (University of Victoria), Andrew Watson (Anterra Consulting) and Brian Hayden (Simon Fraser University)

[176] *Research Directions at the McKay Creek Pithouse Village Site*

McKay Creek is one of a handful of large prehistoric winter villages that occur along the Mid-Fraser Region of British Columbia. These are some of the largest prehistoric communities in Interior Western Canada and constitute a critical heritage resource for understanding past societies in this region. Many questions remain about these communities, such as precisely when they developed and were abandoned and the climate and resource conditions surrounding these changes. Research at McKay Creek begins to examine these important issues while working toward site protection and increasing awareness of the archaeological heritage along the Fraser River.

Lefebvre, Karine (Univ. Paris I Panthéon-Sorbonne)

[58] *"Tarascan and Mexica": New approach on the Late Postclassic settlement pattern in the Acámbaro region (Guanajuato, Mexico).*

During the mid-15th century, the Acámbaro region,

Guanajuato, became one of the Tarascan-Mexica Empire border zones. Information from this time period is available in 16th century Prehispanic and colonial documents. Here I add to the documents by incorporating recently recovered archaeological data to highlight some of the characteristics of the prevailing political and settlement organization model.

Leftwich, Brent (URS Corporation)

[57] *Form Follows Function: Bedrock Mortar Morphology and Settlement in the North-Central Sierra Nevada*

Ubiquitous throughout the north-central Sierra Nevada, bedrock mortars are synonymous with the acorn economy of the Late Prehistoric. This research project in Eldorado National Forest along the North Fork of the Mokelumne River utilized the functional variable of mortar depth from over 300 bedrock mortar sites and juxtaposed it with elevation, site size and complexity, and dominant vegetation using quantitative methods and GIS spatial analysis. The results of this approach indicate a pattern of central place optimization, permanent settlement, and risk buffering on the regional scale, while subsistence activities at the individual site proved highly variable.

[57] First Chair

Leger, Jessica (Pennsylvania State University)

[204] *The Function of Shell Deposits in the Mid-Continent*

Middle to Late Archaic sedentary hunter-gatherers of the mid-continent are associated with shell deposits. Controversy concerning these sites involves interpretation of their function. First, were these shell deposits intentionally constructed monuments or simply debris heaps? Second, did human burials in the shell deposits constitute formal cemeteries or merely convenient burials on the landscape? A single site has been systematically examined for these issues, with results suggesting it was not an intentionally constructed monument or a formal cemetery. I examined another small site to identify the potential for developing a larger scale research project that addresses these particular issues.

Lehner, Joseph (University of California - Los Angeles)

[167] *Innovations in technology and political economy during the Central Anatolian Iron Age*

This paper explores the role of long distance trade and technology in the development of early urban societies in Central Anatolia. In particular, this paper focuses on major changes in metal technology and acquisition at the urban site of Kerkenes Dag (ca. 7-6th centuries BC). Shifts in producer-consumer networks are observed to coincide with major structural changes in political organization. Organizational trajectories of resource-based networks thus become a crucial element in understanding early urban societies.

[167] First Chair

Lekson, Stephen (University of Colorado)

[94] *The Later Prehistory of the Great Basin and the Southwest: Thinking about Fremont*

For decades, archaeologists have debated the origins and meanings of "Fremont," a cultural designation which includes the late agricultural societies of the eastern

Great Basin. This paper looks at Fremont in a wider geographic context, as the northern and northwestern expression of a remarkable spatial expansion of "Pueblo" in all directions. Beginning at least by AD 900 (if not earlier), groups which had previously evidenced little or no interest in things Puebloan began building stone houses, painting pottery, and relying on maize. The areas affected ranged from Las Vegas NV on the west to Las Vegas NM on the east, and from the Chihuahuan desert on the south to the northernmost Colorado Plateau and the Great Basin on the north and northwest. Each of these areas (and, indeed, each district within these larger areas) undoubtedly had local, specific histories and trajectories; yet all were arcs or chords on the circumference of a penumbra around the remarkable political and economic developments of the southern Colorado Plateau from AD 500 to AD 1300. This paper looks at the larger pattern, and suggests new ways to think about Fremont.

[117] Discussant

Lekson, Steve [99] see Cameron, Catherine M.

Leigemann, Achim (University of San Luis Potosi) and Patricia Julio-Miranda (Universidad Autónoma de San Luis Potosi)

[67] *Matter Matters: The Geomorphology and Architectural Usage of Mineral Resources at Prehispanic Sites of the Western Sierra Madre, Mexico*

Recent archaeological and geomorphological research conducted in the Western Sierra Madre of Northwest Mexico has demonstrated the architectural usage of a wide range of rocks and soils provided by the region's highly variable geological formations. Settlements with extended occupation spans covering the Classic and Postclassic eras of Mesoamerica (A.D. 200 to 1540) showed particular patterns in the employment of mineral resources during specific periods. In the paper we present the provenience and use of diverse mineral construction materials and discuss their chronological and socioeconomic relevance in relation to building techniques as well as the form and function(s) of individual structures.

Lemke, Ashley (University of Michigan), Khori Newlander (University of Michigan), Andrew White (University of Michigan) and Lars E. Anderson (University of Michigan)

[17] *A Neanderthal's Thoughts on Paleoindians*

A longtime Paleoindianist-wanna-be, Speth has recently focused his attention on the "truisms" that underlie much current Paleoindian research. Utilizing insights drawn from a wide range of ethnographic and archaeological examples, Speth and his students examine the conventional interpretation of Paleoindians as highly mobile hunters of big-game whose movements are tied to the locations of high quality lithic resources. The broad comparative approach used to explore these issues is characteristic of Speth, as he, and those fortunate to work with him, critically evaluate the basis of the conventional view and present some alternative explanations that are consistent with the available data.

LeMoine, Genevieve (Bowdoin College), Christyann Darwent (University of California, Davis) and John Darwent (University of California, Davis)

[159] *Adapting to change: the Thule occupation of Inglefield Land*

Excavations by the Inglefield Land Archaeology Project during the IPY focused on the Thule occupation of the northwest Greenland. Here we discuss the results this work, which demonstrate a rapid occupation of the whole area during the initial Ruin Island phase, followed by a contraction, during the winter at least, to the southern part of the region, in particular Foulke Fjord. We argue that the abandonment of the northern portion of Inglefield land is related to a combination of factors including climate change related to the Little Ice Age, and later, the increased presence of over-wintering exploration parties.

Lemus-Lauzon, Isabel (Université Laval), Najat Bhiri (Université Laval) and James Woollett (Université Laval)

[25] *Environmental changes and cultural changes in Labrador (Canada): paleoecology and traditional knowledge*

During the last centuries, inhabitants of northern Labrador experienced important climate and cultural changes. It seems that the cool climate of the Little Ice Age and the subsequent warming affected tree growth patterns. At the same time, the establishment of Moravian induced changes in the use of wood. The main objectives of this project are to: 1) document historical wood use in Nain, the northernmost community of Labrador, and 2) gather data on environmental changes in this region. In order to achieve these objectives, cultural geography (e.g. interviews with local elders) and paleoenvironmental methods (e.g. dendrochronology, macrofossil analysis) were used.

Lemuz, Carlos [267] see Williams, Patrick R.

Lentz, David (University of Cincinnati), Kim Thompson (University of Cincinnati), Angela Hood (University of Cincinnati), Carmen Ramos (Instituto de Antropología e Historia de Guatemala) and Kevin Magee (University of Cincinnati)

[119] *Resilience and Long-Term Sustainability: Agroforestry Studies of the Ancient Maya at Tikal*

The purpose of this research initiative is to gain a greater understanding of the agroforestry and agricultural practices employed by the Precolumbian Maya occupants of Tikal. Among the fundamental questions addressed include: 1) What were the species of plants, both wild and domesticated, that formed the basis of the subsistence and political economies?; 2) How were these plants obtained, i.e., were they planted and tended, cultivated, encouraged, or merely gathered from the wild?; 3) What sort of hydraulic and fertilization systems were employed?; and 4) Were management strategies adequate to provide sustainable use of forests through time?

Lentz, David [119] see Thompson, Kim M. [119] see Jones, John G. [119] see Coronel, Eric G [8] see Hood, Angela N. [157] see Englehardt, Joshua D.

Leonard, Daniel (University of California, Riverside) and Jeffrey Vadala (University of Florida)

[238] *Ancient Maya Wetland Management in the Yalahau Region of Northern Quintana Roo, Mexico*

During the past two years, archaeological and

environmental survey in the Yalahau wetland system has shown that Prehispanic Maya use of the wetlands was widespread. Over 200 constructed rock alignments, likely functioning as dikes, soil traps, or fish weirs, were found in 19 of 25 wetlands surveyed. Additionally, several new sites found adjacent to wetlands indicate that these were preferred places to live, or that wetland activities required special management. This paper will discuss the distribution and function of rock alignments in different wetlands, associated settlements, and recent soil studies providing insight into past environmental changes in wetlands.

[238] First Chair

Leonardt, Sabrina [60] see Scheinsohn, Vivian G.

Lepofsky, Dana [232] see Springer, Chris L. M. [232] see Schaepe, David M. [263] see Caldwell, Megan E.

Leppard, Thomas P. [163] see Pecoraro, Luke J.

Lerch, Michael (Statistical Research, Inc.) [79] Discussant

Lerner, Harry (Université Laval)

[22] *Dynamic Variables and Use-Related Reduction of Huron Chipped Projectile Points*

An assemblage of Huron projectile points from the Keffer site (AkGv-14) has been analyzed according to its inherently dynamic properties. By dynamic it is meant those attributes or combination of attributes that not only provide quantitative description, but also reflect relative degree of reduction. It was found that what have traditionally been considered distinct projectile point types (Nanticoke Triangular and Nanticoke side/corner-notched) may instead represent different stages along a common reduction continuum.

[59] Discussant

Letham, Bryn [232] see Bilton, David H.

Lettieri, Philip (University of Notre Dame), Claire Brown (University of Notre Dame) and Ian Kuijt (University of Notre Dame)

[107] *Communities on the Move: Demography of Small Island Communities in Famine and Post-Famine Western Ireland*

The scale and composition of small island communities along western Ireland changed enormously after the Famine. In this poster, we investigate how demography was affected by changing existing social structure and the establishment of a new social context. Utilizing historical records and statistical analysis, we investigate population shifts within the specific case studies of Inishark and Inishbofin, Co. Galway, Ireland. Current reconstructions of population dynamics are generally restricted to population shift due to famine-related deaths and massive immigration. Preliminary statistical analysis helps us reconstruct an ever-shifting population growth as a response to the socio-economic pressures created by the Famine.

Leventhal, Alan [194] see Gardner, Karen S. [194] see Monroe, Cara

Levi, Laura J. [165] see Figueroa, Antonia L.

Levine, Abigail (University of California, Los Angeles)

[125] *Mold-Made Pottery and Temporal-Spatial Dynamics at Farfán during the Late Horizon*

This paper presents a detailed analysis of mold-made, Chimú-Inka monkey effigy vessels excavated from Late Horizon contexts at Farfán, a Chimú administration center in the Jequetepeque Valley. Despite their inclusion in several different mortuary and architectural contexts from around the site, these vessels exhibit remarkable uniformity, and can be grouped into clusters of "mold-mates" based on shared attributes. Given the ephemeral nature of ceramic molds, which deteriorate over time due to constant exposure to water and other inclusions in clay, mold-mates can be used to establish temporal links among these distinct, archaeologically defined contexts.

Levine, Marc (Denver Museum of Nature & Science) and Lucha Martinez de Luna (Independent Scholar)

[162] *The Teotihuacan Attraction: Quantifying Collections of Artifacts Attributed to Teotihuacan in US Museums and Auctioned on the Art Market*

Teotihuacan has been the focus of archaeological research—and immense plunder—for well over a century. This study examines the collection of Teotihuacan attributed material among museums and private collectors in the U.S. over the last 50 years. The study provides quantitative data on the total number of Teotihuacan artifacts in U.S. museums and their accession dates. The report also traces the quantity and variety of Teotihuacan artifacts auctioned on the U.S. art market. The results reveal the research potential of Teotihuacan collections in U.S. museums and shed light on broader problems associated with collecting pre-Columbian antiquities.

Lev-Tov, Justin [151] see *Van Galder, Sarah J. [216]* see *Kansa, Sarah W.*

Levy, Richard (EVDS, University of Calgary), Peter Dawson (University of Calgary), Chris Tucker (Point Geomatics Ltd.) and Lyle Dick (Parks Canada)

[146] *Inveniam viam aut faciam: Using 3D Laser Scanning to Digitally Capture Fort Congers, a Historic Arctic Exploration Base on Ellesmere Island, Nunavut, Canada*

There is an apocryphal account of Polar Explorer Robert Peary writing the phrase "Inveniam viam aut faciam" (I shall either find a way, or make one) on the wall of the former Greely expedition house at Fort Conger, Ellesmere Island. It is an apt one for describing the challenges of using 3D laser scanning to digitally capture these dwellings, as well as countless other artifacts, at this historically significant site. In this paper, we discuss how this data set was collected, and how it will be used to produce a computer reconstruction of Fort Conger for research, conservation, and education.

Levy, Samuel [135] see *Ney, Hannah K.*

Lewarch, Dennis (Suquamish Tribe)

[32] *Spatial Distribution Patterns of Late Postclassic Domestic Middens, Coatlan del Rio Valley, Morelos, Mexico*

Surface collection data from eight sites in the Coatlan del Rio Valley of Western Morelos, Mexico, document spatial distribution patterns of Late Postclassic domestic middens. Computer mapping interpolation algorithms and class interval selection techniques delineate midden artifact concentrations scaled to local artifact density distributions within sites. Residential classes ranging from single houses to house complexes grouped around patios are defined by variation in the size of midden concentrations, artifact density, internal spatial structure of concentrations, ceramic diversity, and kinds of structural debris. Residential classes defined in Coatlan surface data correspond to excavated Aztec period houses documented elsewhere in Morelos.

[178] see *Trudel, Stephanie E.*

Lewis, Barnaby [52] see *Loendorf, Chris R.*

Lewis, Cecil [206] see *Belknap, Samuel L.*

Lewis, Krista [167] see *Khalidi, Lamya*

Lexvold, Angela (University of Minnesota Morris) and Rebecca Dean (University of Minnesota, Morris)

[180] *Faunal Remains from the Joint Site, Arizona*

The Joint Site in east-central Arizona was occupied AD 1000-1300. The majority of faunal bones at the site are rabbits: black-tailed jack rabbits (*Lepus californicus*) and desert cottontails (*Sylvilagus auduboni*). Other contemporary sites in west-central New Mexico and east-central Arizona suggest a shift toward the increasing use of large animals during this time period. At the Joint Site, faunal remains suggest that no significant changes occurred through time.

Li, Fei (Guizhou Provincial Institute of Archaeology), Qingsong Luo and Herong Zhang

[23] *A return to the flowers: A rethinking about the rock painting in Zuo river in Guangxi*

This paper presents recent finds of rock art along the Zuo river in the Province of Guangxi Province, China as well as a brief summary of recent archaeological finds in Guizhou Province.

Li, Min (UCLA), Tongxiu Zheng (Shandong Provincial Institute of Archaeology), Hui Fang (Shandong University), Henry Wright (University of Michigan) and Rachel Lee (University of Michigan)

[3] *Ritual Landscape and Political Dynamics: Initial Results from the Wen-Si Regional Archaeological Survey*
The Wen-Si Regional Archaeological Survey Project develops innovative methodology in approaching the landscape dynamics in central Shandong, China. Results from a pilot study demonstrates the interpretative potential of intensive survey and interdisciplinary research for understanding the long-term dynamics of the historical landscape centered around a major urban and ritual center that played a significant role in the last two millennia.

Li, Min [133] see *Kidder, Tristram R.*

Liebmann, Matt (Harvard University)

[200] *Sacred and Dangerous: The effects of Spanish Colonialism (and Pueblo Rebellion) on Obsidian Procurement in the American Southwest*

This paper builds on Tom Charlton's long-term interests in the changes to Indigenous economies that occurred as a result of the Spanish conquest of the Americas. Turning the focus to the northern periphery of New Spain, this presentation examines the transformations in obsidian procurement that occurred in 17th century New Mexico. The results of an XRF study of obsidian sources utilized at various stages of the Spanish conquest--contact period, early mission period, and Pueblo Revolt era--suggests that Pueblo conceptions of the ritual landscape as both sacred and dangerous were structured in part by the unintended consequences of colonialism.

Liendo, Rodrigo and Javier Lopez (Instituto de Investigaciones Antropológicas, UNAM)

[182] *The social construction of public spaces. An attempt to elicit the importance of public space from an archaeological point of view in the Palenque region, Mexico*

This paper would like to constitute an invitation to the reflection about the mechanisms through which political activity incorporates into the social and cultural community life by creating spaces for permanent collective action. Our impression is that routinely aspects of communitarian life are usually framed by cyclic events capable of congregating a sizable amount of individuals under a collective experience with political connotations. Our goal in this paper is to stick out the potential of the study of public spaces for the understanding of the political phenomena from an archaeological point of view using information recovered by our project.

Lightfoot, Kent (University of California)

[222] *Issues in the Study of Pyro-Diversity Management Practices*

An introduction to the session on indigenous landscape management practices in central California, this paper examines how our project was created and the primary research questions being addressed. I discuss the methodology being employed by team members to examine past pyro-diversity practices using diverse archaeological and ecological data sets. The organization of the session is discussed, including a brief introduction of specific papers.

[48] *see Schneider, Tsim D*

Lillios, Katina (University of Iowa)

[234] *Interpreting Variability of Late Neolithic Burial Sites in the Sizandro-Alcabrichel River Valleys*

During the Late Neolithic of the Estremadura, humans buried their dead in a range of burial structures, including caves, rockshelters, artificial caves or rock-cut tombs, megaliths, and corbel-vaulted structures. This poster evaluates the significance of this variability through an analysis of the chronology, associated material culture, burial population, and location of Late Neolithic burial sites in the Sizandro-Alcabrichel River valleys.

[234] *First Chair*

LIN, Albert [5] *see Casson, Aksef*

Lin, Kuei-chen (UCLA)

[23] *Preliminary analysis of settlement patterns and economic networks in the Sichuan Bronze Age: An application of social-network methods*

As prehistoric sites on the Chengdu Plain and their potential relationships have raised more and more interest in recent decades, this study attempts to explore the economic connections between different settlements by modeling them as elements of social networks. The topology of the networks and the relative importance of settlements within them will be discussed. This contribution proposes that social network analysis is an efficient method in explaining and evaluating varied relationships between constituent settlements. By inspecting the establishment, collapse, and renewal of certain connections, the changing politico-economic processes and the roles of settlements can be better understood.

Lin, Sam (University of Pennsylvania), Matthew Douglass (University of Nebraska-Lincoln), Daniel Parker (University of Auckland) and Simon Holdaway (University of Auckland)

[3] *Experimental assessment of cortex composition in lithic assemblage through computer simulation*

Recent studies demonstrate the usefulness of cortex proportion in lithic assemblages as a proxy measurement for the impact of artifact transportation on assemblage formation (Douglass et al. 2008; Holdaway et al. 2010). The excess/shortage of cortex relative to total artifact volume reflects movement of lithic materials between assemblages. This study employs experimentally produced lithic reduction sets and computer simulation to investigate the impact of various artifact removal patterns on the cortex composition of complete lithic assemblages. Results suggest non-random artifact exportation to be responsible for the underrepresented cortex ratio in the surface lithic assemblage in Western New South Wales, Australia.

Linares Grados, Moises [267] *see Van Gijsegheem, Hendrik [267]* *see Vaughn, Kevin J.*

Lincoln, Thomas (Bureau of Reclamation), Bill Chada (US Bureau of Reclamation) and Jennifer Huang (US Bureau of Reclamation)

[83] *Comparison of Light Detection and Ranging (LiDAR) Technologies to Demonstrate Scanner Efficiencies in the Documentation of Historic-era Rock Carvings and Petroglyphs in Threshing Machine Canyon, Kansas*
Threshing Machine Canyon witnessed significant activity throughout the 19th Century. California gold seekers, "Pike's Peak," cavalry regiments from Wisconsin and Missouri, the Butterfield Overland Dispatch, and locals all used the canyon to record names, dates, figures, or abstract designs. The Bureau of Reclamation has noted vandalism, removal, and erosion of the inscriptions. Reclamation is using LiDAR technology to create 3-dimensional imagery of the inscriptions to document their condition and identify those panels requiring intervention and treatment to retard erosion or reduce vandalism. In this session we compare the efficacy of two recordation episodes employing different scanners with different resolutions.

Lincoln-Babb, Lorrie (BIOARCH, L. L. C.) and Rebecca Hill (Arizona State University)

[204] *Late Archaic Mortuary Behavior in the Southwest: A regional comparison with worldly implications*
Many aspects of mortuary behavior observed for three

recently excavated Late Archaic or pre-ceramic sites from the central to northern areas of Arizona are similar to those observed for the well defined Early Agricultural or Late Archaic of the Tucson Basin of southern Arizona. A number of these mortuary practices appear to be associated with a lifestyle that involved some degree of mobility. Aspects of mortuary behavior held in common by regional Arizona Late Archaic groups to international hunting and gathering populations are suggestive of mortuary systems based on land tenure, kinship groups and perhaps unilineal descent.

Lincoln-Babb, Lorrie [52] see *McClelland, John*

Lind, Michael (Santa Ana Unified School)

[95] *The Zapotec Sacred Calendar: A New Perspective*. In 1578 Fray Juan de Córdova published a version of the Zapotec sacred calendar in his *Arte del idioma zapoteco* which has puzzled scholars for years. Recently, however, Javier Urcid (2001) has been able to identify the twenty Zapotec day names, and David Tavárez and John Justeson working with seventeenth-century calendars from the Sierra Norte have provided new insights into the nature of the Zapotec cosmos and terms associated with the Zapotec sacred calendar. The discovery of lists of the presence of the "nine lords of the night" in both modern (Weitlaner 1958) and seventeenth-century (van Meer 2000) versions of the Zapotec sacred calendar provides additional information. These data will be synthesized to provide a new perspective on the Zapotec sacred calendar.

Lindberg, Kelly and Chantel White (Boston University)

[169] *Neolithic Food Practices and Experimental Grain Processing at el-Hemmeh, Jordan*

The origins of agricultural production in Southwest Asia transformed the Neolithic subsistence economy, as well as the daily tasks related to food procurement and processing. The charred macrobotanical remains from the PPNA site of el-Hemmeh have revealed evidence of pre-domesticated cereals modified by grain-processing activities. This paper presents the results of experiments conducted to determine the methods of barley preparation (e.g., boiling, roasting) and processing (e.g., grinding, pounding) at the site, and distinguishes evidence of processing activities from the effects of secondary and post-depositional factors.

Lindeman, Michael (Desert Archaeology)

[139] *2000 Years of Occupation in the Southern Tucson Basin*

Continual occupation of landscape localities indicates enduring ties between people and places. Such persistence suggests complex relationships between the natural and social landscape with people weighing both the environmental advantages and the social connections to place in making settlement choices. The San Xavier/Martinez Hill area of the San Xavier District of the Tohono O'odham Nation is such a persistent place with almost two millennia of occupation. Through the integration of archaeological and historical documentation, this poster presents the settlement history of this area, beginning in the first centuries A.D. and continuing to the current day, linking landscape and people.

[139] *Second Organizer [52]* see *Wallace, Henry D.*

Linderholm, Johan [153] see *Buckland, Philip I.*

Lindsay, Colleen (University of Illinois Urbana-Champaign)

[212] *From Jungle to Garden: How the classic Maya of Yalbac, Belize modified their landscape*

This presentation discusses tropical landscape around the medium-sized Maya center of Yalbac, Belize to analyze Classic Maya (A.D. 250-900) impacts on the natural environment. Plants specimens were collected during the summer of 2010 to assess if and how the Maya modified native plant species. Areas surveyed include Yalbac temple mounds, smaller habitation sites, nearby jungle without sites, and a modern Maya home garden. Patterning of the over 200 species collected appear to indicate plant/human interaction through the diversity and order of plant species at habitation sites. This technique could be extended to determine past plant modification in other regions.

Lindsay, Ian (Purdue University) and Conner Wiktorowicz (Purdue University)

[4] *Magnetic Survey of Fortresses in the Late Bronze Age South Caucasus*

Geophysical survey is employed in archaeological survey as an efficient means for identifying buried features, from hearths to fortification walls. In the South Caucasus, hilltop fortresses are a defining archaeological element of the region's Late Bronze Age (1500-1150 BC), heralding the onset of nascent settled polities in the region in contrast with the mobile pastoral tradition of the Middle Bronze Age (2400-1500 BC). An ongoing magnetic survey on the Tsaghkahovit Plain in Armenia provides data on the spatial organization of fortresses and settlements, informing our investigations on the role of forts in regional defense and political authority over agro-pastoral communities.

Lindstrom, Katie (University of Wisconsin-Madison)

[189] *Pottery Preferences at Gola Dhoro (Gujarat, India) and Cultural Affiliation Strategies along the Indus Civilization Borderlands*

Living amidst a culturally diverse landscape on the borderlands of the Indus Civilization (2600-1900BC), residents of Gola Dhoro (Gujarat, India) became specialists in producing highly standardized Harappan style jewelry and thus became Harappan. Drawing on primary ceramic data to elucidate fluctuating and regionalized pottery preferences, this paper argues that the cultural and social reality of this small town extended beyond the abstract boundaries created by its Harappan ties. By occupying the economically powerful role of regional craft producer, Gola Dhoro residents gained the authority to reproduce their Harappan identity within the prevailing Gujarati social and material context.

Lipe, William (Washington State University) and Donna Glowacki (University of Notre Dame)

[46] *A Late Pueblo II Period "Surge" of Kayenta Ceramics into Southern Utah*

Small settlements dominated by Kayenta tradition pottery appear in the Red Rock Plateau and Cedar Mesa areas in the late 1000s and early 1100s. This pottery also occurs over a much larger area of southern Utah, often

as minority elements in assemblages dominated by Fremont or Mesa Verde types. The Kayenta "frontier" then retreats in the Pueblo III period. The distribution of Kayenta types is characterized, and questions of whether it represents movements of people or just of pots are discussed.

[94] *Discussant*

Lipe, William [46] *see* Matson, R. G. [46] *see* Holstad, Emily

Lipo, Carl (California State University Long Beach), Hector Neff (California State University Long Beach) and Jacob Kovalchik (California State University Long Beach)

[5] *The Promise and Practicalities of Rehydroxylation Dating for Prehistoric Ceramics*

Recently, a group of material scientists has demonstrated the potential of a new method known as rehydroxylation for dating ceramics. The method uses measurements of the rates of water absorption into ceramics as a means of dating the amount of time lapsed since the vessel was fired. The method has the promise of affording relatively high precision dates yet requires only relatively simple measurements and instruments. Here, we present the results of our study of the potential and limitations of this method for ceramic dating.

Lipo, Carl [153] *see* Morrison, Alex E. [207] *see* Breister, Anne G. [5] *see* Bernal, Judy

Lippert, Dorothy (National Museum of Natural History) [78] *Discussant* [184] *Second Chair*

Lippi, Ronald (University of Wisconsin), Alejandra Gudiño (University of Missouri--Columbia) and Estanislao Pazmiño (University of Lethbridge)

[15] *Incas at the tropical forest site of Palmitopamba in northwestern Ecuador*

Seven seasons of fieldwork at Palmitopamba have revealed much of interest regarding the indigenous Yumbo chiefdom there and the nature of the Inca presence at this large tropical forest site northwest of Quito. Architectural and other features of the Inca occupation are discussed as we attempt to delineate more precisely the nature and timing of the Inca "invasion." Pertinent information recently excavated at neighboring sites also sheds some light on the Inca-Yumbo relationship near the end--temporal as well as geographical--of the Inca Empire.

Littlefield, Nancy [161] *see* Wernecke, D Clark

Littleton, Judith (University of Auckland), Michael Dickson (University of Auckland) and Bruno Frohlich (Smithsonian Institution)

[237] *Postmortem violence? Identifying and interpreting postmortem disturbance in Mongolia.*

Deliberate violence to remains can be inflicted post-mortem but archaeologically distinguishing the source of disturbance is hard enough while interpreting motive may be impossible. We present the results of excavation of 37 Bronze Age mounds, northern Mongolia. Based on detailed analysis of burial structure, patterns of articulation, damage to elements and movement of bones within and outside the burial space, we argue

there is evidence of human activity distinguishable from that of animals. Alternative hypotheses of disturbance incidental to robbery versus intentional post-mortem violence are evaluated in the context of the graves, the archaeological context and ethnographic studies.

Littman, Robert [258] *see* Silverstein, Jay E.

Liu, Chin-hsin (University of Florida) and John Krigbaum (University of Florida)

[23] *Biocultural Assessment of Metal Age Populations in Central Thailand with Respect to Social Status Differentiation*

With abundant iron ore, central Thailand as a cradle of state development in Mainland Southeast Asia is known for its metallurgical advances in antiquity. This study assesses trends of human health and dietary behavior along the intensification of social status differentiation through time during Metal Age (~2000 B.C.-A.D. 500). Social stratification is often associated with differential access to dietary resources and diversified health within and among populations. Data from paleopathology and stable isotope ratio analysis on human and faunal skeletal remains are collected to test this hypothesis. Inter-regional comparisons also highlight the unique biocultural characteristics of ancient central Thailand.

Livesay, Alison K. [143] *see* Gilman, Patricia A.

Livingood, Patrick (University of Oklahoma)

[53] *Centering Mounds for the Red River Caddo*

During the late prehistoric period the Caddo built mounds just like the Mississippians to the east with whom they shared some cultural features. Some archaeologists have assumed that the Caddo used the mounds as centralized civic-ceremonial centers just like most Mississippians; literal and figurative central places. Using several lines of data this paper will argue that many of the mounds built by the Red River Caddo were not centrally located in a geographic sense and may have served much more restricted and well-defined roles.

Lloyd, Timothy (John Milner Associates, Inc.), Peter Leach (John Milner Associates, Inc.) and Daniel Welch (Geophysical Survey Systems, Inc.)

[80] *The Squawkie Hill Mounds*

The first site to demonstrate the influence of Ohio Hopewell mortuary ceremonialism in western New York was Squawkie Hill, located on a bluff overlooking the Genesee River gorge. A young William Ritchie dug into three mounds at Squawkie Hill in the 1930s and revealed Ohio Hopewell artifacts and mound construction techniques. The location of the mounds was lost over the 75 years that have lapsed since Ritchie's excavations. This poster presents the results of the relocation of the mounds through the use of geophysical prospection. The results suggest that there were mound characteristics that went unnoticed during the 1930s excavations.

Locascio, William (University of Pittsburgh) [93] *Second Organizer* [93] *see* Marcone, Giancarlo

Lockard, Gregory (HDR/e2M)

[174] *The Last of the Southern Moche on the North Coast of Peru*

This paper will present a new interpretation of the end of

the Moche culture in the Southern Moche Region based on the author's research at the Phase V site of Galindo, as well as recent research at other Moche sites in region. It is argued that the end of the Southern Moche should no longer be viewed as the retreat and eventual collapse as a single polity centered at the Huacas de Moche, but rather as political fragmentation and the reconstitution and then abandonment of the political ideology reflected in the corporate art style that defines the Moche culture.

Lockard Reed, Angela (Grand Valley State Univ/Univ of Pittsburgh)

[154] *Archaeology Service-Learning: An After-School Program*

The professional archaeologist has a commitment to public outreach. In this paper, a service-learning program in which college students teach archaeological concepts and principles using hands-on activities at an elementary after-school program is discussed. This reciprocal partnership enhances learning opportunities for the college students and promotes civic engagement. Because archaeology is a multi-disciplinary science, the lure of the past can be used to engage students in math, science, language arts, fine arts, and critical thinking. The elementary students become not only actively interested in the "past" in the abstract, but also in the study and preservation of their own history.

Loebel, Thomas (University of Illinois-Chicago)

[120] *Go.Stop.Go: Colonization of the Western Great Lakes*

Over the last decade, new research into the Clovis/Gauey aged archaeological record of the Western Great Lakes has resulted in the development of a robust data set allowing for the examination of early Paleoindian adaptations on a regional scale. In this paper I briefly examine the adaptive responses of Paleoindians as they coped with the dynamic nature of the Late Pleistocene environment in this recently deglaciated area.

[120] see Hemmings, C. Andrew

Loendorf, Chris (Gila River Indian Community) and Barnaby Lewis (Tribal Historic Preservation Officer/ Gila River Indian Community)

[52] *Continuity and Change from the Prehistoric to Historic Periods along the Middle Gila River in Southern Arizona*

By the 18th century, the middle Gila River was one of the few southern Arizona locations where irrigation communities remained. Agriculturalists were more widely distributed during prehistory, and the relationships among prehistoric and historic indigenes have been debated for centuries. Research on the Hohokam collapse has considered socioeconomic interactions, conflict, and subsistence practices. Point data and Akimel O'odham oral traditions are ideal for assessing these issues; however, this evidence has received little attention. From the perspective of long-term adaptation processes these data suggest that while some changes occurred, substantial evidence exists for cultural continuity between the prehistoric and Historic periods.

Loendorf, Chris [193] see Fertelmes, Craig M.

Loendorf, Lawrence (Retired Albuquerque NM)

[60] *Pathfinders and Petroglyphs: Marks along the Trail*

Stone cairns were used to mark Indian trails across the North American plains. In open terrain, these trails were situated on ridges or high points of land. An Indian trail that was oriented along the top of the hogback on the Piñon Canyon Maneuver Site, Colorado is marked with stone cairns and panels of petroglyphs. Significantly, the petroglyphs are dominated by images of bear feet, ungulate tracks, turkey tracks, and human footprints. I cannot explain the emphasis on petroglyphs of tracks, but it is worth noting they are on a pedestrian trail.

Loewen, Natalia (Williams College), Anne Skinner (Williams College), John Kappelman (University of Texas at Austin), Lawrence Todd (University of Texas at Austin) and Neil Tabor (Southern Methodist University)

[3] *Blue Highways: Dating Shinka River sites, Ethiopia, with ESR*

Ethiopia has produced many significant hominin fossils, including the earliest modern *H. sapiens*. Investigations suggest that the Shinka River, a Blue Nile tributary in NW Ethiopia, was a permanent source of water even in dry periods. Thus hominin occupation over a prolonged period seems probable. The 2010 excavations produced numerous stone tools and faunal remains from within sealed sites. ESR dating was conducted on mammal teeth and produced preliminary ages ranging from 45 to 71 kya. As most sites yielded only a single sample, further work will be required to ensure no reworking has occurred within the open-air settings.

Lofaro, Ellen (University of Florida) and Tiffany Tung (Vanderbilt University)

[233] *Mississippian Stress: A Comparative Study of Degenerative Joint Disease in Tennessee and Georgia*
Examining the frequency of osteoarthritis in human remains of the Arnold site near Nashville, Tennessee, illuminates the gendering of mechanical stress and physical activity of this Mississippian people (~AD 1125–1400). The 76 scorable individuals (of 204) yielded 26 males and 21 females which were in turn compared to Mississippian (AD 1200 to 1550) Upland Georgia results (Williamson 2000) of 81 males and 81 females. While the sacrum and lumbar, thoracic and cervical vertebrae were similar in degeneration across all groups, markedly significant differences exist between female knee joints, suggesting the need for further holistic investigation, perhaps of gender roles.

Logan, Amanda (University of Michigan)

[140] *Food Security and Paleoethnobotany of the Recent Past: A Case Study from Ghana*

Using ethnoarchaeological, oral historical, and archaeological sources, I trace continuity and change in food practices over the last millennium AD in central Ghana, when the inhabitants of the Banda region experienced the development of trade networks across the Sahara, a shift to trans-Atlantic trade, expansion of the Asante empire, colonization by the British, and transition to a market economy. People were exposed to new crops, and new circumstances which led to increased wild plant use and economic marginalization. Multiple lines of evidence show how paleoethnobotany of the recent past is relevant to understanding globalization and long term food security.

[140] *First Chair*

Logan, Melissa K. (PaleoResearch Institute, Inc.)

[98] *The Power of Gender: Paired Ceramic Figures in Late Formative West Mexico*

Paired ceramic figures of hollow construction are some of the most notable Late Formative human imagery associated with the shaft tombs of Jalisco, Nayarit, and Colima. Commonly defined as "male-female" or "marriage" pairs these figures have been represented as actual unions between living men and women defined by biological sex. However, statistical analysis of symbols depicted on the figures signaling gender and other forms of social status and identity suggest these images represent a dynamic system of complementary and hierarchical gender relations between and within individuals possibly used to help centralize power by establishing official ideologies during elite mortuary practices.

[66] see Cummings, Linda Scott **[66]** see Niessner, Janet C.

Lohse, E.S. [262] see Santarone, Paul

Lohse, K. [59] see Lohse, Skip

Lohse, Skip (Idaho State University), C. Schou (Idaho State University), K. Lohse (University of Colorado) and D. Sammons (Idaho State University)

[59] *Using AI to Establish Greater Rigor in Characterization of Stone Tools*

A major problem in advancing the rigor of archaeological use-wear studies has been lack of standardization in measurement of attrition, polishes and micro-surface morphology. We have developed a system of standardized analysis based on replication studies using advanced digital imaging at medium- to low power magnification. Results have been robust and we are currently adapting this approach for use with an AI system, SIGGI-AACS, to explore how archaeologists classify use-wear and identify tools and activities in the archaeological record. We are establishing greater rigor through application of new technologies with the potential to explore how archaeologists think about classification itself.

Lombardo, Umberto (Institute of Geography, Bern, Switzerland), Heinz Veit (Institute of Geography, Bern University, Switzerland) and Anna Plotzki (Institute of Geography, Bern University, Switzerland)

[124] *Driving forces behind Pre-Columbian Human Occupation patterns in Bolivian Amazonia*

In recent years, the Llanos de Moxos (LM), in the Bolivian Amazonia, have captured the interest of geographers and archaeologists because of the impressive amount of pre-Columbian earthworks they hold. However, while it is well known that the type of earthworks found vary greatly according to their location within the LM, no attempt has ever made to establish whether this spatial pattern responds to different cultures, environmental conditions or both. New data will be presented which shows how past climate, fluvial patterns and natural drainage greatly shaped the prehistoric occupation of the LM.

Loney, Helen (University of Worcester, UK) and Peter van Dommelen (University of Glasgow)

[228] *Colonial theory and pottery production: the changing relationships of local workshops during the Punic period, Sardinia*

This paper will focus on how changing socio-political systems affected the relationship within pottery workshops/work groups and their products. Aspects of colonial theory will be considered as supporting a notion of local influence on new ideas. Case studies from Later Bronze Age and Early Iron Age Italy will be used to provide evidence of the complex relationships between traditional Italian pottery workshops and the Greek and later Phoenician colonies that arrived during the first millennium BC.

Long, Michael (University of Texas - Austin)

[186] *Keeping 'tabs' on the sacred and feminine at La Blanca*

At Middle Preclassic La Blanca, Guatemala, archaeologists have recovered a prodigious amount of hand-made, clay figurines. At La Blanca and elsewhere, these enigmatic figurines number in the thousands, and inevitably draw a variety of interpretations. Attempts at totalizing narratives of meaning, however, are often unproductive. I have analyzed a small subset of La Blanca figurines, dubbed 'tab' figurines, which are remarkable for their dramatized anthropomorphic features—absent faces substituted with exaggerated feminine-sexual markers. Viewed through the lens of psychoanalysis and post-structuralist critique, 'tab' figurines can be regarded as materializations of thought, at the boundary between unconscious and social ties.

Longacre, William (University of Arizona) and Taylor Hermes (University of Arizona)

[169] *Ethnoarchaeology of Rice and Pottery Production among the Kalinga, Philippines*

More than 200 rice fields were mapped and four rice harvests were monitored during 1975-1976 in Dangtalan, Pasil, Kalinga in the Philippines. Owners were promised that these data would not be published for at least 25 years. We explore the relationship between rice production and pottery production among the Kalinga. Our hypothesis is that households with high rice production will deliberately under produce pottery, bartering for the pots needed with rice. Poorer households can obtain the rice needed to feed their families. Information on how the fields were obtained is also presented and discussed.

Longstaffe, Fred [255] see Webb, Emily C. **[35]** see Szpak, Paul **[21]** see Spence, Michael W. **[49]** see Hewitt, Barbara R. **[16]** see White, Christine D. **[56]** see Donis, Alicia E.

Looper, Matthew (California State Univ-Chico)

[145] *Spelling Conventions for Passive Verbs in the Maya Script*

This paper uses the Maya Hieroglyphic Database to analyze morphological variation in the Maya script, specifically the spelling conventions that represent verbs in the passive voice. The study reveals the historical development and geographical distribution of the five grapheme combinations used to render passive verbs and provides an explanation of these patterns utilizing current notions of grapheme function. This investigation demonstrates the importance of the statistical study of

grammatical patterns in the Maya script.

Lopez, Javier [182] *see Liendo, Rodrigo*

Lopez, Jose (Universidad de la República, Uruguay)
[253] *Funerary and ritual practices in Prehistoric lowlands of Uruguay.*

The "archaeology of death" developed theoretical and methodological approaches to prehistoric burial analysis. Archaeologists must identify sites and context in which we can recognise ritual behaviour concerned to the relatives of the dead. On other hand, we can try social, economic or political interpretations for this "ritual context". Mortuary practices of lowlands of East of Uruguay (from circa 3000 BP to 15th century) show different patterns related with social, economic, and political circumstances. This paper explores the ritual interpretation of lithic industries, food, sediment, location, humans bones and other materials, associated often with the dead.

Lopez, Valentin (Amah Mutsun Tribal Band)

[222] *The Study of Indigenous Landscape Management Practices in Central California - Introduction to the Amah Mutsun Tribal Band*

-Introduction of Amah Mutsun Tribal Band. -History before Contact, Mission Period, Current Day Tribe. -Developing relationship and trust with study team. -Tribal concerns regarding project and resolutions. -Tribal involvement in project. Expected outcomes.

López, Catalina [31] *see Kittel, Michelle*

Lopez Mestas Camberos, Lorenza (Instituto Nacional de Antropología e Historia)

[98] *Representaciones antropomorfas e identidad social en el centro de Jalisco durante el Preclásico tardío y el Clásico temprano*

El centro de Jalisco estuvo integrado como una región política y económica desde el Preclásico tardío, producto de una compleja dinámica sociocultural que le otorgó su propia identidad; el poder alcanzado por estos grupos se logró mediante el intercambio de bienes estratégicos y suntuarios, al igual que en el manejo y control de recursos simbólicos. Este trabajo versará sobre el estudio de las figuras antropomorfas realizadas en diversos materiales como una fuente importante para comprender la vida cotidiana y la organización social de las comunidades de esta región, ya que en ellas se plasmaron creencias, costumbres y comportamientos sociales.

López-Dávila, Sergio (Arqueólogo)

[147] *Funeral practices on the Central Coast of Sonora, near the tideland Tastiota.*

I will talk about the last investigations on the Central Coast of Sonora, Mexico, developed during 2009 to 2010. Is a description of the research, of the excavations process about the nine elements (burials) registered in three excavation units. The characteristics of everyone and his context.

Lopez-Hurtado, Luis (University of Pittsburgh)

[93] *Domestic Economy and Public Ritual in the Development of Social Power at the site of Panquilma, Peruvian Central Coast*

This paper explores the relationship between domestic production of craft goods and the development of hierarchical relations at the site of Panquilma during the LIP. I will show that in Panquilma while ruling elites were in charge of the performance of rituals that included the display and offering of crafted goods. The production of these goods was not controlled by the ruling segment of the population, but was based on independent household compounds. I argue that this data is indicating that domestic economy and the reproduction of social power at the site were not unrelated but were heavily intertwined.

Lopiparo, Jeanne (Rhodes College)

[24] *Constructing Subjects, Destroying Objects: Materiality, Social Relations, and Placemaking at Currusté, Honduras*

Annual and life-cycle rituals at centers in the Ulúa Valley integrated members of communities through lavish events in which objects that indexed group membership were destroyed and interred. Evidence of such events at Currusté includes material culture highlighting women's reproductive and productive roles, from emphases on procreation, to associations with the creation of ancestors through curation and interment of human bone bundles. In this mutual constitution of subjects, objects, and places, and of the dead and the living, social identities were materialized and embedded in the built environment through performances of embodied practices that simultaneously constructed subjects by destroying objects.

Lordkipanidze, David (Georgian National Museum)

[114] *First Homo in the Caucasus*

First Homo in the Caucasus The site of Dmanisi, Georgia, has produced surprising evidence for the early dispersal of hominids out of Africa. Dmanisi dates to approximately 1.77 million years ago and has revealed a wealth of cranial and post-cranial hominid fossil material along with many well-preserved animal bones and quantities of stone artifacts. The Dmanisi hominids have a surprising mosaic of primitive morphology such as small body and brain sizes and an absence of humeral torsion coupled with derived human-like body proportions and lower limb morphology. These fossils bring into question whether Homo erectus was the first.

Loren, Diana

[229] *The creation of a Puritan body: ideological and material strategies at colonial Harvard*

In colonial contexts, laws were fashioned to safeguard imperial visions and allay fears regarding bodily practices and desires. At 17th-century Harvard, English and Native students trained in "knowledge: and godliness." College laws regarding comportment, action, and dress intended to create a specific institutional identity: the Puritan minister. Here I reflect on the entanglement of college and colony laws with body, intellect, and soul. I ground my discussions in current theoretical perspectives on embodiment and materiality to explore the extent to which English and Native students at colonial Harvard did or did not embody Puritan ideologies, garb, and action.

Lorenz, Joseph [11] *see Johnson, John R.*

Lorvik, Katharina [236] *see* *Dolphin, Alexis E.*

Loubser, Johannes (Stratum Unlimited, LLC)

[60] *The Landscape and Ethnographic Setting of South Appalachian Petroglyph Boulders*

Cherokees associate at least three prominent petroglyph boulders in the mountains of northern Georgia and western North Carolina with the giant Master-of-the-Game, Tsulikal. Located on trails between populated sites and isolated mountain top balds, the boulders mark transition points between contrasting physical and mental terrain. The placement of other petroglyph boulders along prominent trails can similarly be interpreted as marking zones of transition.

Loughmiller-Newman, Jennifer (University at Albany, New York)

[190] *The Construction, Production, and Function of Classic Maya Flask Vessels*

Among the vast formal array of ancient Maya ceramics there are small bottle-like vessels commonly referred to as 'flasks' (veneneras). A number of such flasks are found in the Kislak collection at the Library of Congress that share similar dimensions, volume, and stamped images indicating standardized production. Minute variations observed between certain stamped images suggest multiple standardized stamps. This paper will address physical characteristics of the vessels, identified contents, and textual and iconographic representations.

Love, Michael (Calif State Univ-Northridge)

[186] *Household and Polity at La Blanca, Guatemala*

Models of political economy principally view the household as an economic unit, and examine how household production is affected by the tribute demands of emerging elites. The La Blanca project builds on such models by viewing economic intensification at the household level to be in part a response to elite demands, but seeks to construct a broader model of household activities by viewing it as a place of ritual and a locus for the construction of identity. Household economic strategies and ritual activities are analyzed conjointly to reflect the negotiation of relations with the institutions of centralized power.

[186] *First Chair*

Lovis, William [19] *see* *Raviele, Maria E.*

Lowe, John (SWCA Environmental Consultants, Austin)

[214] *Blogging as an American CRM Professional*

In the practice of archaeology, engaging with the public is important. Archaeologists can help to explain the value of protecting the important data "in the ground." However, this interaction can also benefit the work of the archaeologist, in understanding the perspective of other stakeholders. Blogging is one way that archaeologists can reach out to the public. For American CRM professionals, blogging presents a challenge. The projects are often unexciting, with negative results. Laws are a consideration, and clients may have non-disclosure contracts or monitor the Internet for negativity. Often, there's a sense that you're talking to a public that isn't there.

Lowe, Lynne (Centro de Estudios Mayas, UNAM),

Bruce R. Bachand (New World Archaeological Foundation, Brigham Young University) and Thomas A. Lee (Centro de Estudios Superiores de México y Centroamérica, Universidad de Ciencias y Artes de Chiapas)

[51] *Amber, Pearl, Jade and Pyrite: Middle Formative Funerary Ornaments from Chiapa de Corzo, Chiapas, Mexico*

Recent discovery of a Middle Formative elite tomb at the E-Group Complex in Chiapa de Corzo, Chiapas sheds light on early Zoque culture, including social differences, funerary customs, and relations with neighboring groups. The burial contained two principals, a man and a woman, richly adorned with thousands of jade, pearl, amber, and pyrite beads, among other offerings. The presence of another elite tomb at a nearby building, now destroyed, permits a basic understanding of local elite funerary attire. Ornaments worn at Chiapa de Corzo are compared to those found in the Gulf Olmec region and in other Middle Formative centers.

Lowe, Mark [179] *see* *Adams, Jeffrey A.*

Lowry, Justin (U Albany, SUNY) and Traci Ardren (University of Miami)

[14] *Village or City: Data from Late Preclassic Xuenkal Households*

In the Late Preclassic, the Northern Maya lowlands were a vibrant and increasingly complex area. Using settlement and test-pit data we will seek to characterize the earliest occupation at Xuenkal, where Late Preclassic contexts are, in some cases, isolated from the later occupations. Horizontal excavation of one select house group provides a detailed contextual sample of the earliest living arrangements. Understanding how this particular place was occupied and the degree to which this occupation could be considered "developed" or "developing" will provide a case study of the transitional processes at work throughout the Maya lowlands.

Loya, Tatiana (Brandeis University)

[85] *Ideology, Technology and their Implications on the Political Economy: A Petrographic Analysis of a Sample of Arena Red and Arena Orange from Yaxuna, Yucatan, Mexico*

Regardless of the physical and geographical limitations of potting materials, pottery technology is flexible; the choices taken by the potter reflect not only material but also socio-cultural restrictions and preferences. Petrography, as a materials science tool, is a powerful complement to traditional type-variety and modal ceramic analyses. By understanding the tempers selected by the Yaxuna vicinity potters, we can better understand the ideology, technology and ultimately the function of serving trade-wares like the Arena Group, a short-lived Late Classic (AD 600-700/750) ceramic group that defines the relationship between the sites of Yaxuna, Yucatan and Coba, Quintana Roo.

Lozada, Maria (University of Chicago) [217]

Discussant [217] First Chair

Lozada, Maria Cecilia [129] *see* *Hackner, Stacy L.*

Lubinski, Patrick (Central Washington University) and Megan Partlow (Central Washington University)

[177] MNI, NISP, or What? Considering Specimen Interdependence in Mortality and Size Distributions
The dominant mode of quantification in zooarchaeology is NISP, which has been shown to contain much of the information of derived measures without some of their problems. But for some studies (e.g., animal size or mortality distributions), the issue of specimen interdependence creates interpretive problems, and there may be advantages to using MNI, MNE, or single portions to calculate numbers per age or size group. These may provide more conservative and defensible interpretations than NISP counts assuming specimen independence, and are explored here with fish size and pronghorn age data.

Lubritto, Carmine (II University of Naples- Lab. CIRCE), Fabio Marzaioli (University of Naples - Lab. CIRCE), Sara Nonni (Centro di ricerca per le scienze applicate alla protezione dell'ambiente e dei beni culturali, Università la "Sapienza", Roma (Italy)) and Filippo Terrasi (University of Naples - Lab. CIRCE)

[92] A novel methodology for mortar radiocarbon dating: isotopic evidences on laboratory and field samples
To date the possibility to radiocarbon dating mortars is not completely clarified. This study, by reproducing a simplified mortar production process in the laboratory environment, shows the feasibility of an innovative protocol for mortar dating. Carbon isotopes, $\delta^{13}C$, XRD and SEM analyses were performed on a series of laboratory mortars to evaluate the accuracy of the proposed methodology. The proposed pretreatment was applied to real study cases and checked by means of a cross-dating on some charcoal fragments found in the samples. The protocol allows the suppression of the dead-carbon contamination allowing unbiased dating for the analyzed mortars.

Luce, Joseph [156] see Perez, JoEllen M.

Lucero, Lisa (University of Illinois at Urbana-Champaign)

[90] Maya Commoner Materiality in a Low-Density Urban Landscape

Late Classic Period (c. A.D. 550-850) Maya farmers typically practiced an extensive mode of agriculture in hinterland or non-center areas. Further, the dispersed nature of fertile soils meant that people lived blanketed across the landscape rather than concentrated in villages. While centers acted to bring people together to promote solidarity, domestic rites focused on the family. In fact, Maya commoners left a record of these rites and their family histories in their homes via specialized deposits as I illustrate through a discussion of ceramic clusters (their color, placement, and associated artifacts) from several houses at Saturday Creek, Belize.

Lukach, Katharine (Brandeis University)

[190] Representation and exchange in Late Classic Mesoamerica: a study of some figurines from the Brandeis University Material Culture Laboratory Collection

Representations of the human body both reflect and reinforce bodily habitus and social roles. I argue that a collection of anthropomorphic figurines, made up of Remojadas/Nopiloa-style statuettes from Veracruz and of

Maya figurines, primarily from the island of Yucatan, offer investigators insights into the Late Classic Mesoamerican societies that produced them. The formal conventions of each tradition, and the use of figurines in burial offerings, suggest ways in which statuses and roles were enacted through representation, while stylistic and technical similarities suggest economic and cultural exchange between Veracruz and the northern Maya Lowlands.

Lukacs, John (University of Oregon)

[16] Sex differences in oral health in prehistory: An evolutionary perspective

Women's oral health is recognized to be worse than men's. The disparity in oral health by sex in prehistory is examined in the context of evolutionary medicine. Sex differences in dental caries from global samples of prehistoric and living non-western populations are presented. Poorer oral health among women is a consistent finding of this meta-analysis. Sex differences in oral health result from women's reproductive biology and from genetic factors. Changes in estrogen levels, food preferences and aversions, and immunosuppression during pregnancy represent evolutionary adaptations that enhance reproductive success, but contribute to worse oral health among women than men.

Luke, Matt [161] see Tucker, Bryan D.

Lukowski, Susan [178] see Flanigan, Kelli B.

Lundin, Richard (Wondjina Research Institute), Michael Hargrave (ERDC CERL), Claudia Brackett (Country Chemist), William Iseminger (Cahokia Mounds State Historic Site) and John Kelly (Washington University)

[193] Combined Survey Format (CSF) Archaeochemical (pXRF) and Geophysical Investigations at Ramey Field, Cahokia

Previous investigations at Cahokia identified a complex of massive resistance and magnetic anomaly phase anomalies at the north end of Ramey Field. Most notably, a rectangular resistance anomaly resembles the footprint of a prehistoric mound. Various explanations have been considered, but no mounds or historic structures are known to be present at that location. In 2010, a Phase 1, Class 1 pXRF survey collected archaeochemical data from surface soils and vegetation samples along a transect that crossed this anomaly complex and the East Stockade. Results of archaeochemical analyses are correlated with geophysical data and nearby excavations.
[193] First Chair

Lundin, Richard [193] see Boggess, Douglas H M [158] see Howe, Mark L.

Luo, Qingsong [23] see Li, Fei

Lupo, Karen [126] see Schmitt, Dave

Lux, Thomas [66] see Varney, R. A.

Luzzadder-Beach, Sheryl (George Mason University), Timothy Beach (Georgetown University), Stephen Houston (Brown University) and Thomas Garrison (Brown University)

[148] Investigating Water Management Structures at El Zotz, Peten

In 2009 and 2010 we investigated the formation and paleoecology of the Palmar Cival and an aguada in the ancient Maya city of el Zotz, Peten, Guatemala. The cival site revealed two paleosols at 55 and 70cm (dated to Cal BP 1820-1610); a midden through 170cm; then lacustrine, shoreline and peat deposits through 300cm. The Zotz aguada had 3 main zones: including a Late Classic layer underscored by a gravel and plaster lining at 105-115cm, and a flagstone, clay and ceramic floor from the Late Preclassic at 230cm. We present proxy evidence for these wetlands' formation and use.

Luzzadder-Beach, Sheryl [223] *see Beach, Timothy*
[238] *see Krause, Samantha*

Lyle, Robin [135] *see Clinton, Jennifer*

Lyman, R. (University of Missouri Co)

[231] Paleoarchaic Exploitation of Mammals in Eastern Washington State

Paleoarchaic subsistence is well studied in the Great Basin where the notion of this cultural unit (with both fluted points and stemmed points) originated. Mammalian faunal data from six assemblages dating between 12,100 and 10,400 cal BP in eastern Washington indicate Paleoarchaic adaptations there involved exploitation of large mammals (> 25 kg) in some loci and medium size mammals (5 to 25 kg) in others. Characterization of Paleoarchaic subsistence at individual sites must account for monitoring perspective—is the site a village, camp, resource extraction loci? Further, variability in recovery significantly influences analytical results.

[126] *Discussant*

Lyons, Natasha [159] *see Dawson, Peter C.*

Lyons, Patrick (Arizona State Museum), Jeffery Clark (Center for Desert Archaeology) and Brett Hill (Hendrix College)

[52] Kayenta Immigrants in the Hohokam "Hinterlands" and their Descendants in the Heartland

Southwesternists have long been aware of abundant traces of Kayenta immigrants recovered from sites dating to the late A.D. 1200s and the early 1300s in the San Pedro Valley and the Safford Basin, in the Hohokam "hinterlands." However, sites occupied from the mid 1300s through the early 1400s in the Hohokam "core" and adjacent areas, such as the Tonto and Tucson basins, have yielded evidence suggesting the persistence of a minority social identity based in part on group origins in the Four Corners region. Such minority groups played roles in the Hohokam collapse, a complex process involving multiple causal factors.

Lyons, Patrick [264] *see Barker, Claire S.* **[52]** *see Hill, Brett*

Lytle, Farrel (The EXAFS Company)

[193] Dating Petroglyphs by Chemical Analysis with XRF

This technique determined the age of petroglyphs by XRF analysis of re-patinated desert varnish (DV) on glyph surfaces. High (5µm) resolution synchrotron-XRF-microprobe surface and cross section DV images detected and eliminated macro-crystal interference from

tests of underlying base rock. An age calibration curve $\pm 25\%$, was developed by correlation of pXRF DV analyses with cosmogenic-isotope dated fallen rock slabs. Results agree with known ages of DV on basalt, tuff and sandstone test surfaces and petroglyphs where approximate age can be inferred by glyph content and corresponding archaeological data in the Coso Range CA, Pahrnagat NV and St. George UT areas.

Maca, Allan (Colgate University), Gregorio Perez (PAPAC), Katherine Miller (Arizona State University) and Shannon Plank (PAPAC)

[128] El Bosque, Copan: Evidence and Implications of Urbanization at AD 600

This paper addresses the results of research conducted by PAPAC in the El Bosque zone of the Copan Archaeological Park. We discuss the evidence and implications of the ca. AD 600 founding of a residential and ceremonial sector immediately west of the Copan Acropolis. Previous studies concluded that the El Bosque zone was urbanized before the northern foothills; it now appears that the opposite was the case. We consider evidence for a massive land reclamation project in El Bosque; the construction of a (contemporaneous) monumental funerary assemblage; and results of bioarchaeological, ceramic, architectural and other archaeological analyses.

Maca, Allan [128] *see Perez Martinez, Gregorio*

MacMinn-Barton, Margaret [25] *see Badal, Ernestina*

MacDonald, Brandi Lee (McMaster University), Fiona McNeill (McMaster University), Michael Farquharson (McMaster University), Diane de Kerckhove (University of Guelph) and Spencer Pope (McMaster University)

[167] Methods for the Analysis of Ancient Coins

A series of Greek and Roman silver and bronze coins ranging from 1st to 6th century BC were analyzed using multiple techniques to determine their compositional features. Neutron activation analysis, x-ray fluorescence, proton-induced x-ray emission (PIXE) spectroscopy and 2-D elemental mapping via proton microprobe were employed to characterize base metals, impurities and surface features. Variability in quantities of Au, Ag, Cu, Pb and Sn have provided evidence for metal debasing. Elemental mapping of coin surfaces have indicated subgroup of coins as imitations minted in alternate regions. Results of these analyses have implications for the provenance and manufacture of the coins.

Macdonald, Danielle (University of Toronto)

[59] Both Sides of the Coin: Qualitative and Quantitative Methods of Use-Wear Analysis

As the field of use-wear analysis has developed, so has the number of different methodological approaches that address tool function. This paper will compare the results of multiple use-wear methods to explore how methods of qualitative observation relate to quantitative use-wear techniques. The comparison will be conducted using low-powered and high powered approaches, as well as data collected from an Alicona InfiniteFocus microscope. Microliths from Levantine Epipalaeolithic assemblages will be used as an archaeological sample. Comparing the strengths and weakness of different use-wear

methodologies presents a robust view of Epipalaeolithic microlith tool function.

[59] *First Chair*

MacDonald, Douglas (The University of Montana)

[57] *Toward an Understanding of Prehistoric Hunter-Gatherer Use of America's Largest High-Elevation Lake, Yellowstone Lake, Wyoming*

Native American hunter-gatherers from multiple regions seasonally-utilized Yellowstone Lake during the last 11,000 years. At 7,750 ft., the 20x14-mile Yellowstone Lake is North America's largest high-elevation body of water. The University of Montana completed survey of the eastern 26 miles of shoreline, completing Yellowstone National Park's goal to survey all 140 miles of the lake's circumference. Archaeological survey and excavation results of sites around the lake indicate its variable use based on proximity to four major entry corridors (north, south, east and west). Differential use of obsidians and cherts provides insight into changing lake access routes during prehistory.

MacDonald, Douglas [160] *see Adams, Jacob S.*

Macfarlan, Shane [179] *see Henrickson, Celeste N.*

MacFarland, Kathryn (University of Arizona)

[4] *Religion in Iron Age Eurasia*

Religion in the Iron Age (ca. 1,000 – 100 BCE) of Eurasia (southeast Europe, Central Asia, Siberia, northern China) can best be studied when looking for large-scale ritualized (Bell 2009) behavioral patterns visible in landscape utilization and burial practices. While keeping the dynamic relationship between economic, political and religious aspects of culture in mind; recognizing religious and ritualized behaviors from archaeological evidence depends on multiple resources. Evidence offered by historical sources Herodotus and Sima Qian, ethnography and archaeology are contextualized and reviewed to establish patterned, religious usage within the Iron Age Eurasian landscape.

Machado, Juliana (Museu Nacional - Universidade Federal do Rio de Janeiro)

[124] *Engendered Landscape Transformations: Women's Social Network and the Construction of Places in the Amazon Region*

For riverines of Caviana Island, Brazilian Amazon, landscape is a social place. The forest is inhabited by enchanted beings and non-human mothers of places. Through selection and planting of species women transform spaces into places of people. To achieve and maintain an environment for living, they exchange plants and medicines among kins. This network reaffirms social ties of human and non-human reciprocal relations while attaches them to places, reinforcing territoriality. This data indicates the existence of plant specialists and a positive correlation of plant dispersion and group identity highlighting the importance of plant circulation and its meanings for social-cultural relations.

Mackey, Carol (California State University Northridge, Emerita)

[125] *An Inca Transformation of a Chimu Sacred Space*

When the Incas conquered the Jequetepeque Valley they co-opted Farfan, a Chimu regional center. Inca

modifications to the built environment did not directly impinge on the main architectural features but instead were confined to vacant spaces or storerooms. Yet, the Incas took over one of Farfan's most sacred areas-the Chimu huaca burial complex-where they built a three-level cemetery, creating a new sacred environment for state-sponsored rituals. This paper describes the nature of these changes and the possible incorporation of the Chimu huaca.

Mackey, Carol [156] *see Nelson, Andrew J.*

MacLellan, Jessica (University of Arizona) and Takeshi Inomata (University of Arizona)

[225] *In Search of an Early E-Group: Recent Investigations at Group A, Ceibal*

Monumental architectural groups served as stages for rituals and spaces for public gatherings throughout ancient Mesoamerica. During the early Middle Preclassic period (900-600 BC), the lowland Maya site of Ceibal appears to have been centered on a very early E-group style architectural complex. During the 2011 field season, excavations were undertaken to explore the construction, use, and experience of this complex by the earliest residents of Ceibal.

Macrae, Scott (Trent University) and Gyles Iannone (Trent University)

[238] *The Development and Maintenance of Ancient Maya Agricultural Systems: A Case Study from Minanha, Belize*

The identification of ancient Maya agricultural systems has greatly advanced in the last few decades. However, while the distribution of these systems has become better understood, we continue to have a limited understanding of the socio-political and socio-economic factors associated with development and maintenance of these relic systems. A decade of research at the Maya city-state of Minanha has been aimed at rectifying this situation. This paper will summarize some of the key insights from this research program.

Macri, Martha (Native American Studies, UC Davis)

[145] *Dialectology of the Classic Maya*

The Maya Hieroglyphic Database was in part designed to answer questions about subtle differences in the Classic Maya texts. Scribal grapheme preferences, local graphic styles, literary genres, and dialect differences all contribute to variety in what has been mischaracterized as a homogeneous timeless script. The majority of Classic period texts include specific dates; and those on large monuments are thus associated with specific locations. This combination of temporal and spatial data provides a unique opportunity to examine variation in the language recorded in Classic Maya writing that is seldom available for early texts.

[145] *First Chair*

MacWilliams, Arthur (University of Calgary), Robert Hard (University of Texas at San Antonio), John R. Roney (Colinas Cultural Resources Consulting) and Karen R. Adams (Crow Canyon Archaeological Center)

[244] *A15-06 and Settlement on the Río San Pedro River of Southern Chihuahua, Mexico*

Several open and rockshelter sites have been identified

along the Río San Pedro, southwest of Chihuahua City. The most intriguing site is A15-06 (Los Pílares). Excavations at A15-06 have resulted in identification of an Archaic component radiocarbon-dated from approximately 3200 years ago, and structures dated from ca. 1900 years and ca. 1100 years. Limited excavation of the deeply buried Archaic component has not produced remains of cultivars, though the location is optimal for small-scale agriculture. The older structure is dated from maize. The younger structure offers some similarities with a pattern of Ceramic-period ranchería settlement previously recognized in central Chihuahua.

MacWilliams, Arthur [199] *see* Hard, Robert J.

Macy, Kimbi [4] *see* Marwick, Ben

Madden, Gwyn (Grand Valley State University) and Janet Brashler (Grand Valley State University) [236] *A Late Roman Early Byzantine Tomb in Northern Jordan*

Human remains and associated architecture are examined from area BB2 at the site of Umm-el-Jimal, a Late Roman to Early Byzantine site in northern Jordan. Excavated in 1996, the two vault tomb produced an unusual burial population (MNI 36) with over representation of juveniles from fetal age through adolescence. Burial practices and post depositional activities are investigated to explain the commingled nature of the deposit. Several hypotheses are offered to account for the large quantity of well preserved juvenile remains. Data are compared from this locality to others excavated and reported on at Umm-el-Jimal and similar sites in Jordan.

Maeyama, Kimberly (Geoarcheology Research Associates), Susan Malin-Boyce (US Army Corps of Engineers), Natalie Drew (US Army Corps of Engineers), Lauren Jelinek (Statistical Research, Inc.) and Erica Young (Statistical Research, Inc.) [80] *Managing Digital Collections: One Way Forward*
36 CFR 79 mandates that archaeological collections be curated to a specific standard and be accessible to the public. A "curation crisis" has been identified wherein collections are at risk. The Army Corps of Engineers Center of Expertise for the Curation and Management of Archaeological Collections utilized American Recovery and Reinvestment Act funds to initiate the Archaeological Records Pilot and Assessment (ARP&A) study addressing two issues facing the Corps and other agencies: 1) how to approach the long-term curation of associated records, specifically digital, within an archaeological collection, and 2) how to provide public and professional access to these records.

Magee, Kevin [259] *see* Ballantyne, Marianne R. [119] *see* Lentz, David L. [119] *see* Dunning, Nicholas P.

Magee, Peter (Department of Archaeology, Bryn Mawr College) [13] *The domestication of the dromedary camel and the organization of trade in ancient southwest Asia.*
The domestication of the dromedary camel has traditionally been viewed as one of the cornerstones of nomadic pastoralism in Arabia. This approach encompasses a broader narrative that reduces the

inhabitants of Arabia to the passive margins of the ancient Near East. We argue that not only did the domestication of the dromedary fundamentally alter the conduct of trade, but it also contoured political relations, between Arabia and the fertile crescent between c. 1000 and 500 BCE. The inability of ancient states to engage with unfamiliar social organizations in Arabia ultimately resulted in sweeping changes to regional order throughout southwest Asia.

Magee, Peter [13] *see* Zambelli, Amber [13] *see* Hammer, Emily

Maggi, Roberto [218] *see* Riel-Salvatore, Julien

Mahar, Ginessa (American Museum of Natural History)

[115] *Archaeological Geophysics as Primary Data*
All too often, archaeological geophysics is used as a prospection method, merely to locate buried archaeological features that will then be "ground-truthed" via excavation. Here I argue that archaeogeophysics and other remote sensing techniques are a primary means of archaeological investigation. This synthesis brings together broad-scale archaeogeophysics, mapping, and selected excavations to provide a more holistic view of the sites presented. The geophysical data are used to interpret formation and function of these sites based on the integration of the above listed methods and evidence and serve to provide information that would be lacking in the archaeological investigations otherwise.

Mahoney, Daniel (University of Chicago)

[228] *Resistance or Isolation: The persistent ceramic tradition of the central highlands in Yemen during the Islamic period*
Located 100 kilometers south of Sanaa, the intermontane Dhamar Basin was a middle-ground for various contending dynasties in the Islamic period. While these groups left their mark through various architectural and land use remains, the ceramic assemblage of the local population has remained remarkably consistent with earlier periods in contrast to the many new wares which appear on the coasts. This paper summarizes the findings of an analysis performed on the Islamic pottery collected by the Dhamar Survey Project since 1994, and investigates reasons for the strong persistence of this local ceramic tradition.

Maillo, Jose Manuel [218] *see* Bernaldo de Quiros, Federico

Majewski, Teresita (Statistical Research, Inc.), Robert Heckman (Statistical Research, Inc.), Joseph Balicki (John Milner Associates, Inc.) and Thomas Whitley (Brockington and Associates, Inc.)

[80] *Managing USACE, SLD ARRA-Funded Projects: Challenge and Response*
ARRA work through the USACE, SLD consisted of 40 individual delivery orders completed within less than 18 months. The work provided the government's three prime contractors with opportunities to gain new experience and build relationships with every USACE district in the continental United States. In addition to archaeological survey and site evaluations, contractors and their small business team members completed geoarchaeological

and condition assessments, National Register nominations, GIS analysis and modeling, curation, and other tasks. Accelerated timelines for project completion spurred development of innovative fieldwork and management strategies to meet the government's requirements for high-quality archaeological work and contractual accountability.

[80] *First Chair*

Major, Maurice [153] *see Dye, Thomas*

Makarewicz, Cheryl [169] *see Weber, Sadie L.*

Malainey, Mary (Brandon University) and Timothy Figol (Brandon University)

[19] *Of Pots and Stones: The Contribution of Residue Analysis to the Functional Analysis of Vessels, Tools and Features*

Results of the functional analysis of artifacts and features, primarily from sites in Western Canada, the Rocky Mountains and Southern Plains, will be presented. Salient aspects of morphology, lipid residue composition, associated archaeological remains and site context found to relate to function will be identified. This research is part of a multi-year study involving extensive intra- and inter-site comparisons of previously excavated material. Lipid residues identified on the basis of fatty acid composition alone were reanalyzed using high temperature gas chromatography (HT-GC) alone and with mass spectrometry (HT-GC/MS) with respect to occurrence of biomarkers.

Maldonado, Jesus [105] *see Hofman, Courtney*

Malhi, Ripan [11] *see Johnson, John R.*

Malin-Boyce, Susan [80] *see Maeyama, Kimberly*

Malloy, Maureen (Society for American Arch) [113] *Discussant*

Malo, Erika (University of Alaska-Anchorage)

[113] *How the Central Aleutians Upland Archaeological Project is using social networking and video as outreach*
Since 2007, the Central Aleutians Upland Archaeological Project has been surveying upland sites on Adak Island, Alaska. The multiyear project has a public outreach component, which includes producing an educational film and using social networking websites like Facebook, Twitter, and YouTube. Each outreach medium targets a different audience. The social networking websites reach the general audience and schools, while the film will be distributed to Alaska public schools. Using place-based education theory the intention is to equip teachers with a tool that connects social studies to math, reading, and writing.

Maloo III, George (Centro de Investigación Arqueológica-PH El Diquís)

[8] *Classic Maya Agriculture in Joya de Cerén: Platforms, Walkways & Other Cleared Areas*

Classic Maya agriculture has been traditionally characterized as highly organized with significant intensification to support large populations (Abrams 1995; Sheets et al. 2007). Even in the Zapotitán Valley populations were such to require an intensive agricultural

strategy (Black 1983). Recent work at Joya de Cerén revealed evidence of this strategy; however, several of the operations lacked evidence of cultivation. This suggests first that the strategy was not geared to maximize space, indicating that production pressure was not high (Christine Dixon, personal communication, 2009) and second that processing areas for harvested manioc and maize were an important concern to these agriculturalists.

Manahan, T. Kam [221] *see Ardren, Traci [85]* *see Stockton, Trent*

Mandel, Rolfe (Kansas Geological Survey) and Alan Simmons (University of Nevada, Las Vegas)

[26] *Geoarchaeology of Ais Giorkis, an Upland Early Aceramic Neolithic Site in Western Cyprus*

Ais Giorkis is a small early aceramic Neolithic village about 25 km northeast of Paphos, Cyprus, on a side-slope in the foothills of the Troodos Mountains. The site is well dated; primary occupation occurred around 7,500 cal B.C. (middle Cypro-PPNB). Unusual oval architectural features and associated cultural deposits, including large amounts of chipped stone (~200,000 pieces) and faunal remains, plus well-preserved remains of domesticated plants, are in buried contexts. Four strata consisting of colluvium have been identified, all stacked on top of each other. This paper addresses the stratigraphic context of the archaeological record and considers the site formation processes.

Maniery, Mary (Par Environmental Services, Inc.) [127] *Discussant*

Manne, Tiina (University of Arizona)

[205] *Who needs a crystal ball? Anticipating short term climate instability during the Upper Paleolithic at Vale Boi, southwestern Portugal*

The Vale Boi archaeofaunal assemblage from southwestern Portugal reveals evidence of Upper Paleolithic resource intensification in the form of bone-grease rendering of ungulates and concentrated rabbit exploitation. With initial occupation at 27,000 BP, Vale Boi represents the earliest known case of grease rendering in Eurasia. The presence of fully adult red deer and horse remains, in combination with fetal/neonate individuals, indicates a spring occupation. The timing of grease-rendering at Vale Boi was likely due to the Atlantic-influenced Mediterranean climate of the region. This timing, however, gave foragers an increased ability to anticipate and prepare for future short-term climate instability.

Manney, Shelby (Arizona State University\Digital Antiquity) [118] *Discussant*

Mannheim, Bruce (University of Michigan)

[24] *The Inka ziqi system as social replicator*

Replicators are extra-somatic social mechanisms through which social and cultural representations are coordinated among individuals, thereby stabilizing the system of representations. Replicators, which may be material or formal, have specific semiotic properties that allow them to function in the background of situationally specific social claims, presupposed, rather than asserted. The Inka ziqi system, a set of sight lines radiating out from the

ceremonial center of Cuzco was just such a multiple-functional replicators, allowing it to scaffold competing political and resource claims, as it coordinated the terms in which these claims were made.

Manning, Cassandra (Portland State University)

[178] *The Role of Salmon in Middle Snake River Assemblages: A Re-examination of the Hetrick Site*
On the Columbia Plateau, the origin of the Winter Village Pattern has long been a focus of research. Intensification of resources such as salmon, roots, and local aquatic resources is often cited as the cause of declining mobility. To address this question in the middle Snake River region, I have re-analyzed fish remains from the Hetrick site (10WN469; Weiser, ID), with occupations spanning the Holocene. Expectations from foraging theory and paleoclimate data are used to address whether salmon and other fish use changed over time and if such changes are correlated with the development of the Winter Village Pattern.

Manuel, Cueto [59] *see* Castro, Alicia S.

Manzanilla, Linda (U Nacional Autonoma de Mexico)

[116] *Intermediate Elite Control Of Craft Production And Sumptuary Good Exchange In Barrio Centers At Teotihuacan (Classic Period)*
Teotihuacan was no doubt an exceptional metropolis in Mesoamerica during the Classic period: large planned urban settlement, a craft production center, a multiethnic city, the capital of a peculiar type of state, a sacred site, a corporate society. Two different control levels emerge from the analysis of craft production and sumptuary good exchange in the city: the co-ruling elite, involved in the control of foreign raw materials such as jadeite, mica and perhaps slate, and the intermediate elites heading barrio centers, involved in the flow of marine shells and other fauna, cotton mantas, hides, perhaps greenstones, pigments, etc. This paper will review the Teopancazco barrio center as an example of the latter, involved in the flow of goods from northern Veracruz to Teotihuacan, and their transformation into elite attires.

Marciniak, Arkadiusz (Institute of Prehistory, University of Poznan) [110] *Discussant*

Marcone, Giancarlo (University of Pittsburgh) and William Locascio (University of Pittsburgh)

[93] *Moving from the dichotomy between economic systems and self-aggrandizers. Exploring the Parita valley, Panama and Lurín valley, Peru*
If we adhere strictly to the "top-down/bottom-up" dichotomy in archaeology, then we tend to think of past societies in similarly rigid ways, leading us toward repetitive conclusions about systemic economic control or individual self-aggrandizers. Understanding how regional systems affected social circumstances among local populations and how local populations responded, while not a novel idea, strikes us as a particularly effective one for reaching broader conclusions about how and why societies change. We compare evidence from the Lower Lurín valley in Peru and the Río Parita valley in Panama to investigate various ways regional and local interactions affected broader social change.
[93] *First Chair*

Marcus, Matthew [220] *see* Kakoulli, Ioanna

Marden, Kerriann (Tulane University)

[237] *Violence, taphonomy and cannibalism in Chaco Canyon: Discerning taphonomic changes from human action in the archaeological record*
The claim of cannibalism in the Southwest has sparked much controversy, and Chaco Canyon plays a central role in the hypothesis of widespread Southwestern cannibalism. Although logical weaknesses in the argument for cannibalism in Chaco have been addressed in detail elsewhere, the actual taphonomic evidence that underpins these assertions has not received similar attention. This presentation revisits the data and weighs the validity and reliability of the taphonomic criteria upon which claims of cannibalism in the Southwest have been based.

Marek-Martinez, Ora (University of California, Berkeley) [252] *Discussant*

Mark, Robert (Ruperstrian CyberServices) and Evelyn Billo (Rupestrian CyberServices)

[60] *Using Super-high Resolution Panoramas (Gigapans) to Document and Study Rock Art Panels*
Relatively new robotic hardware and associated software permits capture and stitching of hundreds of telephoto high-resolution images into a large panorama file, the order of a gigabyte or more in size. These images can be examined in programs such as Photoshop or exported into formats that permit panning and zooming in a browser, such as Zoomify. Examples will be presented from the Southwestern United States.

Marken, Damien (Southern Methodist University)

[9] *Mapping Maya Peripheries: Recent Settlement Research at El Peru-Waka', Guatemala*
Settlement pattern studies remain a critical avenue of investigation into prehispanic social organization and integration. This paper will present the results of a 10 square km full-coverage survey and extensive test excavation program surrounding the ancient Maya center of El Perú-Waka'. These data both inform the settlement history of this important Classic city and highlight the need for more extensive and intensive settlement research to understand of the full range of settlement variability in the Maya lowlands.
[9] *First Chair*

Marks, Brian

[265] *Site Formation Processes of Ontolo, A Submerged Prehistoric Site in Apalachee Bay, Florida*
The ocean floor is a dynamic environment, and artifacts recovered from submerged prehistoric sites will be redistributed across a site. By examining the oceanographic processes (biological effects, currents, waves, tides, and storms) at these sites, we can determine the overall effect on artifact distribution from the site formation processes. Understanding post depositional site transformations allows archaeologists to evaluate the quality of the data recovered, and how to adjust both data gathering and interpretation techniques. Archaeological sites in Apalachee Bay, in the northeastern Gulf of Mexico, are protected from major storms due to the nature of the continental shelf in that area.

[265] First Chair

Marks, Jennifer (San Francisco State University), Mark Griffin (San Francisco State University) and Randy Wiberg (Holman and Associates)

[194] Nonalimentary tooth use in ancient California

It is hypothesized that prehistoric Californian individuals with extreme dental wear will exhibit patterns significantly different than those with typical wear. Casts of the dentitions of prehistoric individuals were examined under a scanning electron microscope, the resulting images qualified and quantified, then measured statistically against the control group whose teeth exhibited less extreme wear. It is expected that this study will demonstrate that specific methods used in ancient basket-weaving are discernible through examination of dental microwear. This research will contribute a methodological example of the use of dental microwear in explaining aspects of ancient life other than diet.

Marks, Ted [61] *see Kendall, Bryan S.*

Marks, Theodore (The University of Iowa)

[2] Landscape Utilization and Raw Material Economy: Comparisons between Middle Stone Age and Late Stone Age human behavior in the Namib Desert, Namibia
Surface surveys in low-energy arid contexts hold the possibility of answering questions on African Middle Stone Age (MSA) behavioral strategies at landscape and regional scales. This paper presents results of a 2010 survey conducted in the Northern Namib Desert in Namibia, an area containing abundant MSA and Late Stone Age (LSA) surface lithic scatters. I demonstrate that the spatial distribution of artifacts across the landscape has been relatively little disturbed since their original discard, thus providing an opportunity for comparisons between the LSA and MSA in spatial patterning of behaviors such as raw material procurement and landscape utilization.

[2] First Chair

Marler, Clayton [262] *see Keene, Joshua L.*

Marshall, Charla (Indiana University)

[82] Ancient DNA from Angel Mounds, a Legacy Collection

Angel Mounds is a Middle Mississippian archaeological site (ca. A.D. 1050-1400) located on the Ohio River east of Evansville, Indiana. During the WPA era excavations led by Glenn Black, over 200 human burials were uncovered that are now curated at the Glenn A. Black Laboratory of Archaeology (GBL) at Indiana University. One hundred of these individuals were sampled for ancient DNA (aDNA) analysis, but the overall rate of mitochondrial DNA (mtDNA) retrieval was quite low (~5%). Infants, in particular, had the best DNA preservation of the individuals sampled, and the hypothetical bases for this result are explored.

Marshall, David (Arkansas Archeological Society), Juliet Morrow (Arkansas Archeological Survey) and Jeff Gatewood

[22] Interpreting Dalton Point Function at the Sloan site (3GE94)]

We conducted low power use-wear analysis of a selected sample of Dalton points from the Sloan site, a Dalton

cemetery in Northeast Arkansas. We replicated Dalton tools of Lafayette Formation (also known as Crowley's Ridge chert) and other regionally available lithic resources. We based replications on examination of morphological and metric attributes recorded on tools from the Sloan site. We used replicated Dalton tools for a variety of tasks in order to generate a dataset that could be compared with use-wear traces recorded on Dalton points and other tools from the Sloan site. Our presentation will focus on the results of our experiments and analyses.

Marshall, Fiona (Washington University) and Cheryl Asa (St. Louis Zoo)

[126] African wild ass behavior, domestication, and conservation

Morphological change was slow during the course of donkey domestication. This is demonstrated by donkey burials associated with an early Egyptian king at Abydos c. 3000 BC. These animals have limb-proportions of wild asses but pathologies indicative of load-carrying. Research on wild ass in zoo settings provides insights into relevant selection processes in captive settings. African wild ass are not social and do not fit expectations of a species with high domestication potential. However, this study provides insights into domestication processes showing that in captivity African wild ass are more behaviorally plastic than desert equids such as the Grevy's zebra.

Marshall, Joel (Glenn A. Black Laboratory of Archaeology, Indiana) and Anthony Krus (Indiana University, Glenn Black Laboratory of Archaeology)

[82] Retelling the Story of the East Village at the Angel Site (12-VG-1)

The East Village is a 5700 m² area on the boundary of the Angel Site and represents one of the longest occupied areas excavated at the site. Excavations of the East Village conducted by the WPA during 1938-1941 left many unanswered questions regarding the interpretation of the area. During 2010, the northern boundary of the WPA-excavated East Village was relocated and a trench excavated to document the original profile using current excavation methods. This has generated new radiocarbon dates on the structures along the East Village's northern boundary, and provided less ambiguous interpretations of the middens and structures

Marshall, John [52] *see Craig, Douglas B.*

Marston, John (Brown University)

[111] Ratios and simple statistics in paleoethnobotanical analysis

Many paleoethnobotanical analyses of macroremains begin with the calculation of a variety of simple measures, including seed density, ubiquity, diversity indices, and ratios. These methods are often used as preliminary mechanisms for data exploration but also can be the focus of analysis for a given set of samples. This paper reviews contemporary use of these simple measures as methods for both data exploration and hypothesis testing, with an emphasis on the use of ratios as a mechanism for testing hypotheses at both the intra- and intersite level.

[111] Second Organizer

Martin, Debra (University of Nevada Las Vegas), Kristin Kuckelman (Crow Canyon) and Debra Martin (University of Nevada Las Vegas)

[237] *Taphonomy and Warfare in the Mesa Verde Region*

The periodic eruption of warfare among the Ancestral Pueblo Indians who farmed the Mesa Verde region of southwestern Colorado is evidenced, on the remains of many individuals, by perimortem depression fractures of the cranium and other trauma characteristic of violence. Taphonomic study of the remains of those who died in warfare events reveals weathering, carnivore damage, and nonformal disposition of remains as well as evidence of trophy-taking and anthropophagy. Thoughtful analysis and interpretation of the taphonomic evidence has led to a richer and more nuanced understanding of Ancestral Pueblo warfare events and the societal contexts in which they occurred.

[237] *Third Organizer*

Martin, Debra [237] see Crandall, John J. **[237]** see Harrod, Ryan P. **[235]** see Anderson, Cheryl **[237]** see Martin, Debra L. **[171]** see Timm, Mary Beth R.

Martin, Erik [77] see O'Brien, Christopher **[77]** see Bayham, Frank E.

Martin, Fabiana (UMAG), Manuel San Roman (UMAG), Flavia Morello (UMAG), Francisco J. Prevosti (Museo de Ciencias Naturales B. Rivadavia) and Luis Alberto Borrero (CONICET)

[231] *The FONDECYT 1100822 Project, Ultima Esperanza, South Chile: Taphonomic reevaluation of the Late Pleistocene interaction between humans and extinct fauna in Southern Patagonia*

This paper will examine preliminary results obtained during the 2010-2011 field seasons in the Ultima Esperanza area, world-famous because of preserved remains of Pleistocene mammals at Cueva del Milodon. On the basis of new findings at Cueva Chica, recently discovered sites and a reestudy of old collections, a taphonomic reevaluation of the process of late Pleistocene human exploration of the area and carnivore-herbivore interaction is presented.

Martin, Helene [205] see Julien, Marie-Anne

Martin, Jacob (Hunter College, CUNY)

[219] *Analysis of the Chipped Stone Artifacts from the 2008-2010 Excavations at the Point Site*

This study presents an analytical overview of the lithic reduction strategies utilized at the Point Site (LA-8619) located on B-Square Ranch. Chipped stone tools, cores, and debitage recovered from the interior and exterior of the great kiva, and from the associated southern antichamber are analyzed and compared with the results of John Torres' 1999 lithic analysis from the nearby Tommy Site. Lithic reduction strategies, raw material preferences, and the evidence and implications of temporal and spatial differences among both reduction techniques and raw material selection will be discussed regarding the archaeological evidence from the 2008-2010 excavations.

Martin, Lana [123] see Arnold, Jeanne E.

Martindale Johnson, Lucas (University of Florida), Diane Chase (University of Central Florida) and Arlen Chase (University of Central Florida)

[6] *Stoking the Funeral Fire: The Use of Green Obsidian during Cremation at Caracol, Belize*

A Teotihuacán-style cremation at Caracol, Belize demonstrates that green obsidian functioned symbolically and experientially within this Maya ritual context. Green obsidian was an offering and was used as part of the cremation process. Six green obsidian spear-points recovered show extreme temperatures (>1000°C) were reached during the cremation. Points have crazing and five are bent due to high temperatures. Deformation is distal suggesting points were hafted and bending occurred due to being thrust into burning items within the cremation- thus providing clues about the experiences of those "participating in" a funerary event. Assessing lithic technology provides scientific insights into the phenomenological.

Martindale Johnson, Lucas [96] see Brandt, Steven A.

Martinez, Antoinette (California State University, Chico), Frank Bayham (California State University, Chico) and Chris O'Brien (Lassen National Forest)

[77] *Ishi, Culture Contact, and Anthropology*

Antoinette Martinez, PhD Frank Bayham, PhD Christopher O'Brien, PhD Ishi, Culture Contact, and Anthropology Studying Indians constituted a central part of the nation's early intellectual discourse, defining American sciences, and shaping conceptions of the nation's history. The recent discussion of "event" as an analytical tool in the social sciences provides an opportunity to reconsider the role of Ishi in the context of culture contact issues and within the historical context of our discipline. The power of the concept of the "last wild Indian" may have caused a dramatic shift in the prevailing paradigm and opened an anthropological floodgate.

[77] *First Chair*

Martinez, Antoinette [194] see Gardner, Karen S. **[77]** see Bayham, Frank E. **[77]** see O'Brien, Christopher

Martinez, Desiree (Harvard University & Cogstone/SCE)

[48] *A Land of Many Archaeologists: Archaeology For, By, and With Descendant Communities*

The postcolonial critique of the practice of archaeology questioned the silence, or the purposeful silencing, of the people from the communities that we researched. Community members questioned the research, produced without their knowledge and/or disregarding their input, which created a history that did not reflect their understanding of themselves and the world around them. This paper will discuss the growth of archaeologists from a variety of backgrounds, particularly Californian Indian, and will show that the inclusion descendant community members in our research has increased the diversity of topics studied and positively affected the direction of California Archaeology.

[1] *Discussant [252] Discussant*

Martinez, Desiree [123] see Teeter, Wendy G. **[105]** see Posadas Vidales, Lyllyam I.

Martínez, Gustavo (CONICET-INCUPA-UNICEN) and María Gutiérrez (CONICET-INCUPA. Facultad de Ciencias Sociales, UNCPBA)

[168] *An Early Holocene water well in the Pampas Plains (Pampean Region, Argentina)?*

The recently excavated site Paso Otero 4 (Pampean Region, Argentina) has yielded significant archaeological and paleoenvironmental information for the region. A remarkable feature of the site is a circular U-shaped hole of ca. 1.4 m depth assigned to the early Holocene (ca. 8700-8000 years BP). The aim of this paper is to discuss the probably functional assignment of this trait to a water well through the use of different lines of inquiry such as radiocarbon dating, sediment textures, pollen, diatoms, and silicobiotoliths analyses. Paleoenvironmental proxy indicates that it would have been dug during a period where arid conditions prevailed.

Martínez, Gustavo [71] *see Flensburg, Gustavo*

Martínez, Jupiter (INAH-Sonora)

[147] *Oqui Ochoa; a funerary bundle of Opata origin?*

During the 2009 excavation season of the Sierra Alta de Sonora project, done in Cueva de Ochoa cliff dwelling associated with Casas Grandes, we found a human burial on the wall debris. The previous analysis show us that was a woman from the mission period, but was not a christian burial type. Apparently she was a woman healer because the artifact association like mullein and corn leaves. In the paper I present an argument on this hypothesis.

Martínez, Jorge [142] *see Pintar, Elizabeth L.*

Martínez de Luna, Lucha [162] *see Levine, Marc N.*

Martínez Ordóñez, Eva [128] *Discussant*

Martínez Tuñón, Antonio (Zona Arqueológica de Monte Albán-INAH) and Rubén García Lozano (Zona Arqueológica de Monte Albán)

[95] *El tortuoso camino para la Declaratoria de un sitio de Patrimonio Mundial: Las Cuevas Prehistóricas de Yagul y Mitla en los Valles Centrales de Oaxaca, México.* La integración del expediente técnico y la gestión para la inclusión de las Cuevas Prehistóricas de Yagul y Mitla en los Valles Centrales de Oaxaca en la lista indicativa del Patrimonio Mundial de la UNESCO, como Paisaje Cultural, se logró mediante un laborioso y complejo proceso de investigación documental, la cooperación con instituciones nacionales, estatales y civiles, autoridades y población de los tres municipios que integran la poligonal declarada. Se presentarán antecedentes de la protección y salvaguarda del área de Cuevas Prehistóricas, la integración del expediente técnico y el nombramiento oficial, además de los principales planteamientos del Plan de Manejo.

Martino, Gabriele [218] *see Riel-Salvatore, Julien*

Martorelli, Sean (Indiana University of Pennsylvania)

[209] *Monongahela Mystery: Applying Use Pattern Analysis to Monongahela Village Sites*

Monongahela villages often contain post-enclosed pit features either attached or unattached to circular

dwellings. However, archaeological understanding of inter-site and intra-site variation in these architectural features remains limited. Through flotation, quantification and analysis of the contents of soil samples from selected proveniences including the post-enclosed pits as well as refuse pits, stockade trenches and other domestic features, this project provides a clearer picture of the actual function of post-enclosed pits (i.e. storage, ritual or other). Also addressed are questions regarding the use of space in Monongahela villages and its relevance to human adaptive behavior.

Martorelli, Sean [65] *see Verbka, Joe*

Marwick, Ben (University of Washington), Anna Cohen (University of Washington), Seungki Kwak (University of Washington), Kimbi Macy (University of Washington) and Andy Cowan (University of Washington)

[4] *Geoarchaeology of Iron Age ceramics at Tham Sua Cave, Northern Lao PDR*

Despite their abundance in the archaeological record, the chronology, technology and function of ceramics in Laos are currently poorly understood, especially their relationship to better documented Thai ceramics. Recent archaeological excavations at Tham Sua Cave by the Middle Mekong Archaeological Project recovered prehistoric ceramics typical of the region. Here we present results of recent luminescence dating to determine chronology, X-Ray Fluorescence analysis to investigate technology and Gas Chromatography-Mass Spectrometry analysis to investigate function. Our main findings include that the ceramic assemblage dates to the Iron Age and was likely used with edible plant materials.

Marzaioli, Fabio [92] *see Lubritto, Carmine*

Masaguer Otero, Maria (Universidad Complutense de Madrid)

[224] *Un Acercamiento Emic a los Canteros Mayas: El caso de Tixhualactun.*

El mundo de la piedra puede ser estudiado desde perspectivas émicas y éticas. Desde un acercamiento emic podemos estudiar denominaciones de piedras en la lengua local, cuáles son los criterios para diferenciarlas, cómo y dónde se buscan y finalmente ver cómo "se les da vida". Este texto es el resultado preliminar de un trabajo de campo hecho con canteros mayas en el pueblo yucateco de Tixhualactun y parte de un estudio tecnológico de los elementos escultóricos de la ciudad del Clásico maya EK'Balam.

Mason, Owen (INSTAAR University of Colorado)

[159] *Revisiting the affinities of the early Thule succession within Kotzebue Sound: Impact of the 2010 season at Cape Espenberg on conventional wisdom.* Early Thule occupation at Cape Espenberg includes >100 houses constructed AD 1000-1500, established from 2007-10 mapping and excavation across several dune ridges. Subsistence relied on realistic lure and spear-based fisheries and for caribou, tapering tang arrowpoints. Diagnostic traits indicate both "southern" and "northern" affinities: Northern-derived Birnirk/early Thule "cultures" were succeeded by a southern suite of Punuk and Bering Strait practices, replete with evidence

of conflict (i.e. slat armor). Newly introduced practices include labretifery and wound pins while lithics (jade, chert, slate, quartzite) reflect a wide catchment from the Brooks Range, the Kobuk, and the Seward

Mason, Owen [159] *see Hoffecker, John F.*

Mason-Kohlmeier, Lea [137] *see O'Brien, Helen L.*

Masse, W. (Los Alamos National Laboratory) [199]
Discussant

Massey, David (The Ohio State University), Anne Bomalaski (Penn Museum), Christopher Thornton (Penn Museum) and Ayse Gursan-Salzmann (Penn Museum)

[167] *Cultural Dynamics at Tepe Hissar Iran During the Mid-Fourth Millennium BCE: A GIS Analysis*
Archaeological evidence demonstrates that during the fourth millennium BCE, the site of Tepe Hissar in northeastern Iran, located on the periphery of Proto-Elamite and Central Asian traditions, shifted its cultural orientation from the west to the Gorgan Valley in the north. The reason for this change is debated in economic, social, and political terms. We generate a cost surface analysis of trade routes between Tepe Hissar and the Gorgan Valley and conduct visibility analyses to gain insight into individual perceptions of their landscape.

Massigoge, Agustina [177] *see Gutierrez, Maria A.*

Masson, Marilyn (University at Albany SUNY)

[157] *Animal Husbandry, Veneration, and Sacrifice at Mayapan: Mundane-to-Sacred Economic Linkages in the Land of Turkey and Deer*

Tracking faunal use in functional contexts ranging from houselot to temple at Mayapan illustrates patterns documented for all other classes of economic goods at this Postclassic Maya capital city. Practices essential to the stability and authority of governing nobles and priests was founded in dependency on home production of its residents. Faunal distribution illustrates that white-tailed deer and wild turkey husbandry provided staple commoner foods and deer was a key export commodity in regional markets. Animals were equally essential for noble feasts and sacrifices to the city's gods and are venerated in effigy sculptures at Mayapan's public buildings.

[8] *Discussant*

Mathews, Darcy (University of Victoria)

[232] *Powerful Practice: Ritual Action and the Funerary Landscape of Rocky Point*

A millennium ago, ancestral Coast Salish buried their dead in burial cairn cemeteries, which are the material remains of funerary rituals. Following Bell's (1992) notion of ritualization, ritual does not passively mirror the social, it creates it. This approach is applied to the landscape of Rocky Point on southern Vancouver Island, one of the largest recorded funerary complexes on the Northwest Coast. This paper explores these cemeteries within a framework of ritual practice and discusses the implications for strategies of differentiation through degrees of formalization in feature construction and use of space within and between these cemeteries.

Mathews, Rolf [176] *see Hayden, Brian*

Mathia, Thomas [242] *see Szczepanowska, Hanna Maria*

Mathien, F. Joan [136] *see Hull, Sharon K.*

Mathiowetz, Michael (U.C. Riverside)

[201] *The Battle of Winter and Summer: The Symbolism of Seasonal Change in Pueblo IV Kiva Murals at Pottery Mound, New Mexico*

Among the most dramatic cultural developments that characterized the Pueblo IV period (AD 1300-1600) in the American Southwest was the newly chromatic and naturalistic portrayals of humans, animals, and ceremonies in painted kiva murals. This development marked a sharp departure from the geometric imagery that characterized earlier kiva paintings. Scholars contend that these changes signaled the onset of modern Puebloan worldview. A study of contemporary Puebloan ethnography, along with a discussion on the nature of religious beliefs among the Casas Grandes (AD 1200-1425) culture, is helpful in interpreting Pueblo IV kiva mural scenes at Pottery Mound, New Mexico.

Matos, Allison [38] *see Barber, Sarah B.*

Matskevich, Zinovi [114] *see Meshveliani, Tengiz [203]*
see Bar-Yosef, Ofer

Matson, R. (Univ of British Columbia) and William Lipe (Washington State University)

[46] *Two Chaco-style Great Houses on Cedar Mesa--with Kayenta Pottery?*

The Et Al and Owen Great House sites on Cedar Mesa were mapped and surface collected in 2009, along with the HST site, a likely isolated great kiva. Associated ceramics indicate late Pueblo II occupations; Et Al also has a PIII component. The Great House architecture points strongly to Chacoan influences and specialized features are present. Kayenta tradition types dominate or contribute strongly to the late PII painted pottery assemblages, raising questions: Were these sites established by Kayenta colonists or is the pottery being traded in from south of the San Juan? Problems exist with both explanations.

[46] *First Chair*

Matsumoto, Go (Southern Illinois University) and Izumi Shimada (Southern Illinois University)

[174] *Reassessing the "Ceremonial Plaza" on the North Coast of Peru*

The Great Plaza at the Middle Sican capital is surrounded by monumental mounds but empty of any visible architecture and at first glance might appear to have had only occasional ceremonial use. Our excavations have yielded a different picture. Near the Huaca Loro mound we found metal workshops, areas of large-scale food preparation and consumption, and evidence of ritual activities, suggesting that the Plaza were used intensively for elite funerary preparations, celebrations of buried ancestors, and architectural renovations. We discuss implications of these findings in regard to our current notions of the plaza and funerary analysis on the north coast.

Matsumoto, Go [71] *see Shimada, Izumi*

Matt, Ira [57] *see Lee, Craig M.*

Matthews, Darcy [176] *see Leech, Rhonda*

Matthews, Neffra [60] *see Bies, Michael*

Mauldin, Raymond [177] *see Munoz, Cynthia M*

Maurer, Emily (Grinnell College) and Shelby Ramirez (Grinnell College)

[211] *Analysis of Northern Sinagua Rock Art*

Southwestern rock art has been extensively described, but rock art from the Northern Sinagua region of Arizona has not been well studied. One hundred fifty rock art panels in the Flagstaff area, consisting mostly of petroglyphs, were analyzed for a variety of variables including motif frequency, distance from habitation sites and washes, and directionality. The distribution of frequently-occurring motifs, such as bear paws, lizard men, snakes, and spirals was analyzed to evaluate the possibility that some of these may have functioned as clan symbols.

Maxwell, David (Simon Fraser University)

[34] *Marine Invertebrates from Caches and Problematical Deposits at Tikal, Guatemala*

Caches and problematical deposits in the Tikal North Acropolis have yielded a wide variety of marine invertebrate remains, including a wide variety of bivalves and gastropods, along with sea urchins, sponges, and other materials. The patterning of these remains through space and time is explored in this poster, with particular emphasis on changes that correspond with political events surrounding dynastic changes and warfare.

May, Elizabeth (University of Arizona)

[99] *Current Research into Sinagua Communities in the Verde Valley, Arizona*

Jeff Dean's legacy is one of attention both to the scale of human-environmental interaction and the scale at which we ask questions about these interactions. Current research into settlement dynamics within the Verde Valley seeks to investigate the severity and timing of arsenic poisoning on Puebloan communities who occupied the valley in the 12th through 14th centuries. Using a multidisciplinary approach combining dendrochemistry, dendrochronology and a landscape-scale study area, this study is shaped by Jeff Dean's emphasis on paleoenvironment and his methodology of investigating multiscale interactions while keeping human behavior in the fore.

[99] *see Elson, Mark D.*

May, J. (Schiele Museum of Natural History)

[162] *Hoyle House, Gaston County, North Carolina: From the 18th to the 21st centuries*

Recent renovations at this historic, National Register property have uncovered clues to the evolution of the use of space in this standing structure. From the traditional post and beam construction technique to the modified corner fireplaces, Hoyle House was and continues to be a work in progress. Changes in the economic status of the Hoyle family is reflected in the architectural detail of the house. Elements of these changes are presented in

the presentation along with examples of recovered material culture.

Mayer, Gary [36] *see Bergin, Sean M.*

Mazzola, Cristina [162] *see Wagner, Ursel*

McAllister, Martin (ADIA)

[76] *The Role of Forensic Archaeology in Archaeology*
Archaeologists have participated in the investigation of criminal and civil archaeological violations for over 30 years. They have provided forensic assistance to investigators and attorneys in a number of areas including: archaeological crime scene investigation; archaeological damage assessment; search warrant affidavit preparation; service of search warrants; grand jury testimony; participation in preliminary hearings and other pretrial procedures; and expert witness testimony in trials, civil hearings, and sentencing hearings. This is an important component of forensic archaeology and one that helps to protect and preserve archaeological resources.

McAnany, Patricia (University of North Carolina, Chapel Hill)

[197] *Reflecting on Activism and Indigenous Maya Heritage Alienation*

Engaged scholarship balances research with usefulness and benefits to involved communities and seeks to create a new model in which communities play an active voice in the construction of knowledge. Within archaeology, this dynamic is complicated by the addition of place-focused heritage. This friction-prone triad is examined in reference to the Maya region where centuries of heritage alienation have engendered an ambivalent relationship between indigenous peoples and their past. The inaccessibility of archaeologically constructed knowledge of pre-Hispanic places to local Maya communities highlights this alienation. This paper reflects on the ethical responsibility of archaeologists to deliver educational information (packaged within a specific logic) to local communities and whether, in the long run, such programs can empower—economically and politically—indigenous peoples and effect social justice.

[190] *see Murata, Satoru [249]* *Discussant*

McBride, Kevin [3] *see Kasper, Kimberly*

McCafferty, Geoffrey (University of Calgary)

[183] *Reflections on Ten Years of Nicaraguan Archaeology*

I was drawn to Nicaraguan archaeology through the question of Mesoamerican migrations, especially based on the possibility of Cholula's involvement in the process. This paper will present the results of two successive projects along the shore of Lake Cocibolca that recovered extensive information on Early Postclassic domestic practice. As a result of this holistic approach I will assess how the archaeological data compares with the model for Mexican influence based on ethnohistorical expectations.

[183] *see McCafferty, Sharisse D. [183]* *see Dennett, Carrie L.*

McCafferty, Sharisse (University of Calgary), Andrea Waters-Rist (University of Calgary), Celise Chilcote

(Trent University), Carrie Dennett (University of Calgary) and Geoffrey McCafferty (University of Calgary)

[183] *Raising the Dead: Mortuary Patterns in Pacific Nicaragua*

Mortuary practices are one of the fundamental expressions of ideological practice and cultural identity. Unfortunately, in Pacific Nicaragua cemeteries are also the principal targets of illegal looting, so relatively few scientific excavations have been conducted. This paper will summarize research on mortuary practices from the recently excavated sites of El Rayo, Tepetate and Santa Isabel. There is substantial variation among sites in the age, sex and health profiles of interred individuals. Furthermore, contextual variation indicates diverse mortuary practices between contemporary sites. These elements are explored in relation to differences in site function and regional as well as temporal differences.

McCall, Grant (Tulane University), Jonathan Thomas (University of Iowa), Rachel Horowitz (Tulane University) and Rebecca Taylor-Perryman (Tulane University)

[22] *Comparing Forager and Pastoralist Technological Organization in the Central Namib Desert, Western Namibia*

Within the last 2ky, certain southern African forager groups adopted pastoralism as an economic system and this represents one of the major cultural changes experienced during the Later Stone Age. This paper explores the technological consequences of this transition with lithic data from the gravel plains of the central Namib Desert, Namibia. The paper examines diachronic trends in knapping strategies, patterns of raw material use, tool retouch and use-wear. The paper finds that, while there were only very minor changes in formal tool characteristics, there were significant shifts in technological organization relating to novel pastoralist settlement systems and mobility patterns.

[61] *First Chair*

McCall, Grant [61] see Horowitz, Rachel A.

McCarthy, Daniel F. [158] see Howe, Mark L.

McClelland, John (Arizona State Museum) and Lorrie Lincoln-Babb (Bioarch, L.L.C.)

[52] *Assessing Bioarchaeological Evidence for a Demographic Collapse in the Lower Salt River Basin*

It has almost become an axiom that Hohokam people living in the lower Salt River Basin suffered poor and declining health during the Classic Period. In this paper, we review bioarchaeological data obtained during the late 1980s and 1990s from the lower Salt River and Tonto Basins. The emerging pattern does not support the hypothesis that people of the lower Salt River Basin were exceptionally stressed in comparison with their contemporaries who lived elsewhere. There are also some indications from more recent work that the case for a health and demographic crisis in the Phoenix Basin may have been overstated.

McClung De Tapia, Emily (UNAM Mexico) and Carmen Cristina Adriano-Morán (UNAM Mexico)

[25] *Evidence for management practices in wood charcoal remains from the Teotihuacan Valley, Mexico*

Several studies propose preferential use for fuel of wood taxa from primary vegetation, until such resources face depletion, at which time taxa from secondary vegetation together with other alternative resources are incorporated. However, the constant presence through time of secondary taxa among charcoal specimens recovered from prehispanic archaeological contexts in the Teotihuacan Valley, Mexico, indicates continual use of several types of wood as fuel, from the Formative through the Late Postclassic period in the region. The exploitation of secondary taxa is believed to represent a management strategy practiced by the region's inhabitants rather than the shortage of suitable wood resources.

McClure, Richard (U.S. Forest Service)

[160] *Elk Pass Obsidian and Precontact Band Territory in the Southern Washington Cascades*

At the landscape level, the embedded procurement strategies of hunter-gatherer-foragers may produce archaeological distributions of toolstone material that reflect the home ranges or territories of a specific group or band. The distribution pattern of Elk Pass obsidian within the southern Washington Cascade Range provides an example from the southwest Plateau region. Located in an alpine setting at the crest of the Cascades, the geochemical source is a toolstone quarry (45LE286) used as early as 6500 B.P. Distance-decay curves for formed tools and lithic debitage demonstrate the limited distribution of Elk Pass obsidian, with little to no evidence for exchange. The archaeological distribution for the material is limited to a radius of 52 km, and confined entirely to the upper Cowlitz River basin. Mechanical properties or quality of the toolstone may be a factor limiting distribution. The pattern of distribution suggests toolstone use was restricted to a specific band or small group of related bands with direct access to the Elk Pass quarry.

McClure, Sarah [106] see Teoh, Melissa L.

McCord, Robert [53] see Carr, Christopher

McCormick, David (University of South Florida), Ramunas Jakimavicius, Robert Tykot and E. Christian Wells

[92] *A Controlled Comparison of Chemical Residues in Plasters and Soils using Portable X-ray Fluorescence Spectrometry*

The use of pXRF instruments for field characterization of chemical residues from ancient activity areas is growing in popularity. However, the technology is of limited use in cases where it is desirable to isolate (e.g., through chemical extraction) the anthropogenic inputs from the mineralogical components. This paper presents the results of a multi-elemental comparison between a Bruker III-V pXRF analyzer and a PerkinElmer Elan-DRC-II ICP-MS on soil and plaster samples from the same deposits at El Coyote, a late prehispanic community in Honduras. A multivariate quantitative assessment of the data contextualizes the prospects of pXRF technology for activity area analysis.

McCorriston, Joy (The Ohio State University)

[13] *Bronze Age economic diversity and newly documented settlement in the Southern Arabian*

Highlands

New Bronze age settlement sites from southern Yemen Oman indicate that the first experiments with Arabian agriculture took place in the context of fully developed herding economies, especially of cattle. These discoveries support a hypothesis that ecological constraints for cattle around watering sites provided an important impetus settlement during the Middle Holocene recession of the Southwest Asian monsoons. Ecological analysis links sedentary practice to winter months and explains the introductions of winter crops rather than summer crops. The work has broader implications for the Bellwood hypothesis that Near Eastern agriculture spread outward with Levantine Pre-Pottery Neolithic B

McCoy, Mark (University of Otago), Peter Mills (University of Hawaii, Hilo), Jennifer Kahn (Bishop Museum) and Rowan Gard (Bishop Museum)

[261] *Territoriality and Interaction Spheres in Ancient Hawai'i: Results of new research on the exploitation of volcanic glass*

At European contact, rights to access and use of natural resources were strictly defined in Polynesia. In Hawai'i, breaking customary rights and obligations under the kapu system was punishable by death. But, we know remarkably little about how territoriality operated in practice. To begin to address this, we present the results of sourcing over 1,000 volcanic glass artifacts from across Hawai'i using EDXRF. This database gives us an unprecedented look at interaction spheres within the Hawaiian Islands created by regular social networks of trade, exchange, and access to natural resources on the community, district, and inter-island scales.

McCoy, Mark [261] *see Graves, Michael W. [261]* *see Browne Ribeiro, Anna T.*

McCrary, Melinda

[240] *New Discoveries in the Spatial Distribution of Olivella Grooved Rectangle (OGR) Beads*

Olivella Grooved Rectangle (OGR) beads are perforated eccentrically to make them a unique variety of shell bead. Research suggests OGR beads represent a discrete trading and interaction sphere involving mainland southern California, the southern Channel Islands, southern Oregon, and the western Great Basin. In 2007, 18 OGR beads were recovered from a human burial during a data recovery project at the City of Sunnyvale, Santa Clara County, California (CA-SCL-12/H). Previously one OGR bead has been recovered from the San Francisco Bay Area (CA-SMA-40). This discovery expands the OGR bead interaction sphere to include the San Francisco Bay Area.

McCurdy, Leah [51] *see Brown, M. Kathryn*

McCutcheon, Patrick (Central Washington University) and Kevin A. Vaughn (Central Washington University)

[160] *Tool Stone Extraction and Resource Density in the Saddle Mountains, Grant County, Washington*

Since 1998, Central Washington University, in cooperation with the Bureau of Land Management, recorded 665 archaeological localities during pedestrian survey of 4100 acres in the Yakima Fold Belt. Using a geodatabase, each locality was classified by assemblage

characteristics and environmental variables. Statistical tests show that localities are non-randomly distributed. Evidence for tool stone extraction appears to be embedded with other resource extraction activities. For instance, not all localities associated with an interbed contain evidence of tool stone extraction. In order to understand the distribution of tool stone extraction, the co-occurrence of other resources must be considered.

McDaid, Chris (US Army, Fort Eustis, VA) [185]

Discussant

McDonald, Josephine (Australian National University) [158] *Discussant*

McDonald, K. Harley [260] *see Foster, John W. [69]* *see Conrad, Geoffrey W.*

McEwan, Colin (The British Museum)

[15] *To have and to hold? Re-examining the Inca presence on the Pacific coast of Ecuador.*

The Inca affirmed their claim to imperial hegemony over the rich resources of the Ecuadorian littoral by virtue of at least one capac hucha burial on Isla de la Plata. On the other hand the empirical proof of effective control so far recorded is uneven and dispersed. This paper pieces together the disparate strands of archival and artefactual evidence to offer a more coherent view of the nature and duration of the Inca presence on the Pacific coast.

McGill, Alicia (Indiana University) [268] *First Chair*

McGill, Dru (Indiana University)

[207] *Pottery Production and Social Organization at Angel Mounds (12Vg1), Indiana*

In this study, variation within the ceramic type of Mississippi Plain was analyzed to discuss pottery production techniques and the social organization of people at the Mississippian archaeological site of Angel Mounds (12VG1), Indiana. Measurements of temper size and quantity, rim form, and body characteristics were taken and analyzed to identify patterns in pottery production across the variables of vessel type, space, and time. Interpretation of these patterns revealed the extent to which time, function, and social organization may have influenced pottery production. An innovative pottery analysis methodology was developed and tested using extant collections at Indiana University.

[78] *Discussant*

McGovern, Thomas [42] *see Schreiner, Amanda Marie*

McGraw, John (University of California, San Diego)

[41] *Stones of Light: The Use of Crystals in Maya Divination*

Crystals have long played a role in Maya ritual. In particular, divination makes use of crystals to render a series of visual signs which can be interpreted by the diviner as communications from supernatural beings. In this paper, I will draw from Marc Blainey's theory about a "reflective surfaces complex" in Maya ritual as well as theories from the cognitive science of religion to explore the significance of scrying among the Maya.

McGuire, Kelly (Far Western Anthropological) and Jay King (Far Western Anthropological Research

Group)

[83] *Landscape Evolution and Middle/Late Holocene Settlement Systems along the Humboldt River: A Case Study at Battle Mountain Pasture.*

Battle Mountain Pasture is located on a broad valley at the confluence of the Humboldt River, Reese River, and Rock Creek. This otherwise flat alluvial plain is punctuated by a series of well-dated abandoned meander belts and terraces that comprise a series of Middle and Late Holocene landscape features. Using these features as a basis for an archaeological sample design, a total of 9,158 acres were systematically surveyed resulting in the documentation of 230 sites. The distribution and frequency of these archaeological components, when analyzed with respect to the dated landforms upon which they were deposited, reveal a dynamic picture Middle and Late Holocene riverine use and settlement change.

McGuire, Kelly [11] *see Hildebrandt, William R.*

McGuire, Randall (Binghamton University)

[197] *Working Class Archaeology*

Traditionally archaeology has been a practice of and for the middle class. A working class archaeology entails a radical reorientation of that class. This paper considers how some archaeologists are engaging in a praxis of archaeology that uses our craft to help working class communities construct meaningful histories, that strives for real collaboration with these communities and that engages in the struggle for workers rights. This praxis speaks to the working class experience, in a language that working families can understand, about events that interested them and that they feel directly connected to and in solidarity with their interests.

[93] *Discussant [173] First Chair*

McGuirt, Michael [136] *see Pool, Michael D.*

McHone, Elizabeth (Ripon College)

[35] *Paleoethnobotany at Cerro Trapiche, Moquegua, Peru*

Results of a paleoethnobotanical analysis will be presented, showing the relative importance of local agriculture versus collecting of plants from the local environment. An emphasis on maize and other domesticates shows that the Cerro Trapiche were either integrated into an agricultural system or were trading/relying on agricultural products for the majority of their diet. Comparisons across time and space will be shown using several different statistics of ubiquity and diversity.

McIlraith, Erin (Washington State University) and Justin Williams (Washington State University)

[257] *Learning Lithics: Quantifying Flake Uniformity for a Beginner Flint Knapper*

Debitage analysis has been used to determine the stage of production and the type of lithic technology being produced. These are largely inferred based on flake size and flake type. Experience with flint knapping, however, can impact the quality and uniformity of flakes as well as the frequency of angular shatter produced, and although this is assumed, it has rarely been quantitatively tested. This study demonstrates definitively that as a knapper gains experience, the flakes produced become more

uniform and predictable in flake length as well as the frequency of angular shatter.

McKechnie, Iain [168] *see Orchard, Trevor J.*

McKee, Brian (University of Arizona) [250] *Discussant*

McKee, Karen [265] *see McKillop, Heather*

McKenna, Jeanette (McKenna et al)

[259] *A Re-Evaluation of Milling Sites in Southern California*

A meeting of local archaeologists was held in Riverside County, California, to discuss problems with the recordation and interpretation of milling sites, prevalent throughout the region. New ideas about the interpretations and the types of information needed in the records were discussed and it was concluded that we have been missing significant interconnections by grouping these sites into "negligible" resources. A re-evaluation was recommended and new working methods proposed.

McKenna, Peter (BIA SWRegion) and Thomas Windes (UNM)

[99] *Early Navajo Occupation in East Chaco Canyon, New Mexico*

In recent decades the heartland of the Dinétah Navajo has been intensively studied. Results of new tree-ring dates provide a firm temporal footing for the identity of early Navajo occupation in the Chaco area. We examine six Dinétah-era Navajo sites in eastern Chaco Canyon and believe that these, and other Chacra Mesa sites, represent some part of the greater Dinétah settlement. We offer suggestions as to why Chaco failed to become as intensively settled as the Dinétah heartland 20 miles to the north.

McKenna, Peter [99] *see Windes, Thomas C.*

McKeown, Ashley (University of Montana) and Elizabeth A. DiGangi (International Criminal Investigative Training Assistance Program (ICITAP)-Colombia)

[121] *If the rum don't kill me, I'll live until I die: A bioarchaeological study of British soldiers from St. Kitts, West Indies.*

During the British military's occupation (1690-1853) of Brimstone Hill Fortress on St. Kitts in the West Indies, thousands of enlisted men served at the Fortress with many dying on the island. Excavations at Brimstone Hill Fortress National Park have revealed the presence of two distinct burial areas containing the unmarked interments of British soldiers and possible family members close to a marked cemetery. This bioarchaeological study of these enlisted personnel uses skeletal evidence, archaeological context and historical documentation to explore the lives and deaths of the common soldier serving in the British military in the West Indies.

McKillop, Heather (Louisiana State University), Harry Roberts (Louisiana State University), Karen McKee (USGS-Wetlands Research, Lafayette), Terance Winemiller (Auburn University Montgomery) and Michael Wiemann (USDA-Forest Products Lab,

Madison)

[265] *Submerged Salt Works: Snorkeling, Coring, Imaging, Diving, Excavating the Coastal Maya Underwater*

Could enough salt have been produced along the coast of Belize to supply this basic biological necessity to nearby inland Maya cities? We discuss new fieldwork investigating the Paynes Creek salt industry, including its submergence by sea-level rise and the wooden structures preserved in a peat bog below the seafloor. Previous research by McKillop and LSU students mapped 4000 wooden posts defining buildings, as well as "briquetage"--pottery from boiling brine to produce salt. Ongoing fieldwork includes remote sensing in an automated vessel designed for shallow water, integration of imagery into our UnderwaterMaya GIS, sediment coring, and excavation.

McLeester, Madeleine

[124] *The Archaeology of an Industrialized Environment: Tackling the Environmental Archaeology of the Hidden, Obscured, and Erased Past of the Calumet Region*

The Calumet Region seems ill suited for an environmentally centered archaeological investigation. It is covered by over 60 square miles of slag, Superfund sites, and toxic soils. All of these things make this place seemingly unenvironmental and unarchaeological. However, my research argues that the archaeology of this region is essential precisely because of these factors. Industrialization, its decline, and exit from the region have erased the preceding record of human impact on the environment. Through the lens of the changing political ecology of this region, this paper investigates the physical and discursive erasure of the Calumet Region's past.

McLeod, Bart (University of South Florida), Lori Collins (University of South Florida) and Travis Doering (University of South Florida)

[82] *Re-examining the Past: Three-Dimensional Documentation with Depression-Era Archaeology Collections of Pre-Columbian Ceramic Vessels from Florida*

This poster presents the results of an analysis of complete ceramic vessels and diagnostic sherds excavated by WPA archaeologists and their crews from four pre-Columbian archaeological sites located in Hillsborough County, Florida. Digital models of the ceramics were created using a Konica-Minolta Vivid 9i laser digitizer. These data were then processed and the digital models used to examine vessel form, surface treatment, and stylistic design. The ceramic artifacts are being analyzed to quantify the degree of homogeneity or heterogeneity of vessel symmetry and design elements to describe the intensity of interaction between the four sites.

McMahon, Catherine, Michael Trimble (U.S. Army Corps of Engineers, Center of Expertise for the Curation and Management of Archaeological Collections), Andrea Adams, Cody Gregory and Lester Stone

[161] *Veterans and Archaeological Collections: The History and Application of the Veterans Curation Project*
In 2009, the U.S. Army Corps of Engineers, Center of Expertise for the Curation and Management of

Archaeological Collections (CX-CMAC), began a groundbreaking project, the Veterans Curation Project (VCP). This project trains veterans in archaeological curation, thereby providing tangible work skills through the rehabilitation and preservation of archaeological collections, while advancing the public stewardship of federally owned archaeological collections. The veterans acquire and advance skills in a variety of areas, including photography, database management, software proficiency, and records management. The creation and implementation of the VCP as well as its implications for transitioning veterans will be presented.

McManamon, Francis (Digital Antiquity) [118] First Chair

McNees, Lance [168] see Smith, Craig S.

McNeill, Casey (Cultural Landscapes of the Irish Coast Project), Meagan Conway (Cultural Landscapes of the Irish Coast Project), Claire Brown (University of Notre Dame) and Ian Kuijt (University of Notre Dame)

[107] *Microhistories and Residential Genealogies of Domestic Life on Inishark, Co. Galway*
Based on oral history accounts from former residents of Inishark, Co. Galway, we explore the connection between residential histories, the changing tempos of use of individual buildings, and the lifeways of the former residents. We develop a multi-faceted understanding of island fluidity through the incorporation of archaeological survey results and historical records such as land valuation documents (1856-1941), census information (1901 and 1911), and immigration manifests. This study illustrates the necessity of developing personalized microhistorical models to understand village lifeways and preserving the cultural heritage of this coastal 19th/20th century fishing village.

[107] Second Chair

McNeill, Casey [107] see Conway, Meagan

McNeill, Fiona [167] see MacDonald, Brandi Lee

McNeill, Judith R. [23] see Welch, David J.

McNiven, Ian (Monash University, Australia) [253] *Ritual middening practices in Torres Strait, NE Australia*

Torres Strait Islanders of NE Australia are marine specialists who created diverse midden deposits. Some deposits are specialised communal mounds that contain the remains of 1000s of dugongs while much more numerous, complementary shell midden mounds point more to family-based depositional practices. I argue that both types of mounds accumulated in tandem and represented the ritualised deposition of highly socialised food remains associated with community (bone mounds) and family (shell mounds) definition and solidarity. The maintenance of the biographical history of food remains through ritual deposition in curated mounds suggests absence of a concept of rubbish.

McOmish, David [153] see Bowden, Mark C.

McPherron, S.P. [2] see Zhou, Cathy XY

Means, Bernard (Virginia Commonwealth University/Versar, Inc.)

[82] *The Future Meets the Past: Digital Mapping of New Deal Archaeology Projects Across the Lower 48 States*
Archaeologists working in collections repositories across the nation have at least a general notion of the New Deal material they safeguard from their specific locality or region. However, the full geographic and temporal parameters of New Deal archaeological investigations are currently not known. This poster represents an initial attempt to ascertain the full extent of New Deal archaeological investigations in the U.S. and draws on modern digital mapping technologies to explore these decades-old excavations.

[82] *First Chair*

Mebane-Cruz, Anjana (SUNY Farmingdale State College)

[202] *Barbuda: Agency Along the Borders of Change*
With emancipation in 1835, Barbuda was abandoned by its owners, forcing the former slaves to fend for themselves and leading to the creation of a hybrid of African, Native American, and British cultures. At the heart of Barbudan identity is a negotiation of boundaries between past and present while creating ways to develop their country and economy in a sustainable manner, while yet mediating public presentations and negotiations with Antigua and the larger world. Working with various international groups, Barbudans are actively reifying, mediating, and changing their cultural, geo-political, environmental, and technological borders through the control of land use, education, and development.

Medeiros, Melanie [179] *see Gabler, Brandon M.*

Mehrer, Mark (Northern Illinois University)

[258] *Mississippian and Chinese Neolithic Fortified Villages*

Fortified villages take their places in the trajectories of cultural change in both the Neolithic of China and in the Mississippian of North America. Despite some similarities in forms and functions, the defensive perimeters take on a variety of expressions depending on that which is being defended against and on other needs of the communities. A simple military defense often seems to be the determining factor, but in other cases the functions are not so easily interpreted. Examples from eastern China are compared and contrasted with Mississippian cases from the southeastern United States.

Meierhoff, James (University of Illinois at Chicago) and Mark Golitko (Field Museum of Natural History)

[193] *Obsidian acquisition, trade, and regional interaction at the ancient Maya farming village of Chan, Belize.*

This paper looks at the acquisition patterns of obsidian from the ancient Maya village of Chan, Belize, and how these patterns of long distance exchange are placed in a regional and greater Mesoamerican perspective. The extreme longevity of settlement at Chan (roughly 800 B.C.-1200 A.D.), in contrast to the rapid florescence and decline of other larger sites in the Belize River Valley, in conjunction with p-XRF's ability to accurately source a 100% sample of Chan's assemblage (N=742), allows us to examine how external socio-political changes influenced the maintenance of exchange networks that

supplied smaller settlements with obsidian.

Meignen, Liliane [17] *see Rendu, William*

Melgar, Emiliano (Posgrado UNAM), Emiliano Gallaga (INAH-CHIAPAS) and Reyna Solis (INAH)

[41] *Manufacturing Techniques of Pyrite Inlays in Mesoamerica*

In different sites of Mesoamerica the archaeologists have found several pyrite inlays assembled in mosaic mirrors. Unfortunately, the study of these objects is focused principally on their symbolic meaning and properties, but the analysis of their manufacturing techniques and the organization of their production is scarce. In this paper, we will present the technological analysis of the manufacturing traces that we applied on different pyrite inlays, using Experimental Archaeology and Scanning Electron Microscopy (SEM). This methodology allowed us to identify the lithic tools employed in their production with great accuracy and distinguish different technological styles.

Melgar, Emiliano [116] *see Velazquez, Adrian*

Meliksetian, Khachatur [63] *see Meredith, Clayton R.*

Melo, Maria (Faculty of Sciences and Technology/UNL)

[203] *Bright Light: Microspectrofluorimetry for the Characterization of Dyes in Ancient Andean Textiles*
The colors of Andean textiles from the MFA-Boston collection were studied. Dye analysis was performed both by HPLC-DAD-MS and microspectrofluorimetry. Microspectrofluorimetry was used to analyze 76 microsamples taken from different Andean textiles dated from 200 B.C. - A.D. 1476. The results obtained with this new technique were confirmed and are consistent with those obtained with conventional methods, requiring micro-sampling, such as HPLC-DAD-MS.

Meltzer, David (Southern Methodist University) [155]
Discussant

Menaker, Alexander (University of Chicago)

[241] *Colonial Beads throughout the Peruvian Andes*
This study examines colonial beads from throughout the Peruvian Andes, utilizing foundational research to demonstrate how beads can be used as chronological markers within their archaeological contexts. Moreover, this paper seeks to extend and complement the previous research through examining the social and religious dimensions of the bead trade. Emphasizing the role beads played in trade and their religious significance provides important insight into concepts of value and social processes within Andean communities themselves, and in relation to emerging global networks throughout the Spanish colonial period.

Mendez, Cesar (Departamento de Antropología, Universidad de Chile)

[213] *Terminal Pleistocene/early Holocene 14C archaeological site database in Chile: discussing critical issues for the first human settlement*

We present a revised 14C database for archaeological sites in Chile between 13000 and 7000 yr BP in order to assess the consistency of information on the early

settlement of the region. Results are presented in both calibrated and un-calibrated formats and are evaluated for their geographical distribution, contextual reliability, replicability and cultural association. This database constitutes the frame for discussing critical issues as the first consistent human presence, regional migratory differences, the possibility of an early coastal route of littoral-adapted peoples, and the coexistence/interaction of extinct faunas and human beings. Funded by FONDECYT 1090027 and 1090044 grants.

Mendizabal, Tomás [67] *see Davis, Michael H.*

Mendoza, Rubén (CSU Monterey Bay)

[195] *Architectural Histories and Historical Archaeologies: Recent Case Studies from the Missions and Presidios of the Monterey Bay*

Architectural history constitutes an area of inquiry generally identified with architectural historians and preservationists. Significantly, historical archaeology continues to advance the frontiers of this science of socially-defined spatial relationships. Recent text-based archaeologies in the Spanish colonial missions and presidios of California have produced exciting new revelations regarding the built environment. The product of Iberian, Mediterranean, Islamic, Mexican and American Indian traditions, California provides a unique cultural context within which to test the emergence of architectonic relationships and hybrid models for the built environments of the American west. This paper reviews findings from four California missions and the Presidio of Monterey.

[195] *First Chair*

Meniketti, Marco (San Jose State University)

[142] *Traditions and Transitions: pXRF Trace Element Analysis of Carib and Afro-Caribbean Wares, Nevis*
Colonoware or Afro-Caribbean wares have long been a source of controversy, in terms of both manufacture and constructed social meaning. Results are presented from recent pXRF neutron activation analysis of colonoware samples from archaeological context from Nevis, once a critical node of the West Indies slave trade. Trace element readings are compared with prehistoric Carib wares from the same island, along with modern ceramics produced by traditional potters. Findings point to common sources in manufacture and traditions, while ethnoarchaeological study suggests social meanings in the use of traditional pottery among the local population in transition

[142] *First Chair*

Menzies, Adam (University of Pittsburgh)

[93] *The mechanics of chiefly cycling episodes in the Central Region of Panama and the Western Venezuelan Llanos*

A basic observation of chiefdoms is that they undergo episodes of expansion and contraction of political centralization. These episodes are generally referred to as "chiefly cycling." These episodes of cycling often result in settlement and demographic shifts, changes in social organization and disruptions in economic spheres. This paper compares chiefly cycling in the Central Region of Panama and the Western Llanos of Venezuela in an attempt to examine what factors contributed to political instability and the dissolution of chiefly polities. In

particular, the sites of El Hatillo, El Gaván and El Cedral are examined.

Merchant, Peter (University of British Columbia) and Kenzie Jessome (University of British Columbia)

[96] *Intensive Slate Processing at Ts'unay (Deserted Bay): Evidence for change in land and resource use*
Ethnographic evidence indicates that Ts'unay (site EaRw-3) located on British Columbia's south coast was a significant salmon run and an important socio-economic site for the shishálh Nation. The importance of slate in processing fish has been ubiquitously reported throughout shishálh territory. An examination of a recently recovered lithic assemblage composed almost entirely of slate corroborates that intensive fish processing occurred at Ts'unay. The preliminary results of our research indicate that utilization of slate occurred more intensely during certain phases that are readily identifiable from a quantitative perspective and potentially correspond with significant changes in land and resource use.

Meredith, Clayton, Monica Tromp (Idaho State University), David Peterson (Idaho State University), John Dudgeon (Idaho State University) and Khachatur Meliksetian (Institute of Geological Sciences Yerevan, Armenia)

[63] *New Standards in the Analysis of Archaeological Metalwork using LA-ICP-MS: A Case Study from the South Caucasus Archaeometallurgy Project*
We conducted LA-ICP-MS trace element analysis for 74 pieces of copper and bronze metalwork from Armenia dating from the Early Bronze to Early Iron Age (late 4th to early 1st millennium BC). The purpose was to examine the effectiveness of LA-ICP-MS for determining chemical groups in early copper-based metalwork, in efforts to identify changing patterns in the circulation of these metals and for use in source analysis. Problems addressed include allied use of SEM-EDS for identification of major elements, the effectiveness of LA-ICP-MS as compared to OES, XRF, and INAA, and the quality of results achieved using different copper standards.

Meredith, Clayton [63] *see Rauh, Whitnie D.*

Meredith, Steven (Panamerican Consultants, Inc.)

[96] *Multiple geologic sources of tool stone as an indicator of geographic range of Early Archaic Societies in the Gulf South*

The spatial distribution of geologic sources of tool stone at the juncture of the Appalachian Piedmont, Appalachian Plateaus, and the Gulf Coastal Plain make central Alabama an excellent setting to study the geographic range of prehistoric societies. In this study, projectile point form is used to infer time intervals and raw material is used to infer range and movement of Early Archaic (ca. 9000-6000 B.C.) peoples in the area. The possibility of using proportions of multiple recognizable stone sources as an indicator of distinct societies is explored.

Meredith, Steven [6] *see Lambert, Shawn P.*

Merewether, Jamie [117] *see Arakawa, Fumiyasu*

Mergen, Vanchigdash [236] *see Eng, Jacqueline T.*

Merrell, Carolynne (Archaeographics)

[158] *Fleshing out the Idaho archaeological record through contributions from Rock Art investigations*

The last two decades have seen tremendous technological advancements in rock art research. The result is its greater inclusion into individual site investigations where rock art is one component as well as recognition of rock art as a viable contributor to the greater archaeology record. Recent research of pictographs and petroglyphs in Idaho offers several examples of how this information is helping answer questions regarding the culture patterns of the prehistoric peoples who first inhabited the state as early as 11,000 years ago. Rock art from selected Idaho locations will be discussed as a significant artifact to be included in the total archaeological site evaluation.

Merrill, Michael (Arizona State University)

[132] *Chumash Giant Keyhole Limpet Artifacts from Middle period Phase 2a (200 BC to AD 200), 5c and Late period Phase 1a (AD 1050-1250): Restricted Currency, Badges of Leadership/Status, and Open Currency*
Punctuated changes in style, form, and burial accompaniment of a specific artifact class may, in some cases, strongly correlate with significant social, political, and economic transformations in a past human society. To evaluate this proposition, I will examine changes in the style and morphology of giant keyhole limpet (*Megathura crenulata*) shell artifacts from burials in two Chumash residential sites (CA-SBa-81, occupied from 200 B.C. to A.D. 200) and CA-SBa-72 south, inhabited from A.D. 1050 to 1250) in the Santa Barbara Channel region of southern California.

Merriot, Ivy and Jan Sublett (Belgrade Elementary School, Belgrade Montana)

[113] *Archaeoastronomy Education*

Archaeoastronomy is a misunderstood area of study fraught with misconceptions of its purpose and techniques. Research questions asked by archaeoastronomers differ from questions asked by other sciences and the evidence supporting conclusions are often incomprehensible to the professionals from other fields. Project Archaeology has created and tested archaeoastronomy education materials in an effort to dispel misconceptions about archaeoastronomy and share the fun of exploring the ongoing relationship between land, people, and sky with our youth. This archaeoastronomy curriculum for the professional development of elementary teachers will be presented with a discussion of the pedagogical results of offering this training online.

Meshveliani, Tengiz (The National Museum of Georgia) and Zinovi Matskevich (The Harvard University)

[114] *The Neolithic transition in the south-western Caucasus*

The beginning of the agricultural way of life in the south-eastern Caucasus is firmly dated to the late seventh - early sixth millennium cal. BC. However, the situation in western Georgia is far from being that clear. Several known sites identified as "Neolithic", did not produce any clear evidence for domestication and sedentism. New

research, recently conducted on both open-air sites and caves, sheds new light on the Neolithic transition in the area and enables to characterize it as a prolonged process related to continuous interaction between local hunter-gatherers and the agricultural populations located farther east.

Messer, Andrea (Penn State)

[244] *Population Pressure and Small Ancestral Pueblo Sites in the Mesa Verde Region*

How are small sites distributed on the landscape and what are the factors that influence this placement? Is there more of a sociopolitical component or do the environmental concerns override all else? An analysis of four full coverage surveys considering population, landform, elevation, temperature, precipitation and the location of large sites, found that the most significant variable is the number of sites at any specific time. Population pressure influences site location more than the appearance of large aggregated sites and more than the effect of changing temperature and precipitation.

[251] *Discussant*

Messner, Timothy (Smithsonian NMNH) and Gary Stinchcomb (Baylor University)

[111] *Land-use, climate change and C3-dominated environments: furthering the intersection of paleoethnobotanical and geological analyses*

Land-use practices alter environments in unforeseen ways. Climate further exacerbates these impacts by forcing people to intensify production, which contributes to sedimentation and potentially diminishes returns. Understanding the relationship between prehistoric subsistence strategies and the environment however, requires the ability to detect: mode of production, paleoclimatic shifts, and the environmental and cultural effects of these processes. In this paper we demonstrate insights afforded through integrating multiple lines of archaeobotanical inquiry with phytoliths, soil organic carbon isotope analyses and pedology. Through these analytical techniques, archaeologists can better grasp the interplay between people, food-production and climate in C3-dominated environments.

Metcalfe, Duncan (University of Utah)

[91] *Time in Range Creek*

Range Creek Canyon contains a wide variety of archaeological sites in diverse topographic locations. Intuition suggests multiple settlement patterns account for this variation and, for the ecologically-oriented, that these settlement patterns likely reflect changing climatic and/or social factors. The two dozen calibrated radiocarbon dates from the canyon suggest otherwise. The majority of dates are statistically identical. Review of the radiocarbon calibration curve indicates that secular variation in the production of ¹⁴C is an important constraint on the precision of the dates. The implications for unraveling the remarkable archaeological record of Range Creek are reviewed.

[91] *Second Organizer* **[91]** *First Chair*

Meyer, Jack (Far Western Anthropological Research Group) and Jeffrey Rosenthal

[256] *Geoarchaeological Landscape History of the Sacramento River*

Like most large river systems, the Sacramento River has

a long record of human occupation that is linked and intertwined with its geomorphic history. Recent geochronological studies document the nature, timing, and extent of landscape changes along different parts of the river, and the discovery of buried sites. These studies show landscape evolution was driven by large-scale climatic shifts, expressed as cycles of landform stability and instability, which occurred repeatedly and often synchronously throughout the region. Though portions have remained relatively stable, much of the landscape has changed dramatically since prehistoric people first arrived and settled along the Sacramento.

Meyer, Jack [194] see *Beasley, Melanie M.*

Meyer, Regina (Missouri Army National Guard)

[150] *I Want to be Indiana Jones When I Grow Up*

The next generations of archaeologists are today's children. Unfortunately, in the past the public school curriculum did not address the nature of archaeological research in a realistic manner. In Jefferson City, Missouri, the public school system provides an advanced education program: Explore, Enrich, Research (EER). In conjunction with the Missouri Army National Guard, the EER program has brought archaeology into the classroom. The MOARNG and Jefferson City Public Schools have further developed the curriculum to provide an outdoor archaeological field school at the Ike Skelton Training Site.

Meyers, Maureen (University of Kentucky)

[240] *Trade and Power Across Households at a Mississippian Frontier*

Studying the Mississippian frontier allows archaeologists to better understand the emergence and maintenance of power within Southeastern chiefdoms. Various Mississippian frontiers were pertinent in the obtainment of trade goods, important symbols of chiefly power. This paper explores the role of one frontier site, Carter Robinson (44LE10) in southwestern Virginia, in the accumulation of Southern Appalachian chiefly power through its control of trade at the border. Settlement patterns both within the site and the region are used in conjunction with utilitarian (ceramic) and non-utilitarian markers (shell and cannel coal beads) of trade to identify changes at the frontier site over time.

[215] *Discussant*

Michael, Amy (Michigan State University) and Gabriel Wrobel (University of Mississippi)

[56] *Dental Histology and Comparative Health in Rockshelter Mortuary Contexts*

A dental histological analysis of multiple individuals from two rockshelters in Belize is presented. The primary research focus was to determine if there was a microscopic component that co-occurred with macroscopic markers of nutritional stress on the teeth. Microscopic markers are likely results of acute, severe stress events, while macroscopic markers signal chronic, low intensity stress events. Individuals interred in rock shelters may be non-elites, thus exhibiting poorer health. The purpose of this study is to determine health profiles of individuals buried in rockshelters and to compare these data with health profiles generated from individuals buried in cave contexts.

Michelet, Dominique and Gregory Pereira (CNRS, France)

[58] *Reflections on the Antecedents and Genesis of Urban Sites in the Zacapu Malpais*

The Middle-Late Postclassic Zacapu Malpais was covered by settlements, whose characteristics clearly qualify as urban. The general conditions associated with the appearance of these settlements, that have no clear local antecedents, include the retraction of the traditional Mesoamerican territory, the establishment of the Tarascan state, and regional conflicts. Recent research in the Bajío, some 40 km to the north, demonstrates significant Epiclassic settlement aggregations that could somehow prefigure Postclassic urbanism. From a diachronic perspective, we compare and contrast these two models of aggregation. We also explore social and political factors in the genesis of these urban phenomena.

Miles, Wesley D. [223] see *Purdue, Louise E.*

Milic, Marina

[97] *Into the great wide open: Exploration of Carpathian obsidian distribution in prehistory*

This review focuses upon the Carpathian obsidian sources in Hungary and Slovakia, detailing the nature of the deposits (small nodules in volcanic topsoils, unlike the major outcrops of Mediterranean and Anatolia) and their use from the Middle Palaeolithic onwards, by populations throughout central Europe and the Balkans, as attested archaeometrically since the 1960's. It then critically reflects upon the experience of non-maritime procurement, considering the necessary familiarity of landscape and river 'behaviour', together with the sensorial and practical realities of past journeys, as a means of better understanding the rationales that lay behind the "dots" on our modern distribution maps.

Miljour, Heather (Statistical Research, Inc.)

[80] *Enigmatic Rock Features in the Desert Southwest*

A series of enigmatic rock features are located along the shores of Painted Rock Reservoir, Gila Bend, Arizona. This poster displays how archaeologists record such features, and offers solutions to problematic interpretations.

Millaire, Jean-Francois (The University of Western Ontario)

[156] *Pots and Posts: Propitiatory Ritual at Huaca Santa Clara in the Virú Valley, Peru.*

This paper focuses on material offerings uncovered below the floor of a large room at the core of Huaca Santa Clara on the Peruvian north coast: a mid-size Virú settlement that functioned as an administrative center during the Early Intermediate period (200 B.C. – A.D. 800). The context and nature of these sacrificed offerings suggest that they were part of a propitiating ritual which set this room apart from other spaces within this civic complex. Similar cases of material offerings from neighboring valleys and from more distant regions will be examined to shed light on this form of ritual practice.

[35] see *Szpak, Paul*

Miller, Alexandra E. [36] see *Ullah, Isaac I.*

Miller, Bryan (University of Pennsylvania)

[54] Comparative analyses of hinterland communities: a multi-scalar investigation of Iron Age political networks in Eastern Inner Asia

This paper examines the diverse ways in which hinterland communities were integrated into larger political networks. Preliminary survey data of two neighboring valleys in western Mongolia reveal changes in mortuary architecture, site size and site density. These changes suggest divergent developments from similar patterns in the Bronze Age to increased diversity during the Iron Age. Comparative analyses of these developments illustrate how independent communities are differentially integrated into hierarchical networks at the local, regional, and macro-regional levels. Multi-scalar investigations thus reveal the potential complex nature of political networks.

Miller, D. Shane (University of Arizona)

[155] Rivers, Rocks and Eco-Tones: Modeling Clovis

Landscape-Use in the Southeastern United States
Using data from the Paleoindian Database of the Americas (PIDBA), I use an approach derived from complex systems theory to examine the distribution of Clovis bifaces in the southeastern United States. In particular, I find counties with the highest density of bifaces are near the intersection of major rivers, physiographic boundaries and lithic raw material sources. These represent static, highly accessible locations which are consistent with areas used by ethnographic hunter-gatherers for aggregation loci in boreal and temperate contexts. Finally, I discuss ways in which simple decisions by hunter-gatherers can lead to complex, non-linear spatial patterns in the archaeological record.

Miller, D. Shane [155] see Anderson, Derek T. [216] see Yerka, Stephen J.

Miller, Heather (University of Toronto)

[198] Surplus in the Indus Civilization: Cultural Economies and Political Traditions

The Indus offers potentially intriguing answers to questions about the role of surplus in social and political structure, given its long-term status as the "state that doesn't fit the models". Following Fred Asher's suggestion that I consider "political traditions and cultural economies" instead of the usual pairing of these terms, I discuss how agricultural surplus and trade/craft surplus might have been employed in Indus society and politics, and what archaeological data might be helpful. The difference between wealth and value, the role of choice and social networks, the nature of surplus are all part of this discussion.

Miller, Jennifer (University of Alberta)

[109] Symbolic Material Culture from Mlambalasi

Tanzania is rich with Stone Age archaeological data on modern human origins. Most of this data is based on sites in the north of the country. This poster presents data from Mlambalasi, a rockshelter in the Iringa highlands of southern Tanzania. The most recent field season yielded historic, Iron Age and Later Stone Age occupations. Among the thousands of recovered artifacts there are over one hundred ornamental beads, many made from ostrich eggshell. These ostrich eggshell beads are similar to those found at other African Stone

Age sites. This is a preliminary analysis of this symbolic material culture from Mlambalasi.

Miller, Jessica [178] see Stevenson, Alexander E.

Miller, Katherine (Arizona State University)

[56] Burials, Bones, and Behavior: Tombs from Ancient Copán, Honduras

Bioarchaeological approaches have contributed unique data to the understanding of social, political, and economic components of ancient Maya society. The details of several recent monumental tombs from Copán's center and periphery will be presented within the context of the larger sociopolitical structure. Individuals interred within these tombs have distinctive histories that can be understood through grave furniture, skeletal analysis, and strontium isotope analysis.

[128] see Maca, Allan L

Miller, Myles [207] see Ferguson, Jeffrey R.

Miller, Naomi (Univ of Pennsylvania Museum-ISAW)

[45] Discussant

Miller, Randy [194] see Beasley, Melanie M.

Mills, Barbara [264] see Huntley, Deborah L. [226] see Cerezo-Roman, Jessica I.

Mills, Peter (University of Hawaii Hilo), Patrick Kirch (U.C. Berkeley), Jennifer Kahn (Bishop Museum), John Sinton (UH Manoa) and Julie Field (Ohio State University)

[261] Sourcing of archaeological basalts and volcanic glass from leeward Kohala, Hawai'i Island.

One-hundred and one basalt and volcanic glass artifacts from leeward Kohala were analyzed with EDXRF. Basalts cluster in several groups. One group matches well with the Mauna Kea adze quarry in the Hamakua district. Other groups do not match well with geochemically characterized quarries. Volcanic glass artifacts match well with a source at Pu'u Wa'awa'a in the Kona district, and a second group matches with another unknown source. These findings demonstrate a complex range of raw material procurement in leeward Kohala which involved at least some consumption of lithics derived from other districts.

Mills, Peter [261] see McCoy, Mark D.

Minger, Whitney (East Carolina University)

[89] Conserving Skeletal Material from Ossuaries in Eroding Shorelines, Currituck County, North Carolina

In North Carolina, the majority of exposed human remains are from ossuaries reported along the shorelines of Currituck County. The shorelines of Currituck Sound are subject to various site formation processes leading to the discovery of prehistoric artifacts and skeletal material. The difficulties associated with shoreline erosion will be examined while improving the methodology of these emergency excavations. The "salvage" aspect of these excavations, the rapid deterioration of skeletal material in an exposed environment, and remaining culturally sensitive in a region without federally recognized Native Americans are just a few of the issues that will be addressed.

Mink, Philip (Kentucky Archaeological Survey), Carl Shields (Kentucky Transportation Cabinet), Ted Grossardt (University of Kentucky, Kentucky Transportation Center) and John Ripy (University of Kentucky, Kentucky Transportation Center)

[64] *A New Method for Developing Statewide Archaeological Site Location Models: GIS-Based Fuzzy Set Estimation*

Analytic predictive archaeological models can have great utility for state and federal land management agencies. It is difficult to model the likelihood of prehistoric archaeological sites using geographical proxy predictor variables due to the complexity of prehistoric settlement choices. In many cases classic statistical models require too much data to be useful and rely on linear relationships that may not exist. This paper reports on a preliminary predictive model for portion of a Kentucky that combines GIS analysis and fuzzy logic modeling to capture expert archaeological knowledge and to convert it into a predictive surface.

Mink, Philip [199] *see Sullivan, Alan P.*

Minnis, Paul (University of Oklahoma)

[199] *Exploring the Political Context of Ancient Agriculture in the U.S. Southwest/Northern Mexico*

While ethnographic descriptions of indigenous farming have been exceptionally useful for understanding the area's prehispanic past, this record is not adequate for modeling the socio-political context of agriculture. Understanding this context is as analytically important as understanding environmental factors. The political setting provides a framework for agricultural decision-making, including the types of crops grown and farming intensity, among other considerations.

[223] *see Homburg, Jeffrey A.* **[53]** *see Hegmon, Michelle*

Miriello, Domenico [92] *see Crisci, Gino M.*

Miss, Christian [231] *see Kopperl, Robert*

Mitchell, Mark (Paleocultural Research Group) and Leigh Ann Hunt (Grand Mesa, Uncompahgre, and Gunnison National Forests)

[57] *A High-Altitude Lithic Workshop in Colorado's San Juan Mountains*

The Uncompahgre Cirque site is a remarkably dense scatter of stone tools and flaking debris located at 3840 m adjacent to a productive source of high-quality chert. Analyses of excavated and surface-collected artifacts indicate that the site's occupants were producing multidirectional cores and late-stage bifaces, as well as smaller preforms or finished tools. A distinctive feature of the workshop is the presence of numerous artifacts—cores, tools, and debitage—made from exotic materials, including obsidian, high-quality orthoquartzites, and cherts from distant sources. Stratigraphic and other data suggest that the principal occupation of the site dates to the middle Holocene.

Mitchell, Seth (Caprock Environmental Services)

[209] *New Insights Into the Johnston Phase: Ceramic Attributes of the Johnston Site Assemblage*
Archaeological investigations conducted in the early

1950s at the Johnston site located in Indiana County, Pennsylvania have established the site as the type site for the Johnston Phase of the Monongahela tradition. This Middle Monongahela phase encompasses sites geographically situated at the northern margin of southwestern Pennsylvania and characterized in part by the presence of Monongahela shell-tempered ceramics mixed with McFate Incised pottery. New investigations at the Johnston site by Indiana University of Pennsylvania archaeologists have provided additional ceramic data and an opportunity to examine important typological and functional questions concerning Monongahela people's manufacture and use of ceramics.

[7] *see Neusius, Phillip D.*

Mixter, David (Washington University in St. Louis) and Angela Keller (University of Texas at Arlington)

[9] *Activity Under a Microscope: Microartifact Analysis of Two Elite Complexes at Actuncan, Belize*

Despite decades of investigation, we know shockingly little about how elite Maya people used their stone-built architecture. Archaeologists presume that elite spaces supported both public and private activities; however we rarely find direct artifactual evidence of those activities. In part, this is due to the fastidiousness with which Maya peoples cleaned their built spaces. Nevertheless, we propose that very small items may remain in situ. Conventional archaeological collection procedures discard this material. This paper reports on our use of bulk soil sampling to capture microartifactual indices of activity associated with two elite complexes at the site of Actuncan, Belize.

Modzelewski, Darren (UC Berkeley) [1] *First Moderator*
[1] *First Chair*

Moe, Jeanne (Project Archaeology-BLM)

[113] *Archaeology and Conceptual Understanding of Science Inquiry*

Archaeology educators have long believed that archaeology provides a good vehicle for teaching science inquiry. This project examined the efficacy of archaeology instruction for teaching fifth grade students the elements of science inquiry including observation, inference, classification, the use of evidence, and the role of context in the interpretation of the archaeological record. Results show that students achieved basic understanding of both archaeological and science inquiry. Misunderstandings and misconceptions provided significant insights into student learning processes and point to instructional interventions to improve conceptual understanding of science inquiry. Using these results, archaeology educators can design more effective learning materials.

[268] *Discussant*

Moe, Jeanne [113] *see King, Robert E.* **[113]** *see Fisher, Jack* **[113]** *see Alegria, Crystal B.*

Moirano, Jorge [101] *see Barrientos, Gustavo*

Monaghan, G. William [82] *see Baumann, Timothy E.*

Monaghan, George (Glenn Black Laboratory of

Archaeology, Indiana U), Michael Kolb (Strata Morph Geoexploration, Inc.) and Daniel R. Hayes (Hayes & Monaghan Geoarchaeologists, LLC)

[80] *Side Valley Fans and Archaeological Site Taphonomy in the Upper Mississippi Valley*

A research project, funded by the US Army Corp of Engineers, investigated late Wisconsinan and Holocene depositional processes along the margin of the upper Mississippi Valley. The goal of this research was to understand the timing of fan development and how these deposits integrate with alluvial and fluvial landform of the Mississippi channel to better identify the taphonomy of archaeological sites buried along the valley margins. Small and large side-valley alluvial and colluvial fans were identified between La Crosse and Prairie du Chein, Wisconsin, and sampled using coring techniques. The results reveal a simpler depositional system than previously recognized.

Monaghan, John (University of Illinois at Chicago)

[24] *"We have, señor Viceroy, a most beautiful church:" The Creation of a Balkanized Political Landscape in Central Mexico*

Observers have long lamented the fractured political terrain of rural central Mexico. Oaxaca, for example, has about 4% of the country's population but almost 25% of its municipalities. Yet the fissioning that occurred in the nineteenth and twentieth centuries was predated by a construction boom. Churches, parish houses, cemeteries, and, later on, schools and communal buildings appeared where none existed before. These efforts were often understood by outsiders as expressions of faith or a desire for progress. What this paper suggests that insiders viewed the construction, and occasional destruction, of these buildings as contentious social and political claims.

Monchot, Hervé [159] *see Gendron, Daniel*

Mondragon, Lourdes and Patricia Fournier (Escuela Nacional De Antropología e Historia)

[21] *Arqueología e Historia de Tepetitlán: Asentamiento Otomí del Valle del Mezquital*

Nuestro objetivo es aproximarnos a la historia de Tepetitlán, Hidalgo, parte del Valle del Mezquital, durante el siglo XVI para comprender la interacción sociocultural entre dos grupos contrastantes: los indígenas hñāhñū (otomíes) y los españoles, con base en la etnohistoria y la arqueología. Nos centramos en la geografía del sitio, el significado de su nombre, los antecedentes prehispánicos de la población otomí, así como la etapa de conquista y colonia. Adicionalmente, hacemos referencia a los sistemas religiosos que predominaron en Tepetitlán, incluidos el culto en cimas al igual que la construcción conventual del siglo XVI.

Monnier, Gilliane (University of Minnesota)

[218] *Are we free from old paradigms? Implications of the new chronology on our understanding of culture change throughout the Lower/Middle Paleolithic*

The paradigms and research traditions which guided the development of Paleolithic systematics have shaped our current research questions and approaches. In particular, the notion of continual technological progress emphasized the orderly, unilineal evolution of tools towards perfection. This impacted early 20th c.

archaeologists whose excavations revealed diachronic variability which had to be accounted for within a framework based upon progress and unidirectional evolution. Today, we are finally developing an absolute chronology for this time period. This paper explores the impact of this new chronology on our traditional notions of technological progress throughout the Lower and Middle Paleolithic.

Monroe, Cara (UCSB Anthropology and Washington State University), Fernando Villanea (School of Biological Sciences, Washington State University), Alan Leventhal (San Jose State University, College of Social Science), Rosemary Cambra (Tribal Chair, The Muwekma Ohlone Tribe) and Brian M. Kemp (School of Biological Sciences, Washington State University, Washington State University)

[194] *Ancient human DNA analysis from CA-SCL-38 Burials: Correlating biological relationships and mortuary behavior.*

Archaeological, ethnographic, and linguistic evidence about populations from the Central Coast and San Francisco Bay area of California suggest a complex culture history of dynamic regional interaction and migration, as well as a degree of social stratification. In particular, research at the cemetery site of CA-SCL-38 suggests that burials and grave goods were spatially structured according to not just age and sex, but status as well. In collaboration with the Muwekma Ohlone Tribe, we have extracted and analyzed DNA from approximately 70 burials in order to correlate the biological relationships of individuals and family units to mortuary patterns.

Monroe, J. Cameron [177] *see Janzen, Anneke*

Monroe, Shayla (Howard University) and Alex Brueggeman (Howard University)

[208] *Gimme the Good Cuts: Exploring Procurement Strategies of Enslaved Individuals in the Mid-Atlantic>>* Based on the writings of Frederick Douglass and others, there is a traditional and commonly held belief that enslaved individuals in the Mid-Atlantic region of the country procured goods from an owner through a centralized system of distribution. However, recent preliminary analyses of the Best Farm Slave Village at L'Hermitage may paint a different picture. A review of archaeological evidence as well as comparisons with other documented plantations suggests the possibility that the enslaved population at this particular site had access to alternative, non-centralized means of procurement and subsistence.

Monroy, Fabiola [193] *see Jaime-Riveron, Olaf*

Monteleone, Kelly (Maxwell Museum, University of New Mexico) and E. James Dixon (Maxwell Museum of Anthropology/ University of New Mexico)

[89] *Exploring the continental shelf of the Alexander Archipelago, Southeast, Alaska*

An underwater archeological survey on the continental shelf west of Prince of Wales Island, Alaska identified several anomalies that may be evidence of early human occupation. Extrapolations from the late-Pleistocene-Holocene sea-level curve developed by Fedje and Josenhans (2000) for the Queen Charlotte Islands and

sea-level reconstruction by Baichtal and Carlson (2010) suggest these anomalies were submerged by ~10,000 C14 years BP (11,560 calendar years BP [intcal09]). The configuration of one anomaly resembles archeological documented stone fish weirs. Others are rectangular and circular shaped depressions possibly of cultural origins. Paleogeographic reconstructions are used to place these features in their ecological contexts.

Montez, Karina (University of Arizona)

[138] *The Apache Wars: Exploring Intertribal Relationships During the Late 1800s*

The Apache Wars of the late 1800s shaped the culture and environment of New Mexico. During this time, the U.S. Army successfully recruited Apache scouts to help search for Victorio, leader of the Warm Springs Apache uprising. The scouts nearly defeated Victorio at the battle of Palomas Creek, documented by the Gila Archaeological project. Using information from historical documents, oral history, and the archaeological record, this poster will examine how the scouts were recruited and fought, why they were willing to help the Army, the relationships between Apache tribes, and the impacts the Palomas Creek Battle has on present-day Apaches.

Moore, Inna [81] see Bailey, Ralph [81] see Agha, Andrew

Moore, Jerry (CSU Dominguez Hills) [125] *Discussant*

Moore, Sara (University of Iowa) and Anna Waterman (University of Iowa)

[234] *Determining biological sex ratios using hand and foot metrics of the Neolithic-Early Bronze Age burial population of Bolores (Torres Vedras, Portugal)*

In collective burials, commingled, fragmentary skeletal remains can hamper researchers' abilities to accurately determine the biological sex of individuals. In such cases, small and taphonomically resistant bones may offer a viable alternative to biological sex determination based upon the morphological characteristics of the pelvis and skull. With the goal of tabulating the male to female ratio in this burial population, the data presented here outline the results of a metric analysis of carpals, metacarpals, tarsals, and metatarsals from the late prehistoric collective burials of Bolores (Torres Vedras, Portugal). Successes and limitations are discussed.

Moore, Summer

[207] *White Mountain Redware at the Pettit Site, An Aggregation-Period Pueblo in the Zuni District*

During the Aggregation period in the Zuni district, which occurred during the late twelfth and early thirteenth centuries, population aggregation became intensive and widespread. People from smaller communities moved together to form larger settlements, a situation that likely resulted in the creation and negotiation of complex social situations. The Pettit Site is a 150-room Aggregation-period pueblo in the Zuni region of west-central New Mexico. This poster presents an analysis of White Mountain Redware from the Pettit site. The analysis seeks to better understand the role of White Mountain Redware production and use within the context of community integration.

Morales, Reinaldo (University of Central Arkansas)

[60] *No Other: Speleothem Rock Art in Cuba and Yucatán*

The intersection of culture and nature, "a worlding like no other" (Risatti 2007:202), is embodied in Circum-Caribbean speleothem rock art. Typically, these feature face-like forms, having the visual effect of transforming the cave from mere passive support into an integral part of the imagery. This allows for a mode of communication beyond a simple signifier-signified relationship, that of a face-to-face human encounter. The "nature" part of the work (the cave) both activates and is activated by the "culture" part (the resulting image)—communication with a uniquely human affect. Cave art from Cuba and Yucatán will illustrate this phenomenon.

Morales López, Abel [67] see Folan, William J.

Mora-Marin, David (University of North Carolina)

[145] *A Historical Sociolinguistic Study of Two Morphological Markers in Classic Lowland Mayan Inscriptions*

This paper applies a historical sociolinguistic approach to the study of the Maya lowlands during the Late Classic period (AD 600-900), with the aid of the Maya Hieroglyphic Database compiled by Martha Macri and her colleagues. Two morphological markers (*-wan, *(V)lel) are traced in "real time" as they spread both geographically and lexically, and quantitative methods are used to assess the validity of two major models for geographic spread of innovations, and the sociocultural parameters that may have promoted such spread.

Moran, Kimberlee (Forensic Outreach) and Richard Gould

[76] *Why We Do This*

Every mass-fatality disaster tests our ability to connect good forensic science with the humanitarian concerns surrounding the survivors and victims' families. An example from the aftermath of the "the Station" Nightclub Fire in West Warwick, RI, in 2003 points to the necessary but sometimes counterintuitive outcomes of these activities. An incident during the victim identification process and some of the results of the post-disaster archaeological recovery will be examined to draw conclusions from the outcomes and clarify our role as "second responders" when such events occur.

[76] *First Chair*

Morata, Diego [267] see Salazar, Diego

Moratto, Michael (Applied EarthWorks, Inc.) [57] *Discussant*

Morehart, Christopher (Northwestern University)

[198] *The Materiality of Excess: Investment, Productivity, and Waste in the Formation of Landscape*

Social scientists define surplus as production in excess of a physiologically defined threshold. Methodologically, this model is advantageous and simplifies analysis. Yet this approach often (1) renders social minimums as secondary to biological minimums and (2) ignores how the materiality of excess constitutes the archaeological record itself. This paper explores these two related dimensions of surplus by tracing the trajectory of a chinampa system in the northern Basin of Mexico. At different times through its history, people created,

expanded, maintained, abandoned, and inherited this landscape. Its formation demonstrates the intended, the unintended, and the inevitable consequences of surplus.
[198] *First Chair*

Morehouse, Jana (University of New Mexico)

[153] *Hydrology, GIS, and LiDAR: A Waiapuka Case Study*

The Waiapuka ahupua'a, in Northern Kohala on the Island of Hawaii, is home to approximately 500 prehistoric archaeological agricultural features and complexes. Rich flora and physiographic characteristics have made the area difficult to map with traditional methods. This project is the first to incorporate LiDAR data and GIS mapping to the known archaeological features and hydrology of the landscape. The mapping demonstrated that Hawaiians were using the natural water flow to pull water from the gulches onto the tablelands, into a catchment system, and even further downstream, which has not been previously documented in Kohala.

Morell-Hart, Shanti (U.C. Berkeley)

[111] *Paleoethnobotanical Analysis, Post-processing*
Recent approaches to paleoethnobotanical interpretation consider sets of questions from a multitude of standpoints, some labeled "postprocessual". Answering the questions generated from such perspectives entails operationalizing concomitant methodologies, the review of which is the primary focus of this paper. A secondary focus is the incorporation of linguistic- and practice-based approaches in the macro- and micro-botanical analysis of artifacts and places, and in the interpretation of taxa assemblages. A case study from the Ulua Valley, Honduras, is used to briefly illustrate one route to implementing these approaches.

[45] *First Chair* [62] *see Barden, Allison J.*

Morello, Flavia [231] *see Martin, Fabiana M.*

Morgan, Brooke (Southern Methodist University) and Metin Eren (Southern Methodist University)

[7] *Comparing the efficiency of bipolar reduction versus freehand knapping on small pebble cores: an experiment*
Bipolar reduction of pebbles has been characterized as the most efficient way to reduce these cores. However, quantifying efficiency of bipolar versus freehand reduction of pebbles is required. Is bipolar reduction the most efficient technique for utilizing bits of flint? Using experimental replication, this question was explored by comparing the products of bipolar reduction and freehand knapping on small chalk flint pebbles. Analysis of standard efficiency measures (e.g. amount of cutting edge, core consumption, number of blanks produced) between bipolar and freehand knapping suggests efficiency may not have been the rationale for bipolar reduction.

Morgan, Chris (Utah State University)

[57] *High Altitude Residential Occupations in Wyoming's Wind River Range*

Recent excavations at the High Rise Village site, elevation 10,700 ft, indicate intensive processing was critical to sustaining a settlement comprised of at least 51 wickiup pads. Chronological data indicate lodge construction and use temporally corresponding to very

late prehistoric high-altitude residential occupations in the Great Basin, but also substantial occupation prior to 700 BP. Though data are preliminary and work at the site is ongoing, the site appears to represent an early case of high-altitude intensification calling into question the roles forcing mechanisms like climate change and population pressure play in the development of high-altitude residential strategies.

[57] *Second Chair* [57] *Second Organizer* [57] *see Cannon, Kenneth P.*

Morgan, Michele E. [203] *see LeBlanc, Steven A.*

Moriarty, Ellen (Boston University) and Antonia Foias (Williams College)

[85] *Ceramic Petrography and Political Dynamics in the Central Petén Lakes Region, Guatemala*

Within archaeology, the technique of ceramic petrography has most commonly been used to identify mineral inclusions and to suggest potential source deposits for these materials. In this paper, we present the results of a petrographic study designed to reach beyond sourcing and investigate political economy within the Late Classic Motul de San José polity in the Central Petén Lakes area of Guatemala. This study draws on utilitarian and elite pottery from several sites, and defines various paste "recipes." The distribution of these paste recipes throughout the area suggests some degree of centralization in the ceramic economy of the Motul polity.

Morin, Eugene (Trent University)

[17] *Revisiting the Body Size Rule*

The use of prey size as a measure of net return rates is controversial in archaeology, as this proxy does not always predict resource rank accurately. Among others, variations in prey mobility can undermine this proxy. In this paper, the relationship between velocity and prey size is investigated. The results suggest that species fall on two different curves when top speed is plotted against body size. Using ethnographic data, it is shown that the strength of this rule correlates with environmental variables. Bergmann's rule, an ecogeographic generalization that examines latitudinal change in animal size, seems to mediate this pattern.

Morin, Jesse (University of British Columbia)

[160] *Nephrite/Jade: The Preeminent Celt Stone of the Pacific Northwest*

Nephrite/jade was a toolstone that was widely used in the Pacific Northwest for making ground stone celts. It is a semiprecious gemstone renowned for its aesthetic characteristics, and is also the toughest known rock. These dual attributes of extreme toughness and beauty made nephrite a highly desirable material for manufacturing celts, and these celts were widely exchanged across the Pacific Northwest. This paper describes the spatial distribution of nephrite source locations in British Columbia, Washington, and Oregon, and describes the locations where indigenous nephrite working occurred based on the distribution of the sawn nephrite cores from which celts were produced.

Morris, Annelise (University of California, Berkeley)

[250] *Discussant*

Morris, John [190] *see Kindon, Andrew W.*

Morris, Stacy [91] *see Brunelle, Andrea*

Morrison, Alex (University of Hawaii, Manoa), Chris Lee (California State University, Long Beach), Carl Lipo (California State University, Long Beach) and Terry Hunt (University of Hawaii, Manoa)

[153] *[Multi-stage Remote Sensing Applications for Mapping Archaeological Features and Landscape Characteristics: A Case Study from Rapa Nui, Chile]*
In the last 25 years aerial remote sensing technology has revolutionized archaeological survey techniques by allowing for an assessment of feature density and location before field work begins. In this presentation, a number of different remote sensing techniques are discussed in reference to archaeological prospection on the island of Rapa Nui, Chile. A variety of spatial and spectral sensors characteristics are examined. Potential topics include remote sensing and mapping of archaeological features, digital elevation model (DEM) development and mapping of soil characteristics, as well as low altitude aerial photography from uninhabited aerial vehicles (UAV), kites, blimps, and poles.

Morrison, Bethany (Western Connecticut State University) [79] *First Chair*

Morrow, Juliet (Arkansas Archeological Survey) [120] *[Clovis-era Lithic Technology in the Midcontinent]*
Available evidence suggests that Clovis is the basal cultural adaptation from which all other cultural systems develop in the midcontinent. Using empirical evidence, this paper explores the geographical, chronological and technological relationships among Clovis and other Clovis-era fluted point making cultures in the midcontinent. A model of the evolution of technology through the Clovis era is presented and how the technologies reflect other aspects of the cultural system are discussed.

[22] *see Marshall, David A.* **[87]** *see Riggs, John*

Morton, Shawn (University of Calgary) and Christopher Andres (University of Indiana/Purdue University)

[266] *Tipan Chen Uitz: The Development of an Ancient Centre as Attested in Subterranean Site Contexts*
2010 marked the first season of field research by the Caves Branch Archaeological Survey at the monumental Maya civic-ceremonial centre of Tipan Chen Uitz, Cayo District, Belize. Concurrent with architectural excavations directed toward revealing the construction history of the site, investigations were carried out in a number of subterranean site contexts (caves, rock shelters, sink holes) within the site core and its immediate periphery. While preliminary, these efforts are beginning to reveal a picture of ancient Maya 'urban' cave use strongly tied to local, as well as broader regional, patterns of socio-political interaction and ritual behaviour.

Morton, Shawn [9] *see Andres, Christopher R.*

Moser, Coral [262] *see Santarone, Paul*

Moses, Sharon (Coastal Carolina University)

[164] *Sacred South & the Houses of Neolithic Catalhoyuk, Turkey: Directionality and Ritual Movement*

in Constructed Spaces - A Native American Perspective
Evidence suggests the south side was the traditional placement for rooftop entrances in Çatalhöyük's houses over centuries. The south area has also been characterized as the dirty area because of high traffic; by implication a lower status space. Based upon ethno-archaeological models and personal experience with Native American sacred structures, I argue that the south area of Çatalhöyük's houses was likely a cosmologically charged space. This interpretation differs from previous approaches to Çatalhöyük's household spaces in that it connects all the spaces of the house around a unified model of cosmological understanding.

Moss, Madonna (University of Oregon)

[263] *[4000 Years of Tlingit Salmon Use at Coffman Cove, Alaska, and the Question of Resource Depression]*
Many historical ecological studies focus on cycles of resource depression and rebound. At most Northwest Coast archaeological sites, however, evidence for resource depression is lacking (Butler and Campbell 2004). At Coffman Cove, salmon were used over a long period, but detecting resource depression requires identification of one or more of six salmon species, each with its own natural cycle of abundance. Radiography and size are used to assess the species composition of the salmon caught by Coffman Cove residents. These results are evaluated in light of species-specific knowledge of fluctuating abundance to determine whether or not resource depression occurred.

Mountjoy, Joseph (Universidad de Guadalajara, México)

[41] *Iron Pyrite Ornament Symbolism in the West Mexican Middle Formative*
Excavations 2001-2005 in three Middle Formative cemeteries in the Mascota valley of Jalisco, Mexico dated in the range of 1000 to 700 B.C. yielded 49 iron pyrite ornaments, among the oldest found in Mesoamerica. Many of these objects are of sunburst design and appear to have been worn on the chest as solar reflectors. As such, they played a symbolic role in early agricultural societies that were ritually focused on three interrelated factors for survival: sun, water and fertility, factors also symbolized in ornaments of emerald green jadeite and transparent quartz.

Moyes, Holley (University of California, Merced) and Jaime J. Awe (Institute of Archaeology, Belize)

[266] *The oldest ritual caves in the Maya Lowlands*
Cave archaeologists note that early settlement not visible at surface sites may be inferred from cave deposits. Early Preclassic AMS dates from Chechem Ha Cave in the Macal Valley, Belize are coeval with some of the earliest Maya surface sites located in the adjacent Belize Valley. Because there is little evidence for Early Preclassic settlement around Chechem Ha, it has been assumed that the site functioned as a pilgrimage place. However, recent dating of two nearby caves suggests that early cave use was more widespread than previously imagined. This invites us to reconsider the antiquity of the area's settlement.

Muir, Arthur (Hierakonpolis Expedition)

[12] *Analysis of Predynastic Ostrich Eggshells from Hierakonpolis*

Hierakonpolis, a major Predynastic (3800-3200 BC) site in Upper Egypt, has yielded extraordinary artifacts for more than a century. Recently thousands of broken ostrich eggshell fragments were found at HK6, the elite cemetery. The minimum number of whole eggs present at any location was determined by measuring the fragment area and dividing by a whole reference egg area. A total minimum of 22 were found, more at any other Egyptian site of the period. An easier, but less accurate, weight method was considered and rejected. Evidence suggests that this is the first use of ostrich eggs as rebirth symbols.

Mulhern, Dawn (Fort Lewis College)

[188] *Biological and cultural interpretations from Falls Creek: Evidence from the human skeletal remains*
Human remains from a Basketmaker II site at the Falls Creek Rock Shelters, north of Durango, Colorado, exhibit a range of preservation, from complete mummification to complete skeletonization. The mummified remains provide glimpses into the culture of the Basketmaker people, particularly aspects of mortuary practices. Biological data regarding the age and sex structure appear to indicate a preference for burying women and children at this site, with more subadults than expected and underrepresentation of adult males. Biological analysis also reveals several cases of similar developmental anomalies that could be indicative of close genetic relationships.

Mullane, Elizabeth (Stanford University)

[43] *Identity as an Emergent Property: An Iron Age India Case Study*

In this paper, I propose that identity may be categorized as an emergent property. Emergence is the development of new behaviors which cannot be predicted within a complex system. Emergent properties may be conceived as patterns in which the whole is not merely the sum of its individual parts. While applications are widely employed in the analysis of ecological and biological systems, I will discuss how emergent properties may provide insight into archaeological questions of the human past. As a case study, I will examine how the emergence of a new Megalithic identity transformed Iron Age India.

Mullen, Kira (Northern Arizona University)

[32] *The Anthropogenic Landscape: Terrace Construction Methods in the Mixteca Alta Region of Oaxaca, Mexico*

Terrace systems in the semi-arid environment of the Mixteca Alta region of Oaxaca, Mexico both prevented erosion and provided food for growing prehispanic populations. An urban center called Cerro Jazmín, located in the Nochixtlán Valley, boasts a multitude of exposed terraces that warranted archaeological and geomorphologic investigation. Lama-bordos are check-dam terraces constructed in mountain drainages to mitigate erosion and trap fertile topsoil for agriculture. Systems of lama-bordo terraces stretch up to 4km downslope and some walls are higher than 4m. My research examines the social organization of labor behind lama-bordos at Cerro Jazmín.

Mullen, Kyle (University of Kentucky)

[96] *A Debitage Analysis at Caesar's Palace*

This paper will present conclusions drawn from my research regarding a metric analysis of debitage at the Caesar's Palace Casino site in southern Indiana. Unmatched in its stratigraphy, the Caesar's Palace Casino site holds great promise for archaeological studies involving long term culture change throughout the Archaic and Woodland periods at the Falls of the Ohio. This in-depth analysis of over 3000 complete flakes, covering the Archaic to Woodland transition period, will compliment previous mass analysis work done on the collection. Through this metric analysis I will draw conclusions regarding the site's changing function, technology and mobility pattern.

Mullins, Daniel (Logan Simpson Design Inc.)

[6] *Obsidian Hydration Dating and Geochemical Obsidian Sourcing of Paleo-archaic Artifacts from the Milford Flat project, Western Utah*

Numerous fluted and stemmed projectile points were recently recovered during the Milford Flat inventory, located in western Utah. Currently, the temporal range of fluted and stemmed points is not well-defined in the Great Basin. We therefore use obsidian hydration dating to establish relative dates for twelve of the points. The artifacts were also sourced using X-ray fluorescence. The majority of artifacts originated at the Black Rock and Wildhorse Canyon obsidian sources, both located near the project. One point also traced to sources near Malad, Idaho. The temporal associations between the study points, obsidian use, and procurement ranges are presented.

Muncaster, Lara [264] *see Huntley, Deborah L.*

**Munoz, Cynthia (University of Texas at San Antonio),
Patricio Villanueva (University of Texas at San Antonio) and Raymond Mauldin (University of Texas at San Antonio)**

[177] *Exploring Diagenetic Alterations in Stable Isotopic Signatures in Bone Collagen*

Archaeological research increasingly relies on stable carbon and nitrogen isotopes in bone, with potentially problematic collagen samples identified through %C, %N, collagen yields, and the atomic C:N ratio. The C:N ratio is the most commonly used identification tool, with diagenetically altered or contaminated samples falling outside of the 2.9 to 3.6 C:N range. Using bone from a modern bison, we conducted controlled experiments focused on degrading collagen, including exposure to heat (90o C) and moisture variation for over 1000 hours. Based on more than 100 replicate isotopic analyses, we suggest refinements in diagenetic identification tools, including the C:N ratio.

Munoz, Samuel [72] *see Peros, Matthew C.*

Muñoz, Melissa [31] *see Kittel, Michelle*

Munro, Natalie D. [126] *see Stiner, Mary C.*

Munro-Stasiuk, Mandy [85] *see Stockton, Trent*

Munson, Cheryl Ann [35] *see Alonzi, Elise E.*

Munson, Jessica (University of Arizona)

[225] *Preclassic temple architecture at Anonal*

Beginning in the Preclassic period, the construction of monumental buildings contributed to the development of a newly stratified political landscape in the southern Maya lowlands. Temples and monuments dominated the architectural core of major Maya centers, but were also built in peripheral areas. Evidence from the small ritual center of Anonal indicates that this tradition of monumental building began as early as the fifth-century B.C. Long-term use of Anonal's temple complex suggests that this site was an important locus of commemoration activity in the greater Ceibal landscape.

[145] *Discussant*

Munson, Marit (Trent University)

[260] *The Problem With Pictures: Identifying Images in Southwestern Archaeology*

Humans are probably hard-wired to seek patterns that can be recognized as pictures, a process so fundamental that it seems simple. When archaeologists assume that recognizing images is a matter of common sense, they end up with inconsistent and often improbable identifications. This paper addresses the problems of identifying ancient pictures, drawing on research from psychology that provides insight into the processes of representation and interpretation. Using examples from Southwest rock art, kiva murals, and ceramics, I argue that archaeologists need to consider the process of representation in order to make more explicit and less value-laden identifications of images.

Murakami, Tatsuya (University of South Florida)

[92] *Lime plaster production and the politics of urban construction at Teotihuacan, Mexico*

This paper addresses the degree to which the state controlled lime plaster production in the construction of urban buildings at Teotihuacan through the analysis of technological variability, focusing on the recipe and quality of lime plasters. Social relations are often encoded in subtle technical choices and therefore the analysis of technological variability provides a basis for assessing the relationship between multiple production groups. The results of petrographic and cathodoluminescence analyses suggest that both the recipe and quality were centrally controlled by the state and that this centralized production underwent a significant change by the last phase of the Teotihuacan period.

[92] *Second Chair* [92] *see Hodgins, Greg W L*

Murata, Satoru (Boston University), Jim Aimers (State University of New York, Geneseo) and Patricia McAnany (University of North Carolina, Chapel Hill)

[190] *Pots and Salt at Wits Cah Ak'al: a multicrafting landscape amidst the mangroves in the eastern Maya Lowlands*

Wits Cah Ak'al (WCA), a recently excavated Maya site in Belize, contains evidence of specialized salt and pottery production. AMS dates and ceramic chronology both point to a Late Preclassic origin with evidence for salt production confined to the Late Classic period. Surprisingly devoid of habitational debris, the site apparently was formed by recursive deposition of production-related debris. The absence of kiln fragments supports the notion that open-air firing was the primary firing technology. As one of the few non-residential sites

amidst mangrove swamps, WCA contains intriguing evidence regarding the tempo of mound formation and the practice of pottery.

Murdock, Jana (Elon University)

[148] *The Role of Environmental Degradation in Collapse as Studied Through the Ancient Maya in the Eastern Petén Forest of Northwestern Belize*

Much recent research addresses the notions of environmental degradation and the depopulation of the central Maya lowlands in the Terminal Classic. An analysis of soil samples and stratigraphy from 10 test pits at the household site of Grupo Agua Lluvia in the eastern Petén forest will help to determine how soil composition changed between pre-Maya occupation, Maya occupation, and post-Maya occupation, as indicated visually by differences in soil color, texture, and composition. The results of this research endeavor to establish the chronology for and extent of environmental impact by ancient Maya culture in the eastern Petén.

Murley, Daniel (Sonoma County Heritage Network) and Sandra Hollimon (Santa Rosa Junior College)

[48] *The Archaeology of Native Californian Gender Systems*

We discuss recent developments in the archaeology of gender and examples of applications in California archaeology. These include examinations of sexuality, the multiple axes of identity that include gender and other variables, and systems of gender that are non-binary. We will also discuss analytical approaches that have grown from gender archaeology, such as the examination of the lifecourse in the archaeological record, identity formation, and osteobiography.

Muros, Vanessa (UCLA/Getty Conservation Program)

[193] *Discussant* [193] *Third Organizer* [193] *Second Chair*

Murphy, Elizabeth [163] *see Pecoraro, Luke J.*

Murphy, Joanne (University of North Carolina Greensboro)

[258] *Repeat, repeat, repeat? Rituals in the tombs around the Mycenaean palace at Pylos, Greece.*

The tombs around the Greek Bronze Age palace at Pylos (1600- 1100 B.C) consist of chamber tombs that are hollowed out of the rock and tholos tombs that are built. Frequently these tombs are perceived to have similar rituals and related social functions. By mapping the artifacts found in the tombs, in the entrance to the tombs and outside of them, I examine the evidence for repeated action in and around the tombs. I then explore the socio-economic significance of these actions by presenting models of how they can be interpreted and related to the changes at the palace.

[258] *First Chair*

Murphy, John

[135] *Using a supercomputer to explore an archaeological complex system: The (new) Hohokam Water Management Simulation*

Previous work developed a theoretical and software framework for exploring how complex systems dynamics (i.e. resilience, robustness, self-organization) shaped the operation of the Hohokam irrigation system. A new

project re-implements this for use on the Blue Gene/P supercomputer at Argonne National Laboratory. The new platform expands the initial explorations in two ways: far greater numbers of possible system variations and alternative historical trajectories can be explored, and a far larger number of components of the system can be modeled. The latter allows exploration of common dynamics at prehistoric and modern scales. Preliminary results of this two-year project are presented.

Murphy, Larry (Submerged Cultural Resource Consultants)

[76] *Forensic Archaeology in Submerged Contexts*

Criminal and civil archaeological violations and other situations requiring forensic analysis of archaeological sites and artifacts can and do occur in submerged contexts. There are a number of case examples of this type of forensic archaeology. It is also likely that forensic archaeology in submerged contexts will be necessary as a result of archaeological damage from the recent oil spill in the Gulf of Mexico. This type of situation occurs frequently enough to require the recent development and presentation of specialized training on both submerged cultural resources law enforcement and submerged cultural resources damage assessment.

Musser-Lopez, Ruth (RiverAHA (Archaeological Heritage Associates))

[158] *Understanding Prehistoric Commerce, Technology and the Chronological Position of the Portable Milling Tool Production and Stone Sculpture on the Lower Colorado River via the Functional Context of Associated Rock Art.*

Formed portable metates associated with corn meal preparation are found in sites along the Lower Colorado River. Milling tool production sites are spatially associated with petroglyphs, creating the potential for cross-dating the metates and associated petroglyphs. Stylistic differences and changes through time and the functional context of rock art in physical association of prehistoric milling tool production along trails linking production sites with coastal California, reveal a lively Lower Colorado River prehistoric rock sculpting tradition. This tradition continued into the historic period, evidenced by oral history as well as standing structures attributed to the last known Mojave sculptor.

Mutin, Benjamin (Harvard University)

[140] *Cultural Dynamics in Southern Middle-Asia during Protohistory (6th – 3rd millennium BC): an overview based on recent researches on ceramic traditions*

This paper presents results from recent researches conducted upon ceramic productions from southeastern Iran and Pakistan. While it has been assumed that several dynamics and developments observed in Middle-Asia during Protohistory resulted from influences from Mesopotamia and western Iran, it is now admitted that the situation was likely more contrasted. The results are embedded here in the broader context of southern Middle-Asia. It is suggested that the local and interregional processes are probably a key to understand the developments towards (and the sustainability and probably the collapse of the) greater complexity that characterized Middle-Asia in the 4th and 3rd mill.

Nado, Kristin [233] see Johnson, Kent M.

Nagaoka, Lisa (University of North Texas)

[126] *The challenges with communicating*

paleozoological data: Lessons from the overkill debate
As a fledgling subdiscipline, one of the challenges facing applied paleozoology is effectively communicating the meaning and value of zooarchaeological data for use in conservation decisions. Our target audience may have their own agendas and preconceived notions that affect if and how the data are used. An excellent example of this challenge can be seen in how conservation biologists use information about the Late Pleistocene extinctions. In this paper, I review how the Pleistocene extinctions literature is cited by biologists to better understand some of the issues applied paleozoology faces in communicating with conservationists.

Nahmias, Susan Shaffer [83] see Stokes, Robert J.

Najat, Bhiry [25] see Steelandt, Stéphanie S.

Najjar, Jorge (Universidade Federal Fluminense)

[268] *Discussant*

Najjar, Rosana (IPHAN / Rio de Janeiro - Brazil)

[247] *The City as Artifact: digging at the Historic Center of Salvador, Brazil*

This presentation considers the results of a historical archaeology project developed at Salvador, the first capital of Brazil (XVIth century). The historic center is preserved by the Brazilian government and is designated as a UNESCO World Heritage. The research aimed to produce relevant data about the 63 historic buildings, concerning their insertion into the urban landscape. The theoretical and methodological approaches have included the combination of different sources as historical documents, oral narratives and a vast collection of artifacts (over 400,000 pieces). The research results also contribute to the restoration project undergone at the Historic Center of Salvador.

Nakase, Dana [223] see Kruse-Peebles, Melissa R.

Napolitano, Matthew (American Museum of Natural History, U. West Florid)

[89] *Rethinking the Coast: considering small islands in aboriginal economies of the Georgia coast*

Until very recently, small islands were overlooked in the anthropological literature as marginal areas for subsistence and settlement. However, closer analysis suggests that small islands played an important role in aboriginal economies, specifically on the Georgia coast (US). Systematic testing of a back-barrier island between Colonel's Island and St. Catherines Island, Georgia revealed over 4,500 years of aboriginal activity. This paper presents results from that survey as well as AMS and stable isotope analysis data in order to contextualize the role of this island within a larger regional framework.

[89] *First Chair*

Nash, Donna (UNCG)

[227] *Daily Life and Identity in the Wari Realm: The Multi-ethnic community in Moquegua, Peru*

The Wari state expanded during the Andean Middle Horizon (AD600-1000) to control a vast area and many ethnic groups. While people may have been compelled to

participate in the Wari political economy in a number of ways, some aspects of their daily life may have remained unchanged. Using the multi-ethnic colony in Moquegua as an example this paper examines how different households selected to identify with the Wari state, and what aspects of their respective identities were maintained.

[193] *see* Burgchardt, Lucy A.

Nash, Stephen (Denver Museum of Nature & Science)

[18] *No Time Like the Old Time: Tree-Ring Dating, the History of Archaeology, and the Interpretation of Pre-Columbian History at Mesa Verde National Park*

In 1930, eight tree-ring dates were available from Mesa Verde National Park. In 2010, 4438 dates were available from 142 sites. The growth in numbers reflects the Park's visitation, construction and archaeological compliance needs, the long-term research interests of archaeologists, and the remarkable preservation of sites in the Park, at least as much as they reflect anything about the behavior of pre-Columbian inhabitants in the region. A systematic, critical analysis of the number of tree-ring dates available through time provides an empirically derived view into the perils of reading too much into the dendroarchaeological record even in well-dated archaeological contexts.

[215] *Discussant* [99] *Discussant*

Nathan, Rebecca (Indiana University) and Anthony Krus (Glenn A. Black Laboratory of Archaeology)

[115] *Angel Mounds GIS: Visualizing Old Data in New Ways*

Recent research on Angel Mounds (12-VG-1), a Mississippian settlement in southern Indiana, includes a reevaluation of previously collected spatial data from the site as well as the establishment of the Angel Mounds GIS. This paper discusses methodology involved in converting 70 years of hand-collected data into a geographic database at both site-level and feature-levels. The creation of a three-dimensional model of Mound F and a survey of other recent applications of the Angel Mounds GIS are also discussed. The paper concludes with a synthesis of proposed future research to be conducted while utilizing the Angel Mounds GIS.

Natoli, Amelia (Statistical Research), Scott Kremkau (Statistical Research, Inc.), Rita Sulkosky (Statistical Research, Inc.) and Cannon Daughtrey (Statistical Research, Inc.)

[80] *Prehistoric Settlement Patterns in Southeastern Nevada*

This poster presents the results of a recent cultural resources survey of two USACE reservoirs totaling approximately 650 acres in southeastern Nevada. The project area is located at the boundary of several prehistoric groups, including, pre-Numic and Numic speaking foragers, Virgin River Anasazi and Freemont agriculturalists. The survey recorded 28 prehistoric sites which date from the middle Archaic to the Late Prehistoric periods. Artifacts indicate that the area was used by a number of different cultural groups. The poster discusses how the project sites fit into the wider prehistoric settlement system of southeastern Nevada.

Nauman, Alissa (Hamilton College), Ian Kuijt (University of Notre Dame) and Nathan

Goodale (Hamilton College)

[107] *The Materiality of a Dynamic 19/20th Century Village, Inishark, Co. Galway*

Although widely recognized as an important topic in Historic archaeology, surprisingly little research has focused on understanding diachronic change in residential practices within settlements. Drawing upon interviews with former islanders, archival research, and historical documentation, in this poster we attempt to pull apart the interweaving of human action that created the 19th through 20th century village of Inishark, an historic fishing village off Western Ireland that was abandoned in 1960. Integrating historical 1838, 1898, and 2008 village maps with archaeological survey, we are able reconstruct shifts in village scale, land use and residential patterns.

Naumann, Aaron [124] *see* De Leon, Jason P.

Nava, Silvia [147] *see* Cruz Guzmán, Carlos

Navarro-Farr, Olivia (The University of New Mexico)

[191] *Dynamic Transitions at El Perú-Waka': Late to Terminal Classic Ritual Repurposing of a Monumental Shrine*

Research at El Perú-Waka's primary public shrine reveals intriguing evidence for non-royal ritual activities coeval with the decline of the city's royal court. Though its construction was sponsored by and for the ritual use of members of the Royal Court throughout the Classic Period, there is evidence for ritual repurposing of the space by non-royal Wakaños during this transitional period. Violent ritual episodes embedded within this palimpsest include decapitation and dismemberment. Surface deposits provide important clues to how the ancient Maya occupying urban centers like Waka' responded to the decline of the royal court and its attendant socio-político-economic networks.

Ndiema, Emmanuel [97] *see* Dillian, Carolyn

Nechayev, Irina (Ohlone College) and Viviana Bellifemine (University of Cambridge, UK)

[194] *[Enter Submission Interpersonal Violence in Prehistoric Populations from the San Francisco Bay Area: Biocultural Interpretations]*

A re-examination of a large osteological collection from a central California site, CA-ALA-329, indicated diachronic changes in patterns of craniofacial trauma in prehistoric populations, showing changes in the prevalence of craniofacial trauma as well as the type and location of injuries. A number of sites in the region are reevaluated within the mortuary, archaeological, and environmental context to determine possible factors that may have contributed to changing patterns of warfare, which are compared with the ethnographic record. The combination of independent lines of evidence is presented as a reliable approach for the interpretation of injuries in ancient human skeletal remains.

Neff, Hector (California State University-Long Beach) and Barbara Voorhies (University of California, Santa Barbara)

[88] *Elemental analysis of the Tlacuachero floors*

Samples of sediments from Floors 1 and 2 at Tlacuachero have been analyzed by x-ray fluorescence and laser ablation ICP-MS, on the expectation that

patterns of elemental enrichment and depletion might suggest the nature and locations of activities when the floor was a living surface. Dried fish of several species, shrimp, and corn meal were also analyzed in order to derive expectations about how food processing might affect the elemental signature. Highly enriched phosphorus in the floor samples confirms that animal and/or plant tissues were processed on the floor and contributed to the elemental signature. In addition, patterns of enrichment and dilution of phosphorus and other elements appear to indicate locations where these activities were concentrated.

Neff, Hector [5] see *Lipo, Carl P. [8]* see *Paredes-Umaña, Federico A. [142]* see *Arnold, Dean E. [62]* see *Bigney, Scott T. [5]* see *Bernal, Judy [62]* see *Van Keuren, Scott [228]* see *Iizuka, Fumie*

Neff, Linda (N Arizona University) and Ted Neff (Museum of Northern Arizona)

[238] *Year One: Lessons Learned on the Belize Farming Past and Present Experimental Archaeology Project*
The ancient Maya farmers of the Upper Belize River Valley sustained large populations. Today, organic farmers in the same area use farming practices similar to the past ancient Maya methods. Our project investigated this fortunate convergence from the vantage of a present-day organic farm. We summarize the archaeological survey and mapping techniques, soil test-pit results, time allocation data, and personal interviews from year-one. Our findings shed light on past and present agricultural intensification, including land use patterns, planting strategies, agricultural features, soils, composting methods, and agricultural tasks and tools.

Neff, Ted (Museum of Northern Arizona)

[20] *Modeling the Past along the River Corridor: The View from the Results of the MNA/Grand Canyon National Park River Corridor Archaeology Project*
Researchers have defined a number of models to explain and interpret settlement patterning in the Grand Canyon area. The models are settlement-subsistence in orientation, seasonality is a primary factor, and the river corridor and adjacent large side canyons are differentiated from upland and rim areas. New data generated by this project result in a more-nuanced understanding of the river corridor. From this vantage point, in this presentation, I work towards defining the material culture correlates necessary for a test of these models. I then comment on the utility of the models from the river corridor
[20] *First Chair*

Neff, Ted [20] see *Anderson, Kirk C. [20]* see *Spurr, Kimberly [163]* see *Gibbs, Tim [238]* see *Neff, Linda*

Nehlich, Olaf [42] see *Vohberger, Marina A.*

Neiman, Fraser (Monticello), Jillian Galle (DAACS) and Barbara Heath (University of Tennessee)

[121] *Afro-Caribbean ceramics and the economic dynamics of slave-village life on Nevis and St. Kitts*
This paper attempts to advance our understanding of these "Afro-Caribbean" ceramics, based on samples from shovel-test-pit survey of three slave-village sites on Nevis and St Kitts. We use INAA to assess the compositional

distinctiveness of assemblages from different villages and address the question household production. We also track changes in the frequency of Afro-Caribbean wares, relative to imported ceramics, from the mid- eighteenth century to emancipation and their implications for changes in market participation.

Neiman, Fraser [207] see *Smith, Karen Y. [121]* see *Galle, Jillian E.*

Neira, Ana [218] see *Bernaldo de Quiros, Federico*

Neiss, Michael [146] see *Warmlander, Sebastian*

Neitzel, Jill (University of Delaware)

[187] *Facing Identity and Interaction: Human Depictions on Prehistoric Southwest Pottery*
Archaeologists have long been intrigued by human depictions on prehistoric pottery from the U.S. Southwest. These depictions include both three-dimensional ceramic effigy vessels and two-dimensional figures painted on other ceramic forms. One key question has been whether these human representations portray real, living individuals or supernatural beings. This paper first evaluates this question and then focuses on the designs used to decorate human faces. It compares face paint and tattoos on Hohokam, Chacoan, Mimbres, and Casas Grandes pottery and evaluates what the patterns of variation indicate about identity and interaction in the late prehistoric Southwest.

Nelba Del Castillo Salazar, Mirza [33] see *Killoran, Peter E.*

Nelle, Oliver [25] see *Jansen, Doris*

Nelson, Andrew (The University of Western Ontario) and Carol Mackey (California State University, Northridge)

[156] *A Reanalysis of the Avispas Burial Mound at Chan Chan*
The Avispas burial platform from Chan Chan was excavated and analyzed in the early 1970s. Analysis suggested that the sample of individuals buried in the platform was composed of several hundred females between 17 & 24 years of age. Recent reanalysis of the material suggests that the sample includes a broader demographic, including males and both younger and older females. In addition, the sample includes individuals with a broad range of forms of cranial modification. These results shed new light on this important context and the mortuary and ritual/sacrificial practices of the Chimú.

Nelson, Ben A. (Arizona State University) [58]
Discussant [36] see *Cleland, Robin*

Nelson, Kit (Tulane University) and James Davenport [63] *Compositional Analysis Using pXRF of Ceramic Pastes and Pigments from the Late Intermediate Period of the North Central Coast of Perú*

The Late Intermediate Period on the North Central Coast of Peru is a period of state-level formation. One of the many changes that occur with the expansion of the Chancay Culture into the Huaura Valley is the formation of new pottery types. Some of these types, including

Chancay Black-on-Yellow, are argued to be locally produced. Others, such as Cayash/Lauri Impressed are thought to be produced elsewhere. Attribute analysis is used in conjunction with the analysis of pastes and slips using portable X-Ray Fluorescence to explore the question of production and distribution during this transition.

Nelson, Kit [142] *see Davenport, James A.*

Nelson, Peter (UC Berkeley) [250] *Discussant*

Nelson, Sarah (University of Denver)

[122] *Sex and Violence in the Archaeological Record, a Gendered Approach*

Sex and violence were rampant in the Late Shang dynasty, providing the plot for my new archaeological novel. King Wu Ding had 64 wives, but Lady Hao was his favorite. Thus the theme of sex. Royal polygamy was probably looked upon differently by the king than by his wives. The violence of Shang is evident in large scale human sacrifice and constant warfare. Lady Hao herself was a general - did she approve of the violence? Can the archaeological novel convey the romance of the dig, the horrors of the time, gendered perspectives and the problems with looting of archaeological sites in China without overwhelming the reader?

Nelson, Shaun (Utah National Guard), Aaron Jordan (Bighorn Archaeological Consultants) and John Crane (Utah State University / Utah National Guard)

[150] *Backhoe Village Revisited: Results from Recent Excavations at the Richfield Armory.*

Recent construction at the Utah National Guard's Richfield Armory exposed intact cultural deposits associated with site 42SV662, Backhoe Village. The project is reminiscent of an earlier excavation during construction of the armories vehicle maintenance shop in 1998. How do the recent excavations build on the considerable body of data already collected for Backhoe Village? Is the Richfield Armory site really associated with Backhoe Village or is it a separate site altogether? What implications do these discoveries have on future projects in the area?

Nelson, Zachary (ENTRIX, Inc.) and Antonio Prado Cobos (Estudio Prado)

[28] *Ancient Maya Measurement System: Length*

The Ancient Maya measured their world precisely. They had an organized and explicit measuring system in place. Aspects of this system have been discovered via analysis of thousands of fine stone objects. This system was then verified against other archaeological materials. A basic unit of Mayan measurement is the equivalent of 36 mm.

[251] *Discussant*

Neme, Gustavo (CONICET-Museo de Historia Natural de San Rafael), Miguel Giardina (CONICET-Museo de Historia Natural de San Rafael), Seth Newsome (University of Wyoming) and Adolfo Gil (CONICET-Museo de Historia Natural de San Rafael)

[12] *Eggshells Stable Isotopes Tendencies And Human Exploitation In North Patagonia*

Rheidae eggshell fragments are ubiquitous in north Patagonian archaeological sites, suggesting that this

resource was important for prehispanic human populations in the region. Here we present temporal and spatial trends in carbon ($\delta^{13}C$) and oxygen ($\delta^{18}O$) values of eggshells ($n=232$) from north Patagonia to evaluate potential shifts in past environmental conditions. The eggshell samples are derived from 20 archaeological sites located in a variety of environmental contexts in southern Mendoza province and date to ~5000-500 ypb.

Neme, Gustavo [62] *see Gil, Adolfo*

Neusius, Phillip (Indiana University of PA) and Seth Mitchell (Indiana University of Pennsylvania)

[7] *Prehistoric Chert Extraction in the Mountains of Central Pennsylvania*

Mitigation of the construction of a runway addition for the Bedford County Airport resulted in an extensive excavation of the Late Archaic Ickes 1 and Ickes 2 sites in central Pennsylvania. Nearly all of the stone tools and debitage from this excavation are made from a black chert locally referred to as Bedford chert. Although the exact source of this chert has not been discovered the analysis of this lithic collection indicates predominately early stage manufacture suggesting that the source is nearby.

Neusius, Sarah (Indiana University of PA) and Beverly Chiarulli (Indiana University of Pennsylvania)

[209] *Exploring the Occupational History of the Johnston Site*

The Johnston site (36IN2) is known as a large Middle/Late Monongahela village located on the Conemaugh river in Indiana County, Pennsylvania. Excavations in the early 1950s established the existence of at least two stockades encircling a ring of houses and other domestic features that themselves enclose a large central plaza. Our investigations since 2005 are providing significant new data including a series of radiocarbon dates. The existence of up to four stockades, overlapping features and a diverse artifact assemblage as well as dates spanning at least 300 years indicate a more complex occupational history than previously assumed.

[130] *Discussant [209] Second Organizer*

Neuzil, Anna (EcoPlan Associates, Inc.)

[52] *What the End Looks Like from Out Here: the View from the Safford Valley*

Archaeological evidence has demonstrated that the Safford Valley of southeastern Arizona was a destination of migrant groups from the Kayenta/Tusayan region of northeastern Arizona in the late thirteenth century. Unlike in other regions that Kayenta/Tusayan migrants settled, however, migrants to the Safford Valley appear to have been readily incorporated into the existing social fabric of the region, causing the social identity of both migrants and locals to be renegotiated. This paper examines the impacts of migration on the terminus of prehistoric occupation of the Safford Valley, specifically examining changes in social identity.

Neuzil, Anna [264] *see Heckman, Robert A.*

Newbold, Bradley (Washington State University), R. Kyle Bocinsky (Washington State University), Brian Kemp (Washington State University) and Phil Geib (University of New Mexico)

[70] Ancient Domestic Turkeys at Atlatl Rock Cave
Ancient DNA extracted from turkey coprolites found at Atlatl Rock Cave in northern Arizona was analyzed in order to further investigate the origin and distribution of turkey stocks within the Southwest. Focusing on remains from the Basketmaker III period, preliminary results show a majority of turkeys belonging to the dominant domestic haplotype seen elsewhere in the ancient Southwest with the remainder belonging to a previously unrecognized and perhaps an additional domestic lineage of turkey in the region. Sex ratios, determined through coprolite morphology and genetic sexing, also shed light onto the demographic nuances of turkey domestication.

Newell, Gillian (UNICACH)

[173] Notes on the "Tragedy at Utqiagvik, Alaska": South of the Border

This paper looks at the experience, reconstructed in part post-humously and with the help of a former co-director, of dealing with the challenges surrounding the excavation of Mound 44 - an archaeological site featuring a pre-contact Eskimo family which had been buried spontaneously by pack ice in the 1540's. In an effort to understand the innerworkings of heritage politics, the author aims to draw parallels and contrasts between her own current work in Mexico and that at Mound 44 in the 1980s (Utqiagvik (Barrow, Alaska) Project directed by the late Al Dekin and Raymond Newell). Issues of indigeneity are addressed.

Newlander, Khorl (University of Michigan)

[262] Reconsidering the Lithic Landscape of East-Central Nevada during the Terminal Pleistocene/Early Holocene
Current models of Paleoarchaic mobility use obsidian provenance to define foraging ranges, though Great Basinists disagree over whether these ranges represent the territories of residentially mobile foragers or logistical forays from wetland base-camps. Here, I reconsider the Paleoarchaic lithic landscape of these foragers - the potential realm of procurement - by exploring (1) the possibility of "sourcing" chert artifacts and (2) the technological variability represented amongst chert artifacts at a series of Paleoarchaic lithic assemblages in east-central Nevada. These data complement previous analyses of obsidian and establish a baseline against which models of Paleoarchaic mobility and lithic procurement may be evaluated.

Newlander, Khorl [17] see Lemke, Ashley K.

Newman, Elizabeth (Stony Brook University)

[200] From Colony to Country: Hacienda Workers and Material Culture in 19th Century Mexico
In 1821, Spain formally recognized Mexico's status as an independent nation. As identity shifted from colony to country and processes of modernization accelerated, new practices of rural labor management were implemented. This paper explores the experience of rural laborers at the Hacienda San Miguel Acocotla in Puebla, Mexico with an examination of the artifacts recovered from excavations in their living quarters.

Newsome, Seth [12] see Neme, Gustavo A.

Ney, Hannah and Samuel Levy (Grinnell College)

[135] Sinagua Farming and the Landscape: Micro-

environmental GIS Analysis

The Sinagua of northern Arizona relied on dry-farming agriculture in scattered plots, and intimate knowledge of the landscape to maximize crop yield. We used a micro-environmental approach to analyze a km² of land near Lizard Man Village that contained evidence of habitation and varying geographical features. We collected soil samples every 50m, testing for moisture and nutrients essential for plant growth: nitrates, phosphates, and potassium. We created GIS layers to combine with pre-existing, less fine-grained environmental data to create a detailed picture of the landscape to understand why the Sinagua settled and farmed where they did.

Nez, Jason (Museum of Northern Arizona)

[20] Looking Up: A Native American archaeologist Perspective on Archaeology in the Grand Canyon

Jason Nez, an archaeologist with the Navajo Nation Archaeology Department, has worked on the Grand Canyon archaeology project from 2006 to 2009. He has made numerous trips into the Grand Canyon, on foot, and by boat to visit, record, and excavate some of the unique archaeological sites within the Grand Canyon. His job as an archaeologist is a rare career path among southwestern Native Americans. He will discuss his relationship as a Navajo, to the Grand Canyon and his experiences as an archaeologist in the Grand Canyon, and why he has chosen this career field.

Nials, Fred (Desert Archaeology, Inc.; GeoArch)

[244] An Early Agricultural Period Irrigation System in the Tucson Basin, Arizona, USA

Irrigation farming began in the Las Capas Site as early as 1300 B.C. and continued for ca. 500 years. Rapid deposition of 1.5m-3m of overbank flood sediments over more than 50 ha. of the site favored exceptional preservation of nearly 200 canals of various sizes, more than 750 individual border-basin fields, and thousands of planting holes in 9 stratigraphic levels. More than 2.2 ha of the site were stripped in thin increments to depths up to 6m, revealing how the system was operated, maintained, and reconstructed in response to hydrologic constraints, flood deposition, arroyo and piping erosion.

[244] First Chair

Nicholas, George (Simon Fraser University)

[197] Achieving Reasonable Balance in Archaeological Practice

The thrill of archaeological fieldwork has, for me, increasingly been tempered with the need to ensure that the reasons for, and products of, archaeological endeavors are relevant to people today, whether descendant communities or the public at large, not just to other archaeologists. I discuss lessons learned from two decades of involvement in Indigenous archaeology and, more recently, directing the international IPinCH Project, which utilizes both community-based participatory research and standard research practices in pursuit of helping communities, scholars, and consumers resolve issues relating to intellectual property concerns in cultural heritage. I argue that promoting a more socially responsible archaeological practice adds, not subtracts, value in archaeological practice, and results in great satisfaction and relevance.

[78] Discussant

Nicholls, Brian [104] *see* Crowley, Erin M.

Nicholson, Christopher [114] *see* Egeland, Charles P.

Nickels, Adam [83] *see* Perry, Lauren M.

Nielsen, Ejvend [83] *see* Huang, Jennifer K.

Niessner, Janet (PaleoResearch Institute), Linda Scott Cummings (Paleoresearch Institute, Inc.) and Melissa K Logan (Paleoresearch Institute, Inc.)

[66] *Artifacts, Organic Residues and Sample Handling: To Handle or Not To Handle*

Artifacts often carry complex signatures of their use within their fabric. Recovering these signatures can be hampered by modern technology, which introduces potential for contamination of various forms. Both curation labeling (essential for identification) and storage can add signatures. Comparing food signatures and introduced contamination signatures (illustrated) provides insight into the residues added by use of white out, fingernail polish, PVA, plastics, adhesive labels, petroleum-based compounds, and even tobacco. Finally, we offer recommendations to archaeologists in the field for correct methods in collecting samples to avoid contamination and ultimately retrieve the most accurate prehistoric signatures.

[66] *First Chair*

Nikolova, Lolita (International Institute of Anthropology)

[260] *Gender and Jewelry in Prehistory (Balkan Case Study)*

Study of the interrelations between gender and jewelry in prehistory demonstrates evolutionary changes in the function of the material culture and how they relate in particular to wealth, innovations, and migrations. The evolution of wearing jewelry will be analyzed especially in the Balkan region. The basic burial data come from Durankulak (Late Neolithic – Copper Age) and Mokrin (Early Bronze Age). According to the proposed model, jewelry started in the Balkans without very distinct gender difference. It evolved gradually in prehistory as a typical female attribute and a designation of wealth and possible foremost social positions of some males.

Nilsson Stutz, Liv (Oxford College of Emory University)

[254] *Schwarzenegger's smile. The controversy of the Mamilla Cemetery and how the preservation and destruction of a burial site takes central stage in world politics.*

The Mamilla cemetery is one of the oldest Muslim cemeteries in Jerusalem. Preserved yet neglected for years, the cemetery is a monument to the past Arab presence in Jerusalem, but also a material testimony to the political geography of the contemporary city. In a country with strict laws regulating the excavation of Jewish remains, the cemetery regained a place in the limelight as the planned construction of a Museum of Human Dignity and Tolerance on the site warranted excavation. The unfolding events which immediately engaged archaeology, and clearly reflected a contemporary heritage discourse, included claims, preservation, destruction and restoration.

Nilsson Stutz, Liv [226] *see* Larsson, Asa M.

Noble, Tommy [60] *see* Bies, Michael

Nohe, Sarah (Florida Public Archaeology Network) and Terry Brock (Michigan State University)

[214] *Social Media as Public Archaeology*

Digital social media has emerged as one of the most powerful and revolutionary forms of media consumption, interaction, and information distribution. Unlike traditional forms of media, blogging and social networking allow information to travel from the source, reaching wide audiences directly, and providing opportunities for feedback, criticism, and interaction. Two programs, the Michigan State University Campus Archaeology Program and the Florida Public Archaeology Network, have successfully employed digital social media to engage the public in archaeological heritage. This paper illustrates the effectiveness of digital social media as a means to facilitate public archaeology.

Nolan, John (Ancient Egypt Research Associates)

[47] *Sealings and Seals from Pyramid Age Egypt*

In 2005 at Giza (Egypt), teams working for Dr. Mark Lehner discovered an apparently undisturbed series of dump deposits containing about 1,200 clay sealings dating to the reign of Menkaure, builder of the last major pyramid at Giza. A core group of 424 of these sealings were impressed by just twelve seals distributed to the owners by the central government. By reconstructing the seals of these officials and examining their uses over the period covered by the sequence of dumping deposits, we can gain an important synchronic snapshot of the development of the Egyptian state.

Noll, Christopher (Plateau Archaeological Investigations), John Kannady (Plateau Archaeological Investigations, and University of Idaho) and Brenton Sharratt (United States Department of Agriculture, Agricultural Research Services, and Washington State University)

[257] *Lithic Scatters that Blow: Wind as an Agent of Secondary Deposition of Lithic Artifacts.*

Artifact presence or absence is frequently the only criteria used to define the horizontal extent of archaeological sites. Artifact transport by natural agents such as water and gravity is known to move artifacts from their primary context, though experimental simulated wind conditions demonstrate that small-size debitage also may be transported by wind. The effect of wind on artifact distribution is explored using data from a large lithic workshop exposed to high wind speeds. This study suggests that wind sorting can be recognized through the horizontal distribution of artifact size across a site to determine the location of the primary deposit.

Nonni, Sara [92] *see* Lubritto, Carmine

Norder, John (Michigan State University)

[197] *Archaeology, Traditional Environmental Knowledge, and Environmental Justice*

Archaeologists collaborating on Indigenous cultural heritage are increasingly confronted with community definitions of heritage that do not always fit within the familiar frameworks of state, provincial, or federal policies. Cultural heritage can be a holistic epistemology

within these communities that includes environmental resources. In examining ways in which archaeology can address this shifting focus, applied studies of Traditional Environmental Knowledge (TEK) would seem to fit the bill. However, recent critics note that environmental co-management applying TEK can lead to subtle forms of environmental injustice. This paper examines TEK and its potential and problematic solutions for an applied archaeology.

[252] *Discussant*

Norman, Garth (ARCON, Inc.)

[28] *2012 and Beyond: Origins at Izapa*

Calendar research of the Izapa Temple Center reveals two Five World Ages systems based on the Olmec Calendar Round that preceded invention of the shorter Maya Long Count (during the Late Preclassic). The 260-day cycle, tied to Izapa's 15 degree north latitude zenith passage, relates to astronomical observation of equinox precession. This is anchored to Calendar Round dates on Stelae 5 and 12. These new discoveries reveal the importance and antiquity of the Calendar Round that dominated Mesoamerica before the Classic Maya era and after the Maya collapse.

Norman, Lauren [159] see Friesen, Max

Norman, Neil (William and Mary)

[198] *Surplus Houses: Palace Politics in the Bight of Benin West Africa, 1650-1727 A.D.*

This paper explores a series of relatively massive architectural features in the Kingdom of Hueda. It argues that the houses are best explained in terms of Jane Guyer's notion of "Wealth in People" in that they materialized labor relations between kings and non-elites and played into local elite competition over regional prominence. It further argues that these houses served as the focal point of surpluses generated from Atlantic economic exchanges.

Normark, Johan (Göteborg University)

[214] *Dealing with the Public View of the Maya*

The public view of the Maya is often affected by stereotypes, exoticism, and ethnocentrism. Nowhere is this clearer than in the 2012-phenomenon. While blogging about various parts of this phenomenon I have encountered everything from threats, dismissals on the grounds that I am biased because I am part of the academia but also positive feedback on the attempt to uncover frauds. Although my blog primarily is dedicated to Mayanist studies and archaeological theory, the 2012 part of the blog is most popular. How does that affect my choice of topics? Am I also feeding on the phenomenon that I criticize?

Normark, Johan [67] see Shaw, Justine M.

Norton, William (Archaeological Research Center, CSU, Sacramento) and Mark Basgall (Archaeological Research Center, California State University, Sacramento)

[150] *Stuck in the Middle: On the Nature of Coastal-Interior Interactions*

Ethnohistoric records suggest that aboriginal California populations articulated their exploitation of coastal and interior resources in complex ways, either using a

strategy of seasonal transhumance to access the two habitats or moving resources via logistical organization. These alternatives have been difficult to identify strictly on the basis of archaeological remains, complicating attempts to assess the nature and time-depth of these land-use patterns in the deeper past. Intensive investigations at Camp Roberts in San Luis Obispo County, California, suggest significant shifts in how inland populations exploited coastal environments and marine resources during the late Holocene era.

Novic, Juliana

[58] *Ancient Urban Viewscapes: Viewing Monumental Architecture at Calixtlahuaca*

The city of Calixtlahuaca in the Toluca Valley of Mexico has a unique configuration of monumental architecture when compared to other Aztec City-State capitals. I examine the viewscape as seen upon entering the urban center of Calixtlahuaca using least cost-path and viewshed analyses. Changes in the viewscape through time will be incorporated into the viewshed model. The goal is to examine questions of monumentality and power.

Novotny, Anna (Arizona State University)

[56] *The Stacking Principle and Ancestral Transformation: Bodies and life essences in an ancient Maya farming community*

Ancestors were, and continue to be, the foundation of Maya communities. However, individual transformation into an ancestor is not well understood. Cross-culturally, treatment of the deceased body is linked to beliefs about the fate of the "soul", or life-essence. Among the ancient Maya burial treatment includes vertical stacking of bodies within one grave. Stacking of objects represents material transformation in ancient Maya iconography. Contextualized bioarchaeological data, including sequence of body deposition and individual life-histories of the deceased, are presented from the site of Chan, Belize, to investigate the stacking principle and its role in attaining ancestral status.

Nygard, Travis (Ripon College) and Linnea Wren (Gustavus Adolphus College)

[102] *Bridging Archaeological and Art Historical Methodologies in the Coahuah Region of Mexico: A Study of Space at the Maya Site Yo'okop*

Archaeologists and art historians have a keen interest in understanding the spatial properties of the world. In this paper the authors consider how approaches from these disciplines complement each other when analyzing the past. The authors use the Maya site Yo'okop in the Coahuah region of Mexico as a case study, showing how the site's spatial properties changed during the Formative through the Postclassic periods. This region has been analyzed by members of the Coahuah Regional Archaeological Survey since 2000, which the authors joined for the 2001 field season. Data used includes the built environment and pictorial space.

O'Rourke, Dennis H. [126] see Broughton, Jack M.

O'Brien, Chris [77] see Martinez, Antoinette

O'Brien, Christopher (CSU Chico/Lassen National Forest), Adam Gutierrez (California State University,

Chico), Erik Martin (California State University, Chico), Frank Bayham (California State University, Chico) and Antoinette Martinez (California State University, Chico)

[77] *Beyond Ishi and the Yahi: Kingsley Cave in Regional Context*

The story of the last Yahi, Ishi, figures prominently in the native cultural history of Northern California. The Ishi context in particular and the Yahi/Yana ethnographies in general have greatly influenced the nature of archaeological research and interpretation in this area. Is the Ishi/Yana context appropriate for framing archaeological investigations, or does it represent a tyranny of the ethnographic record that masks a more complex native presence? This paper examines the broader regional context of archaeological work conducted by the Lassen National Forest and others in this area in the 60 years since Baumhoff's first excavations at Kingsley Cave.

O'Brien, Christopher [77] *see Bayham, Frank E.*

O'Brien, Gary [20] *see Pederson, Joel L.*

O'Brien, Helen (Pima Community College), Jennifer DeJongh (Pima Community College) and Lea Mason-Kohlmeier (Pima Community College)

[137] *Research Methodology, Implementation and Student Field Training for the Burro Creek – Pine Creek Archaeological Survey*

Since 2003, advanced Pima Community College students have been honing their field methods and technological skills by participating in the survey of nearly 6000 acres in west-central Arizona. Under the supervision of faculty and staff, students have recorded, photographed, mapped and completed surface collections on more than 100 sites. Methodologies emphasize traditional field techniques and the integration of the information collected with technological approaches in the production of maps and digital data. These combined efforts have illuminated the prehistory and history of a little known area and provided the students with valuable skills and experience.

O'Brien, Lauren (Southern Methodist University), B. Sunday Eiselt (Southern Methodist University) and Felipe Ortega

[207] *Thermal Efficiency and Durability of Micaceous Clay Cookware from the Northern Rio Grande: An Experiment*

In northern New Mexico, micaceous clay occurs in high elevation Precambrian formations containing super-abundant levels of mica. Anecdotal evidence suggests that this clay has thermal and physical properties that make it an excellent choice for cookware, but these properties have never been formally tested in a laboratory setting. This study expands upon a previous experiment which focused on the thermal efficiency of micaceous pottery. The revised experiment incorporates additional variables that may have a bearing on the use of this clay for cookware in the Northern Rio Grande since AD 1300, including resistance to thermal shock and physical impacts.

O'Brien, Meghann (University of Florida), Deborah M. Pearsall (University of Missouri-Columbia) and

Lisa Sattenspiel (University of Missouri-Columbia)
[124] *The Identification of Prehistoric Amazonian Slash-and-Burn Cultivation Practices Using an Agent-Based Model*

Agent-based modeling offers unique insight into questions concerning slash-and-burn cultivation practices of prehistoric Amazonian populations. Due to the poor preservation of some botanical remains and a paucity of ethnographic records on cultivation practices in Amazonia, little is known on the prehistoric cultivation practices of indigenous populations. The Amazonian Slash-and-Burn Model and the Succession Model, both agent-based models, were developed to help address how much influence prehistoric Amazonian populations had on their surrounding environment and if different cultivation strategies could be identified in subsequent forest composition. The results suggest that different slash-and-burn cultivation strategies can potentially be identified in paleoecological records.

O'Brien, Michael (University of Missouri)

[126] *R. Lee Lyman's Contributions to Zoological Sciences*

R. Lee Lyman is the recipient of the 2011 Fryxell Award for Interdisciplinary Excellence in Zoological Sciences. For over 35 years, Lyman has been making important contributions to a range of topics in the broad field of zooarchaeological sciences, including taphonomy, biogeography, mammalogy, conservation biology, and quantitative methods. This symposium celebrates Lyman's enormous contribution to zooarchaeology and beyond by assembling scholars from both the Old World and the New World whose work has been enriched by Lyman's theoretical and methodological approaches.

[126] *Second Chair [126] Second Organizer*

O'Brien, Michael [22] *see Buchanan, Briggs [155]* *see Collard, Mark [218]* *see Boulanger, Matthew T.*

O'Connell, James (University of Utah)

[230] *"What's your work? When will I see copy?" Archaeology at Berkeley 1965-70*

Like Billy Clewlow, I was a member of Robert Heizer's research group in the late 1960s. Apart from the feeling we shared of being at the center of the cultural universe (and acting on it, often), it was an odd place to be pursuing a graduate degree in American archaeology: no set curriculum, no required courses, few seminars that actually met, no reference among the faculty to the "New Archaeology," and scarcely a word about Lew Binford. What did we do as students? How well did it prepare us for the careers we ultimately pursued? I reflect on some answers.

[12] *Discussant*

Odell, George (University of Tulsa) [59] *Discussant*

O'Donnabhain, Barra (University College Cork, Ireland) [217] *Discussant*

O'Donnell, John [81] *see Sweeney, Alex Y.*

Oelze, Vicky (Max Planck Institute for Evolutionary Anthropology) and Michael Richards (Vancouver; Max Planck Institute for Evolutionary Anthropology, Leipzig)

[255] Early Bronze Age & Early Iron Age couch potatoes – Is there evidence for mobility at the sites of Singen & Magdalenenberg?

The Early Bronze Age necropolis of Singen and the Early Iron Age burial mound of Magdalenenberg represent two populations from periods of technological transition in southwestern Germany. The purpose of this study is to investigate possible mobility and to reconstruct human diets using isotopic analysis. We analyzed the ratios of strontium and oxygen isotopes in human enamel since this reflects the provenance in early childhood. Additionally, sulphur isotopes from bone collagen were used as geological tracer reflecting the provenance during the last decade of life. We can differentiate local and non-local individuals by combining these different isotope systems.

Oestmo, Simen (Arizona State University), Benjamin Schoville (Arizona State University) and Jayne Wilkins (University of Toronto)

[108] Preliminary Taphonomic and Technological Analysis of a Middle Stone Age (MSA) Open-Air Lithic Assemblage at Nautilus Bay, Western Cape, South Africa

Here we present preliminary taphonomic and technological analyses of a MSA lithic assemblage from an exposed ancient land-surface suggestive of an intact paleosol at Nautilus Bay, South Africa. Total-station piece plotting of artifact orientation/dip, artifact size distributions, and the exposed surface side-up of artifacts, suggests the lithic assemblage has undergone limited post-depositional disturbance. Technological analysis indicates early stage lithic reduction, evidenced by large tested cobbles with few removals, and a high percentage of dorsal cortex. Nautilus Bay expands the range of MSA behavioral variation to areas outside of cave contexts along the southern coast of South Africa.

Ogburn, Dennis (University of North Carolina at Charlotte) and Nicholas Tripcevich (UC Berkeley)
[267] Variation in Inca Building Stone Quarry Operations in Ecuador and Peru

Data from a number of Inca stone quarries are examined to explore the variability in Inca organization of the activity of producing cut-stone building blocks in the heartland of Cusco, Peru and the southern highlands of Ecuador. Great variability is seen in the size of quarries, distance from construction sites, and the associated facilities constructed to support quarrying activities. In contrast, all quarries were similar in location near major roads, type of stone, and steps of ashlar preparation undertaken at the quarry. The sacred nature of quarries and building stone in the Inca Empire is also explored.

O'Gorman, Jodie [106] see Wallace, JoAnn

O'Grady, Patrick and Scott Thomas (Bureau of Land Management, Burns District)

[120] Clovis in Oregon: Recent Investigations in the Northern Great Basin

Oregon has four sites containing multiple fluted points. A small number in comparison with other states, three were discovered within the last five years. They are a testimony to the success of BLM pedestrian surveys to identify such localities. Surveys also resulted in the recovery of dozens of isolated fluted points. Excavations

occurred at two upland sites in partnership with the University of Oregon. Collectively, the survey and excavation data provide a significant advance in our understanding of Clovis occupations. This presentation offers insights by way of site and artifact distributions, technological attributes, obsidian geochemical analysis, and hydration

O'Hagan, Terry [107] see Lash, Ryan P.

O'Hara, Michael (Arizona State University)

[143] Creating Local and Regional Contexts for Understanding Sinagua Mortuary Practices

The mortuary record of the Flagstaff region is best known for the burial of the Magician, who was accompanied by several discrete sets of ritual paraphernalia representing different ritual and political roles. The present project will compile a mortuary database for the Flagstaff region in conjunction with the creation of other regional databases using standardized variable states. These efforts will allow a greater contextual understanding of the Magician within his local community, as well as with other regions, especially the foundational ritual practices of the Chaco region and the later practices of diasporic communities below the Mogollon Rim.

[113] Presenter

Okumura, Mercedes (University of Sao Paulo, Brazil) and Astolfo Araujo (Museum of Archaeology and Ethnology, University of Sao Paulo)

[6] The bifacial points from Southeastern Brazil: Chrono-spatial characterization through statistical analysis

It has been proposed that the "Umbu" tradition, whose definition is based on the presence of bifacial points, would have originated in Southeastern Brazil around 10,000 BP and it would be still observed around 1,500 BP. So far, very few chronological markers have been identified. That, together with its extended chronological frame, resulted in much controversy about the actual existence of such a tradition. We aim to illuminate questions related to the characterization of that tradition, the possible changes in the size and shape of these bifacial points through time and the chrono-spatial relationship among point groups.

Oland, Maxine (Keene State College) and William Stemp (Keene State College)

[190] Local and Regional Maya Lithic Economies in the Postclassic-Colonial Periods: Comparing Data from Progreso Lagoon and San Pedro, Belize

This paper compares the lithic economies of two Postclassic-Colonial Period Maya sites in present-day Belize. Both Progreso Lagoon and San Pedro had Maya occupations in the centuries before and after the Spanish conquest. We compare lithic tool production and consumption from these communities in order to illuminate local and regional economic patterns during the 15th-17th century.

Olanos Canales, Jorge [267] see Van Gijseghem, Hendrik

O'Leary, Beth (New Mexico State University)

[242] The Evolution of Space Archaeology and Heritage

Beginning in 1969 with the Apollo 12 mission astronauts observing, recording and collecting artifacts from the

previous Surveyor 3 mission on the lunar surface, the field of space archaeology and heritage has expanded to include placing the objects and structures at the first lunar landing site on the California and New Mexico State Registers of Cultural Properties in 2009. This emerging field archaeology looks at humanity's exploration of outer space and other celestial bodies. This paper will present an overview of the field, its various specialized areas and researchers and its future in terms of historic preservation.

[242] *Second Chair*

Olguin, Ivan (Ivan Olguin)

[95] *Nuevos datos hacia una reconstrucción hipotética del edificio 37 del Grupo del Adobe en Mitla, Oaxaca.* Con la reciente exploración de la fachada Este del edificio 37 del Grupo del Adobe, para descubrir una sección de su cuerpo inferior para registrarla y posteriormente liberarla, se busca entender la composición arquitectónica del mismo. Con lo anterior, se pudo confirmar que el primer cuerpo estuvo revestido de piedras careadas, así como la existencia de un apisonado en la base de este primer cuerpo. También se halló una pieza completa y unos trozos de piedra de mosaico que apoyan la hipótesis formulada por Holmes (1897), de que este edificio pudo tener fachadas ornamentadas con grecas como otros edificios de Mitla.

Oliva, Fernando [101] *see Barrientos, Gustavo*

Olsen, Nancy (De Anza College, Cupertino, California)

[158] *A Case for Ethnic Boundary Maintenance in Rock Art on the Pajarito Plateau, New Mexico*

Building on systematic results of two inventory surveys by UCLA on the Pajarito Plateau and the National Park Service in Bandelier National Monument, New Mexico, this study applies Frederick Barth's (1969) investigation of symbolic boundary maintenance among the Hopi-Tewa to image category distributions in archaeological contexts to test for analogous symbolic separations identified by Barth among Tewa descendants.

[158] *Second Organizer*

Olson, Elizabeth (University of Maine), Kitty Emery (Florida Museum of Natural History at the University of Florida) and John Krigbaum (University of Florida)

[206] *Zoometric Breed Analysis and Isotopic Paleodietary Reconstruction of the Maya Dog*

Dogs are among the most common of animals in faunal assemblages at Maya sites. In order to better understand ancient Maya dog importance, dog remains from eleven Maya sites ranging in date from the Preclassic (2350 BP) through the Late Classic (977 BP) were analyzed. Three methods were used: bone morphology and metrics, stable isotope bone chemistry, and mortuary treatment analysis. By combining these data sets this study finds trends in dog dietary pattern through time, between regions, and among breeds.

Olton, Elizabeth (The University of New Mexico)

[102] *History and Ideology at the Great Plaza, Tikal, C.E. 734*

For the ancient cultures of Mesoamerica "space" was not an empty or inert place but was infused with narrative

and history. Among the Olmec this dynamic was revealed in the offerings and sculpture from La Venta's Complex A. The Great Plaza at Tikal functioned as a gathering place, like Complex A it was a space where part of its footprint lay buried. Pavements, offerings, and structures mark this place as sacred and indicative of a larger narrative. This environment will be explored as an ensemble of interrelated parts resulting in a nuanced interpretation of the co-existence of history and ideology.

O'Mansky, Matt (Youngstown State University)

[195] *The Canfield Jail Site: Regional Political Struggles in 19th Century Ohio*

The Canfield, Ohio jail was constructed in the mid 19th century in order to solidify Canfield's position as the Mahoning County seat. While much was known about the period of the jail's construction and use from historical documents, relatively little was known of the physical structure itself until excavations revealed the building's foundations and large quantities of artifacts. Additionally, local media coverage brought out an interested public with largely unknown photos, maps, and stories, enriching knowledge of the regional political battles during an important era in the "Rust Belt's" history.

O'Neill, John [107] *see Lash, Ryan P.*

Orchard, Trevor (McMaster University), Nicole Smith (Parks Canada), Iain McKechnie (University of British Columbia) and Daryl Fedje (Parks Canada)

[168] *Subsistence Change in Late Holocene Gwaii Haanas (southern Haida Gwaii, British Columbia): Mass Harvesting Technologies and Resource Specialization*

The specialized mass harvesting of focal resources, most notably salmon, has been widely linked to the rise of complex social organization on the Northwest Coast of North America. The timing and nature of these developments, however, are widely variable and have been securely documented for relatively few regions of the culture area. This paper explores these issues through a synthesis of recent research in southern Haida Gwaii which is providing evidence for subsistence specialization (documented in zooarchaeological assemblages) and the proliferation of mass harvesting technologies (intertidal and riverine fish weirs) during the late Holocene.

Orr, Kelly [10] *see Hadden, Carla*

Ort, Michael [99] *see Elson, Mark D.*

Ortega, Felipe [207] *see O'Brien, Lauren*

Ortegón Zapata, David [266] *see Smyth, Michael P.*

Ortman, Scott (SFI/Crow Canyon)

[264] *Pottery style and the Mesa Verde migration: new evidence from Tsama Pueblo, New Mexico.*

Archaeologists have long-debated whether a portion of the 13th century Mesa Verde region population moved to the Northern Rio Grande. In this paper, I present new typological and design attribute data from Tsama Pueblo, an ancestral Tewa site in the Chama Valley, which lends support to migration models. In this assemblage, the Mesa Verde design style is far more apparent than has

been noted in contemporary assemblages from the Pajarito Plateau. I suggest that differential persistence of the Mesa Verde style from place to place reflects the social contexts into which Mesa Verde immigrants moved during this Period.

[99] *see Varien, Mark D*

Orton, David [26] *see Biehl, Peter F.*

O'Shea, John (University of Michigan)

[265] *Comparing Acoustic Search Techniques on the Alpena-Amberley Ridge of Central Lake Huron*

The information return from side scan, single-beam and multi-beam sonar was evaluated over a portion of the Alpena-Amberley Ridge in central Lake Huron. While each technique displayed interesting advantages, all made their strongest archaeological contribution in the realm of bottom imaging and feature identification, i.e., in creating a detailed model of the past landscape. While several techniques identified stone configurations consistent with ethnographically known hunting structures, they were less successful at detecting more traditional archaeological features such as hearths or lithic scatters. The implications of this finding for submerged archaeological survey are discussed.

[226] *Discussant*

Ossa, Alanna (Arizona State University)

[182] *Plazas in comparative perspective in south-central Veracruz from the Classic to the Postclassic period (A.D. 300-1350)*

Previous research comparing settlement pattern data from both south and south-central Veracruz identified regional differences in plaza dimensions. Plazas in south-central Veracruz were larger and squarer in shape, possibly reflecting variations in building and using space in plaza activities. Comparisons between plazas within Cerro de las Mesas and the later centers of Azuzules and Nopiloa indicate some intraregional differences in access and population accommodation during the Classic period (A.D. 300-900). Finally, the apparent disappearance of prior plaza groups by the Middle Postclassic period (A.D. 1200-1350) indicates a shift in political use of public spaces linked to a new population.

[216] *see Eschbach, Krista L.*

Ostaptchouk, Sonia [26] *see Biehl, Peter F.*

Osterholtz, Anna (University of Nevada Las Vegas) and Ann Stodder (The Field Museum)

[237] *Personal Taphonomy at Sacred Ridge: Burial 196*
The fragmentary remains of a female aged 45 to 50 years were recovered from floor fill in the ventilator shaft of a Pueblo I pit house at Sacred Ridge (5LP245).

Taphonomic evidence indicates facial destruction, scalping, decapitation, dismemberment, and perhaps hand or foot removal. Human hemoglobin and myoglobin residue on associated artifacts suggest that processing took place in this structure. This study addresses the significance of this feature in regard to the remains of 33 other processed individuals in another pit structure at Sacred Ridge, and the implications of these features for interpretations of Pueblo I pit structure burials.

[237] *Second Organizer [237] Second Chair*

Otarola-Castillo, Erik [3] *see Powell, Hilary J.*

Otis Charlton, Cynthia (Independent Research) [200]
Discussant

Ots, María José [103] *see Cahiza, Pablo A.*

Otten, Sarah [24] *see Baltus, Melissa R.*

Outram, Alan Keith (University of Exeter) and Richard Evershed (University of Bristol)

[126] *A comparison of the middle-range processes affecting sub-fossil, chemical residue and stable isotope evidence, with a consideration of their differing quantitative value within zooarchaeological studies.*
For more than a century zooarchaeologists have developed sophisticated models for understanding middle-range issues such as taphonomy, site formation processes and quantification. Recently developed methods, such as residue analyses, or dietary reconstruction through stable isotope analysis, have clear and direct zooarchaeological implications. However, zooarchaeologists need to develop similar middle-range understandings of these new lines of evidence in order to integrate their results to best effect. Employing examples, this paper considers the very different ways in which these three proxies of animal production and consumption are formed, preserved and sampled, and what the implications are for zooarchaeological quantification.

Overholtzer, Lisa (Northwestern University)

[21] *Los Otomíes en Xaltocan, un caso de cambio étnico*
Según los Anales de Cuauhtitlan, los habitantes otomíes de Xaltocan huyeron con la conquista del estado en 1395, y en 1435 el rey mexica mandó a personas de otras partes del imperio—acoluhas, culhuas, mexicas y otomíes—para repoblar el sitio. Esta presentación expone los resultados de excavaciones domésticas en Xaltocan con fechas anteriores y posteriores a la conquista, e investiga arqueológicamente la relación etnohistórica de un cambio étnico en el Xaltocan Posclásico.

Overly, Stephen (U.S. Bureau of Reclamation), Joanne Goodsell (U.S. Bureau of Reclamation) and Wendy Pierce (Pierce Archaeological Consulting)

[83] *Organizational Implications of Bedrock Mortars: A View from the Stanislaus River Watershed*

Most treatments of bedrock milling stations investigate these features with regard to specific resource use or relative to settlement patterns. This approach is especially evident in California where much of the work focuses on bedrock mortars. The current analysis examines a sample of bedrock mortars considering social implications and more conventional topics using data from Reclamation's New Melones Reservoir in the central-Sierra Nevada foothills. With hundreds of bedrock mortars, at residential accumulations and as isolated work stations, this facility provides a good opportunity to investigate these features in a comprehensive manner.

Ozbun, Terry (AINW)

[160] *Some Observations of the Distribution, Nature, and Traditional Uses of Toolstones in the Pacific Northwest*
A great variety of lithic raw materials used in traditional flaked-stone technologies occur in Pacific Northwestern

North America. However, three main lithological classes (cherts, obsidians, and basalts [or other fine-grained volcanics]) are ubiquitous in prehistoric archaeological assemblages. Primary geological sources for these toolstone classes are differentially concentrated in certain areas. This paper represents an initial attempt to characterize and map the toolstone geography of the region. Studies from major quarry sites illustrate the nature and uses of these lithic materials.

[160] *Second Organizer* [160] *First Chair*

Özkaya, Vecihi [63] *see Grant, Sarah*

Pablo, Marcia [57] *see Lee, Craig M.*

Pace, Meghan (Indiana University of Pennsylvania)
[259] *Necessity Dictates Action: A Brief Introduction to Chinese Salvage Archaeology From an American Perspective*

Around the world, rescue archaeology has changed significantly over time as a result of emergent social perspectives as well as new laws and regulations. Both Chinese and American archaeology have been experiencing a transformation related to their rapid rates of economic development and political involvement; as a result of these changes archaeology has shifted from a research-oriented field to one that is perhaps more problem-oriented. This paper will focus on the differences of salvage archaeology between China and the United States and will explore the progression in both countries that has led us to our current status.

Padilla, Ana (Centro INAH Yucatán)

[14] *La Estructura 1729 "Keyhole- Shaped" De Xamán-Susulá, Yucatán, De Principios Del Preclásico Tardío*
Durante las excavaciones realizadas en el sitio Xamán-Susulá se halló una subestructura de principios del Preclásico tardío. Esta estructura comparte las mismas características arquitectónicas (forma de herradura) a las halladas en sitios como Barton Ramie y Cahal Pech en Belice. Esta evidencia nos sugiere una interacción entre ambas regiones. El propósito de este estudio es hacer un análisis arquitectónico y cronológico de la presencia de esta singular clase de estructuras en el norte de Yucatán y explicar la función posible que pudo haber jugado en el surgimiento de la complejidad socio-política en el norte de Yucatán.

Padon, Beth (Discovery Works, Inc.)

[154] *Public Partnership in Site Preservation: Volunteer Site Stewards in California*

The California Archaeological Site Stewardship Program (CASSP) was started in 1999 with the goal of recruiting volunteers to help protect sites on public lands. Today CASSP has partnerships with the Bureau of Land Management, US Forest Service, National Park Service, and California State Parks. CASSP trains and supports volunteers across the State. Over the past eleven years we have trained over 900 volunteers and conducted over 50 workshops. This presentation describes CASSP, how it has developed and changed, and what this volunteer partnership has brought to California's public lands.

Page, David [180] *see Rhode, David*

Page, James [81] *see RabbySmith, Steve L.* [81] *see*

Prilliman, Keith L.

Pagliaro, Jonathan (Southern Methodist University)
[85] *Refined Methodology for the Investigation of Contextual Influences on Prehistoric Maya Ceramic Assemblages*

Ceramic analysis methodologies used by archaeologists in the Maya Lowlands are commonly used to organize ceramic data, identify assemblage homogeneities and heterogeneities, and infer patterns of socio-economic and political organization. Analytical methodologies currently used to examine prehistoric Lowlands Maya ceramic data, such as the Type-Variety system, oftentimes discount the influence that diversity in social setting, depositional context, and landscape may have upon patterning in pottery production and consumption. This paper intends to examine refined ceramic analysis methodology that will facilitate investigation of the influence that this contextual diversity may have on prehistoric Maya Lowland ceramic assemblages.

[85] *First Chair*

Paglione, Teresa (USDA Natural Resources Conservation Service)

[87] *"Collectors are Complaining about Conservation Tillage"*

A 1979 survey to document archeological sites along the Alabama River resulted in the discovery of hundreds of sites, most of which were in plowed fields. In 1991, there were over 2 million acres of row crops in Alabama; in 2009 this number dwindled to less than half that. Trees and hayfields have replaced cropped fields. This is a good thing for site preservation but now it is harder to relocate old sites or find new sites - or at least requires more time and effort when shovel testing is required.

Pailes, Matthew (University of Arizona)

[106] *Network Analysis of Household Interaction at a Thirteenth Century Hohokam Village*

This research utilizes network analysis to explore household interaction patterns of a prehistoric Hohokam village, Cerro Prieto (ca AD 1150-1300). In this application, groups of habitation structures are treated as nodes and interconnecting walkways as edges. Households are evaluated in terms of their centrality in relation to their neighbors and the larger network. Centrality reflects a node's ability to constrain or direct the social interaction of its neighbors and the larger network. At Cerro Prieto, measures of centrality are correlated with architectural and demographic patterns that are reflective of the material and human capital controlled by households.

Paine, Richard (University of Utah)

[72] *Disease Outbreaks and the Classic Period Decline of Teotihuacan: Testing the Cocoliztli Hypothesis.*

Most theories of Teotihuacan's decline focus on violence, internal or external. Recently, Acuna-Soto and colleagues proposed that epidemics in 1545-48 and 1576-80, which 16th century records refer to as the Huey Cocoliztli, were caused by a hemorrhagic fever of New World origin. They argue further, based on reconstructed drought patterns, that the same disease may have precipitated the decline of Classic period Teotihuacan. This paper tests the Cocoliztli hypothesis. It presents a demographic model a severe disease outbreak,

representing the Huey Cocoliztli, and compares it to the skeletal series from the Tlajinga 33 residential compound.

[72] *First Chair*

Palacios-Fest, Manuel R. [223] *see* Purdue, Louise E.

Palazzo, Antonio [162] *see* Baxter, Carey L.

Palka, Joel (University of Illinois-Chicago)

[200] *Contact Period Maya Shrines and Settlements in Rural Lowland Chiapas, Mexico*

Charlton's historical archaeology has influenced research in rural areas in Mesoamerica. Charlton demonstrated that indigenous culture change from the conquest to the present in the countryside differed qualitatively from urban areas. This presentation covers recent investigations of Maya shrine use in forest communities far from Spanish towns in lowland Chiapas. Archaeology, ethnohistory, and community collaborations have been productive for understanding native culture change over the last 500 years in unconquered Maya territory. The findings suggest that Maya pilgrimage and shrine use was related to indigenous sacred landscapes and identity in contested frontiers rather than ritual continuity and social memory.

Palomo, Juan (University of Arizona)

[225] *The Path of Dead: Deposition of Human Remains in Ceibal*

Excavations in Ceibal exposed a considerable quantity of well preserved human remains. These burials date from Middle Preclassic to Terminal Classic (c. 900 BC- AD 900). Osteological analyses revealed different patterns of burial deposition and few cut marks on the bones, providing a window into the cultural processes that led to their deposition. In addition to the archaeological data from the site, ethnohistory and iconography are referenced to reconstruct possible activities that took place in the areas where burials were recovered.

Palumbo, Scott (College of Lake County)

[93] *Resource Control and the Evolution of the Complex Society in Western Panama*

This paper briefly summarizes perspectives on political economies in Southern Central America and Northern South America before exploring the character of social changes in the highlands of Western Panama. The relatively ephemeral nature of complex society in this region is analyzed, and discussed with reference to broader studies concerning economic production and social organization.

Panich, Lee (Santa Clara University)

[229] *Archaeological Perspectives on the Persistence of Indigenous Identity in Colonial Contexts*

Recent archaeological research in colonial North America is challenging prior assumptions about the nature of indigenous identity and culture change. Rather than simply charting the loss of native cultural traits, many archaeologists are instead carefully examining particular contexts and practices to understand better how native cultures and identities persisted even as they were reinterpreted. Often, this research has developed through close collaboration with descendant communities. In this paper, I will review the growing and

diverse archaeological literature on the persistence of native identity from the perspective of my own research on Spanish colonialism in Alta and Baja California.

[48] *see* Schneider, Tsim D

Panizza, Cecilia [101] *see* Barrientos, Gustavo

Paredes-Umaña, Federico (ATACO Archaeological Project), Margarita Cossich (Universidad de San Carlos, Guatemala) and Hector Neff (Institute for Integrated Research in Materials Environments, and Society (IIRMES) at CSULB)

[8] *Drinking Chilate by the Tomb? A Public Funeral Covered With Ilopango (Tbj) Ash in Western El Salvador.* The Ilopango volcanic ash (TBJ) is ubiquitous in El Salvador's archaeological record. Layers of this white powder usually cover both agricultural fields and public plazas at abandoned civic centers. New data from Ataco, in Western El Salvador may indicate the cultural use of the white ash in a Terminal Classic interment where Preclassic Monuments were deposited as part of the offering. Botanical remains preserved within this context have been identified as corn kernels and pepper (*piper nigrum*), suggesting the ingestion of Chilate, a maize-based beverage still very popular among Salvadorans.

Parezo, Nancy (University of Arizona)

[18] *[Multidisciplinary Archaeology and the Production of Knowledge]*

It is said that great minds think alike. But it is also true that great minds challenge themselves and others by searching for alternative ways of thinking and interpretive frameworks in order to eliminate intellectual blinders and complacency. This search helps scholars gain new insights into cultural processes and cultural history as well as the sociocultural production of knowledge. In this introduction to the session, I will look at how Don Fowler has led the way in this undertaking and provided models for how session participants can assess past, present and current archaeological activities using multidisciplinary and historically contextualized perspectives

[18] *First Chair*

Paris, Elizabeth (University at Albany-SUNY)

[88] *Early Use of Chipped Stone at the Tlacuachero Site, Soconusco, Chiapas*

At Late Archaic period shell mound sites along the Pacific Coast of Chiapas such as Tlacuachero, chipped stone artifacts were extraordinarily scarce. Most of these artifacts are bipolar percussion flakes produced from small ignimbrite nodules from the nearby Tajumulco source, and are particularly associated with clay floor deposits stratified within bedded shell deposits. Some flakes possess edge damage consistent with use as microdrills, and may have been used to produce fishhooks or other artifacts. Such uses of chipped stone technology would be consistent with the role of the site as a seasonal fishing and shellfish processing site for lagoonal resources.

Parish, Ryan (University of Memphis)

[224] *Relationships between Procurement Strategies and Geologic Provenience at the Dover Quarry Sites, Tennessee*

The spatial distribution of prehistoric mining activities at

the Dover Quarry Sites, Tennessee not only gives us insight into behavioral systems but also on the geologic provenience of the chert deposits. Survey data of the quarry sites is presented that emphasizes the relationship between quarrying activities and the variable geographic occurrence of Dover chert. Geologic research of the region gives information regarding the stratigraphic position of Dover chert within the study area. This combined with a detailed survey of the quarry sites reveals the dynamic relationship that prehistoric miners had with the resource and its uneven distribution on the landscape.

Park, Sunmi

[149] *The Buffer Zone Trade in Manchuria and the Korean peninsula c. third century BC to third century AD.*

The ancient Chinese coins have been discovered in Manchuria and the northwest Korean peninsula, where Ko-Choson was historically active, c. third century BC to third century AD. Interestingly there was no influx of those currencies in the southern area of the peninsula. When Ko-Choson collapsed in the first century B.C., the coinage prevailed in the southern area. This suggests that Ko-Choson had some sort of unique form of exchange going on. I used to name this type of exchange as 'Buffer Zone Trade'. I will talk about the trade system, focusing on coins and politics.

Parker, Daniel [3] *see Lin, Sam C*

Parker, Evan (Millsaps College), Stephanie Simms (Boston University) and George Bey (Millsaps College)

[221] *Descending the Stairway to Heaven: The Rapid Abandonment of a Terminal Classic Puuc Hilltop Site*
Excavations at the hilltop site of Escalera al Cielo in the Puuc region of Yucatan, Mexico have uncovered evidence of a rapid abandonment during the late Terminal Classic period. Several elite and non-elite structures in two residential groups contain a rich floor assemblage. Through an analysis of de facto refuse, this paper illustrates how the assemblage characterizes an example of small-scale rapid abandonment and what it suggests regarding the nature of the abandonment. Escalera al Cielo is considered in light of our present understanding of the political history of the Puuc region during the late 9th century A.D.

Parker, John (Archaeological Research), Jim Brown (Elem Indian Colony) and Batsulwin Brown (Elem Indian Colony)

[172] *Where is the "Environment" in the Environmental Protection Agency?*

The EPA's mine waste removal project at the Elem Indian Reservation is presented as just one example of how the EPA ignored Section 106, needlessly destroying 7,900 cubic meters of archaeological resources. Discussed will be the EPA's refusal to stop work when artifacts were encountered, hiring the Tribal Chairman then requesting him to write a positive letter concerning the EPA's activities, then bribing tribal officials with promises of land and denial of permits to prevent them from filing suit for the damage.

[172] *First Chair*

Parkington, John [12] *see Texier, Jean-Pierre*

Parks, Shoshaunna (UNC - Chapel Hill) [268]

Discussant

Parr, Christopher (Panamerican Consultants, Inc.)

[216] *"Well, It's Still Working": The Fort Benning Curation Facility and Lil'Benny after Two Years of Experimentation*
Since 2008, the Cultural Resource Monitor Team has labored to reorganize the curation facility at Fort Benning, Georgia. As the installation was unable to acquire a permanent specialist or a curation management program (i.e. PastPerfect), the team utilized already-existing software to develop an Access-based system so short term employees could manage the collection with minimal training. "Lil'Benny" allows users to accession new arrivals; search the collection at the item-, box-, or project-level; and administer loan agreements. The team continues to improve the functionality of its system, and they are currently developing a manual ("The Benny Book") to assist future users.

[216] *First Chair*

Parsons, Jeffrey (University of Michigan)

[200] *Is Aztec IV Black/Orange pottery Late Postclassic, or Early Colonial, or both, and does it matter?*

Tom Charlton has demonstrated that some Late Aztec pottery types continued to be made and used well into the Colonial period in the Valley of Mexico. Although some Aztec IV Black/Orange pottery was clearly produced after the Spanish conquest, the precise dating of much of this material has remained uncertain, especially regarding how much of it antedates Spanish contact. Several excavations and surveys have revealed ceramic assemblages that contain exclusively Aztec IV B/O pottery without any accompanying Aztec III B/O. These findings, supported by Charlton's earlier studies, indicate that Aztec IV B/O is exclusively Early Colonial in age, and that we may need to revise downward by perhaps 15% our estimates of Late Aztec population.

[21] *Discussant*

Partlow, Megan [177] *see Lubinski, Patrick*

Pastrana, Alejandro (INAH)

[200] *Early Colonial Obsidian Exploitation at the Pachuca Mines*

Esta ponencia presenta los aspectos básicos de la última explotación y el uso de la obsidiana en el desarrollo de la nueva economía novohispana, ante la llegada del metal europeo en el periodo colonial temprano en el México Central. Se explica como se mezclan y complementan los procesos de trabajo y la tecnología prehispánica con la europea, a través de los materiales arqueológicos y de la información etnohistórica.

Pastrana, Alejandro [116] *see Domínguez, Silvia*

Paterson, Judy (University of British Columbia Okanagan) and Karen R. Adams (Crow Canyon Archaeological Center)

[188] *Plant Materials Associated with the Burial Crevice*
Well-preserved uncharred plant materials recovered from the Falls Creek Rockshelter burial crevice included both domesticates and wild plants. Re-examination of these materials both corrected and refined previous identifications. Farmers grew two landraces of

maize/corn (*Zea mays*), two species of squash (*Cucurbita pepo* and *C. moschata*), and (c) gourds (*Lagenaria*). They also harvested and stored wild amaranth (*Amaranthus*) seeds as food or for future planting. And, they split or shredded yucca (*Yucca*) leaves, bulrush (*Scirpus*) stems, lemonade berry (*Rhus*) stems, and juniper (*Juniperus*) bark to serve many daily needs. They fashioned Juniper (*Juniperus*) seeds into beautiful black beads for necklaces.

Pauketat, Timothy (University of Illinois), Danielle Benden (University of Wisconsin) and Robert Boszhardt

[229] *Cosmic Contact in the Upper Mississippi Valley* Studies of historic-era contacts and colonies have focused on negotiations of identities between peoples. Recent excavations at a Precolumbian colony or mission settlement at the Trempealeau site, in Wisconsin, lead us to expand that focus and consider the wider social field involved in this mid-11th century AD episode. The local Effigy-Mound people's encounter with the non-human agents of a new Cahokian religion was probably as significant as their engagement with the intrusive Cahokians themselves. Everything—from chert tools to pots, houses, and hilltop temples—appears to have been keyed to cosmic powers. The long-term historical consequences were potentially dramatic.

Pauketat, Timothy [24] see *Baltus, Melissa R.*

Paul, Burnett [192] see *Todd, Lawrence C.*

Pavao-Zuckerman, Barnet (University of Arizona)
[127] *Discussant*

Pawlowicz, Matthew (University of Virginia)
[228] *Early 2nd-Millennium Ceramics at Mikindani, Tanzania and Implications of Ceramic Differentiation for Swahili Communities*

As communities on the East African coast prospered during the 2nd-millennium florescence of Swahili culture, their local ceramics increasingly diverged. Using new research, this paper explores the implications of such differentiation through examination of the region surrounding the coastal town of Mikindani in southern Tanzania. In the early second millennium the inhabitants of this region began making a variety of ceramics unlike those of the Swahili coast, but similar to ceramics from the interior. Placing this shift within the context of other regional developments demonstrates how it was part of a complex response to changing conditions in the second millennium.

Pazmiño, Estanislao [15] see *Lippi, Ronald D.*

Pearce, Kenny and Paul Jackson (Panamerican Consultants, Inc.)

[195] *Excavation and Documentation of 9ME751 (The Peter Guerry Site)*

Textile manufacturing was one of the few economic niches within the South's slave driven economy of the mid-1850s that utilized free white labor. Surprisingly this operation was run by steam power at the Fall Line Hills of Georgia where most mills utilized the water power that is so abundant in the area. This textile operation was first known as Muscogee Manufacturing and was the brain

child of Peter Guerry Jr. Panamerican was contracted to excavate the Guerry home as well as document the man and his progressive industrialism that he brought to the South.

Pearsall, Deborah M. (University of Missouri)

[111] *Formation Processes of Pollen and Phytoliths* Methods and approaches focused on recovering, identifying, and interpreting phytoliths and pollen are influenced in fundamental ways by known taphonomic processes affecting the deposition and preservation of these microfossils. This paper summarizes our current state of understanding of formation processes affecting pollen and phytoliths in contexts commonly encountered in paleoethnobotanical research: archaeological sediments, artifact residues, and lake and swamp sediments.

[124] see *O'Brien, Meghann C.*

Pearson, Charles [265] see *Weinstein, Richard A.*

Peate, David, W [234] see *Waterman, Anna J.*

Pecci, Alessandra (University of Barcelona) and Miguel Àngel Cau Ontiveros (Institutió Catalana de Recerca i Estudis Avançats (ICREA), ERAAUB, Universitat de Barcelona)

[92] *Organic chemical analysis of plasters as a way of establishing the function of food production structures in the Roman and Late Roman periods*

Oil and wine production formed important aspects of the ancient Mediterranean economy. In the study of their production loci, problems can arise in the interpretation as structures used for oil and wine production are often similar to each other. The chemical analysis of the organic residues absorbed in the floors and in the basins used for the production is therefore fundamental in the interpretation of their function. We present the results of spot-tests and GC-MS analysis on plasters used to coat basins belonging to food production structures found in Roman and Late Roman sites in the Mediterranean area.

Pecci, Alessandra [92] see *DOMÍNGUEZ-BELLA, Salvador*

Pecoraro, Luke (Boston University), Thomas P. Leppard (Brown University), John F. Cherry (Brown University), Krysta Ryzewski (Brown University) and Elizabeth Murphy (Brown University)

[163] *Using a GIS framework in Caribbean landscape archaeology: Survey and Landscape Archaeology on Montserrat 2010*

This poster presents results from fieldwork undertaken in 2010 on Montserrat, West Indies. Over a seven week period eighteen sites and ninety features, both prehistoric and historic, were recorded. Subsequent manipulation of these spatial data within a GIS framework highlights the utility of integrating digital spatial technologies into a research design from its inception. This poster introduces the long-term research goals of SLAM and presents initial results from pedestrian survey and test excavation. It also demonstrates the capacity of on-the-fly data integration to inform evolving research goals and refine existing methodologies. For example, suggesting the existence of strong patterning with regard to Late Ceramic Age settlement and hence guiding targeted

intensive survey on a day-to-day basis, and facilitating real-time collaboration with Monserratan GIS analysts. This approach renders cultural heritage data available to a broad group of stakeholders to better anticipate imminent threats to the archaeological resource.

Pederson, Joel (Utah State University) and Gary O'Brien (Utah State University)

[20] *Relating the dynamic changes of the Colorado River to 6000 years of human occupation through geoarchaeologic investigations at nine sites along the length of Grand Canyon*

Intensive geomorphic and chronostratigraphic investigations have accompanied archaeological excavations in recent BoR treatment along the river corridor. This has revealed a record spanning the entire Holocene, constrained by scores of OSL and radiocarbon ages. To link the riverine paleoenvironmental record to settlement patterns and the preservation and erosion of cultural sites, we have focused on the key distinction between: a) changing paleoflood activity over centuries; and b) overall canyon-bottom aggradation and incision over millennia. We propose here that there are indeed characteristic paleolandscape contexts associated with distinct Archaic, Formative, and Protohistoric cultural sites along the river corridor.

Pedler, David [29] *see* Byrnes, Allison M.

Peebles, Christopher [82] *see* Baumann, Timothy E.

Peebles, Matt (Arizona State University)

[264] *Ceramic Technological Variation and Social Change across the Pueblo III to Pueblo IV Transition*
Using data from the Cibola region, along the traditional boundary between the Ancestral Puebloan and Mogollon culture areas, I apply a quantitative method for exploring variation in the techniques used to produce corrugated pottery across the Pueblo III/Pueblo IV transition. In contrast to past studies based on typological analyses, I suggest that patterns of technological variation do not support the delineation of discrete boundaries between distinct social groups. Instead, I argue that technological variation was gradational and potters generally made vessels most similar to that of their closest neighbors. Exceptions to this pattern may provide evidence for migration.

Peebles, Matthew [36] *see* Trask, Garrett L. **[134]** *see* Schachner, Gregson

Pelt, Ezra (San Juan College)

[219] *An Early Navajo Ceremonial Rock Art Panel in Stewart Canyon on the B-Square Ranch*

A small rock alcove on the east side of Stewart canyon exhibits a panel of five early Navajo incised ceremonial beings. This study investigates the significance of the anthropomorphs as to their special meaning within Navajo sacred stories and ceremonies. All exhibit headdresses and are holding wands, rattles, or other ceremonial objects. One of the ceremonial beings is believed to represent a female figure. I will compare this panel with other early Navajo rock art from the Middle San Juan area and investigate possible connections between the rock art of Ancestral Pueblos and early Navajo people.

Peña, Agustín [14] *see* Ceballos Gallareta, Teresa Noemi

Peniche May, Nancy (UCSD)

[14] *Preclassic Public Architecture in a Secondary Site of Northwestern Yucatan: Structure 1714 of Xamán Susulá*
As public architecture embodies and expresses asymmetrical social relations, it has been argued that public buildings are useful to study sociopolitical complexity, even in emergent complex societies. This is also true when we focus on public architecture of secondary sites in the regional settlement pattern. This paper has as goal to study the characteristics of the sociopolitical organization of an emergent complex entity in northwestern Yucatan during the Preclassic through the analysis of a public building in a middle-rank site - Structure 1714 of Xamán Susulá-, in conjunction with the architectural arrangement of the site and the regional settlement pattern.

[14] *Second Organizer*

Penny, Dan (The University of Sydney)

[90] *Did maladaptive water management sensitize Angkor to the impacts of climate variability?*

By the end of 12th century C.E., Angkor had expanded to become one of the largest settlements on Earth, facilitated in large part by the use of a networked water management system that was at once massive and intricate. This paper argues that the iterative growth of this system gradually restricted or removed alternative strategies for managing resources, leaving the settlement uniquely exposed to the impact of the 'mega-droughts' that would develop in the 14th and 15th centuries.

Perales Munguía, Manuel [106] *see* Authier, Martin T.

Peraza Lope, Carlos [56] *see* Serafin, Stanley

Perdikaris, Sophia

[202] *Obeah Ritual Activity in the Caves of Barbuda*
A survey of the caves of the windward side of Barbuda was undertaken during the 2010 season of the Barbuda Historical Ecology Project. This survey uncovered numerous indications of human activity within these caves. Perhaps the most interesting was one cave where the faunal remains, the artifacts, as well as the structure of the cave itself strongly suggest ritual activity taking place in both the pre and post-emancipation period.

[202] *First Chair*

Pereira, Carla (California State University, Long Beach)

[207] *Transmission Patterns among Late Prehistoric Potters of Mississippi River Valley Ceramics*

The most common means of measuring patterns for ceramic artifacts are stylistic descriptions focusing on decorative markings and method of manufacture. However, stylistic descriptions and analysis of the temper are not traditionally investigated. By examining the variation in size and shape of shell temper particles over time and space in late prehistoric Mississippian ceramics we can establish patterns of prehistoric transmission and manufacturing practices.

Pereira, Carlos [5] *see* Day, Zachary R.

Pereira, Gregory (CNRS-Université de Paris I)

[41] *The utilization of pyrite mirrors during the early classic period: a contextual perspective*

Mirrors constitute a recurrent element in Teotihuacan iconography, particularly depictions of ritual paraphernalia. These representations clearly allude to the numerous pyrite mosaic mirrors that have been discovered in diverse archaeological contexts at Teotihuacan, as well as in other regions where the center's influence extended. In this presentation, we attempt to clarify the ritual usage of these objects based on a detailed analysis of the contexts in which they were recovered. We also compare the Teotihuacan data with findings from the Maya highlands of Guatemala in order to understand how these objects were integrated within these two contemporaneous societies.

[58] *see Michelet, Dominique*

Perez, Don (EBI Consulting)

[243] *Petrographic Analysis of Potsherds from the Ancient Maya Site of Copan*

Petrographic analysis entails the microscopic observation of ceramic materials in thin section. Although often used to address issues of material sourcing, it can be a means of investigating pottery production. Analysis of a small sample of potsherds from the ancient Maya site of Copán indicates that the ceramic fabrics can be classified into types based upon the relative abundances of fine volcanic ash and mineral grains. These fabric types reflect divergent methods of making vessels. Combining fabric type classification with that of type-variety may provide insights into production trends from the Proto-Classic through the Classic period at Copán.

Perez, Gregorio [128] *see Maca, Allan L*

Perez, JoEllen (Utah Valley University), Haagen Klaus (Utah Valley University), Joseph Luce (Utah Valley University), Fausto Saldaña (Museo Nacional de Arqueología y Etnografía Heinrich Brüning de Lambayeque) and Carlos Wester (Museo Nacional de Arqueología y Etnografía Heinrich Brüning de Lambayeque)

[156] *Sacrifice as an act of creation: generative violence and ritual killing of women and children at Chotuna, Lambayeque Valley, Peru (A.D. 1375-1532).*

Violent sacrifice and mutilation of children in pre-Hispanic Peru is a phenomenon only recently studied, and ritual killing of adult women is even less understood. Here, we present findings from the multidisciplinary study of human sacrifice at Huaca Norte (Chotuna Archaeological Complex, Lambayeque Valley) during Chimú and Inka occupations. We describe evidence of throat slitting and heart removal among subadult and female victims, explore the identity of sacrifice victims and sacrificers alike through patterns of ritual mutilation, burial practice, health, and genetic structure to address questions about local Muchik late pre-Hispanic identity and Chimú and Inka statecraft.

Perez, Ventura (University of Massachusetts Amherst) and Peter Jiménez Betts (Instituto Nacional de Antropología e Historia)

[237] *The Taphonomy of a Sacrifice: Burial 6 of the Patio*

Hundido at el Teul.

El Teul's eighteen centuries of continuous occupation, from ca. 200 b. c. e. till the Spanish conquest in 1531 offers a unique opportunity to understand aspects of ancient society in Southern Zacatecas. This poster focuses on a ritually-sacrificed male whose body was deposited as an offering in one of the main architectural complexes of the site during the early to mid-Classic (ca. 200 d.C. – 400/450 d.C.). Ritual landscape models currently applied to larger sites such as Teotihuacán using Huichol cosmology suggest the possible correspondence of this building with ritual sacrifice related to winter solstice with Venus playing an active role.

[1] *Discussant*

Perez Martinez, Gregorio (PAPAC, Copan) and Allan Maca (Colgate University)

[128] *Ethnographic archaeology and community collaboration in Ostuman, Copan*

This paper addresses two current realities of living in and doing archaeology at Copan, Honduras: 1) destruction of archaeological sites due to looting and urban expansion and 2) the need for community collaboration for archaeology and long term conservation. The Copan Urban Planning Archaeological Project (PAPAC) addresses these realities with a pilot ethnographic study that works with an indigenous sub-community to understand attitudes regarding the surrounding ruins and the community's role in a new indigenous Maya movement in Copan.

Perez Rodriguez, Veronica (Northern Arizona University)

[67] *Residential patterns, spatial configuration, and terrace density: A comparative study of houses on terraces in Mesoamerica*

This paper presents data on terrace morphology, spatial configuration, and residential density from Cerro Jazmín, Oaxaca. The data are contextualized in a comparative study of other terraced sites in Mesoamerica (Oaxaca, Central México, and the Maya region) as patterns of terrace spatial configuration, residential density, and house-to-terrace ratios are explored. Research finds speak of regional variation and shared trends in residential area configuration and the construction and use of landesque capital in the form of terracing in a diversity of environments.

[67] *First Chair*

Perez Roman, Paulo Cesar [95] *see Ramon Celis, Pedro Guillermo*

Perlingieri, Cinzia [3] *see Ashley, Michael*

Peros, Matthew, Samuel Munoz (University of Wisconsin, Madison), Konrad Gajewski (University of Ottawa) and Andre Viau (University of Ottawa)

[72] *Prehistoric demography of North America inferred from radiocarbon data*

We use more than 25,000 radiocarbon dates from the Canadian Archaeological Radiocarbon Database (CARD) to estimate long-term population trends in North America. The frequency distribution of dates shows a positive curvilinear pattern, which reflects the removal of cultural carbon from the archaeological record through erosion

and dissolution. The average growth rate of radiocarbon dates was calculated and used to derive estimates of the population of North America from the Paleo-Indian to the Contact Periods. While taphonomic bias has likely affected the data, the overrepresentation of Paleo-Indian and Archaic radiocarbon dates may have offset any bias due to taphonomy.

Perry, Elizabeth M [83] *see Hurley, Warren FX*

Perry, Jennifer (Pomona College) [11] *First Chair [123]*
Second Organizer [48] *First Chair*

Perry, Laureen (Bureau of Reclamation, Lower Colorado Region), BranDee Bruce (Bureau of Reclamation, Mid-Pacific Region) and Adam Nickels (Bureau of Reclamation, Mid-Pacific Region) [83] *The Industrial Archaeology of Reclamation Dams: A Look at Shasta Dam, Folsom Dam, and Hoover Dam*
Hidden beneath the fill, drowned by the reservoirs, buried within the woods, the history of Reclamation's dams reveals the ingenious engineering efforts and extensive construction activities involved in these major industrial accomplishments. Ongoing maintenance activities, receding lake levels, and expansion and improvements to meet modern needs are revealing the sum of the parts that went into construction of Reclamation's dams. We present a look at the industrial archaeology of Shasta, Folsom, and Hoover Dams and discuss the consideration of these resources as large-scale, complex archaeological resources.

[83] *Second Organizer [83]* *First Chair*

Pestle, William (Lake Forest College), L. Antonio Curet (Field Museum of Natural History), Miguel Rodríguez López (Centro de Estudios Avanzados de Puerto Rico y el Caribe) and Reniel Rodríguez Ramos (Universidad de Puerto Rico en Utuado) [204] *What's a Cuevas? Chronology and Cultural Diversity in Later Saladoid Puerto Rico*

As traditionally defined, Cuevas, the terminal style of the Cedrosan Saladoid in Puerto Rico, lasted from 400-600 ad (uncalibrated). We present here the results of recent AMS dating of Cuevas burials from the site of Punta Candelero along with a critical re-assessment of numerous ¹⁴C dates for Cuevas assemblages from sites across the island. Taken together, these findings dramatically expand the temporal horizons of the Cuevas style, call into further question the validity of the dominant regional cultural chronology, and raise major issues regarding cultural change and plurality among the Ceramic Age peoples of Puerto Rico.

[204] *First Chair*

Pestle, William [152] *see Torres-Rouff, Christina*

Peters, Ann (University of Pennsylvania Museum) and Elsa Tomasto C. (Pontificia Universidad Católica del Perú)

[71] *Revisiting the Ancestors: body custody and symbolic construction*

Debate on the centrality of ancestor cults in structuring political institutions -and archaeological sites- has led to provocative proposals and questions requiring detailed research. We here define criteria for assessing significant social relationships between the living and the dead at

the Paracas site of Andean South America, based on evidence for curation and interaction with human remains. Whether termed trophy, relic, hero or ancestor, viewed as image, tomb or mummy bundle, relationships with the dead may involve possession, narration, preservation and reconstruction. We must consider the agency of the dead, as well as the politics of the living.

Peters, Joris [42] *see Vohberger, Marina A.*

Peterson, Cynthia [133] *see Dahlstrom, Kristy*

Peterson, David [63] *see Meredith, Clayton R. [63]* *see Rauh, Whitney D.*

Peterson, Elizabeth (University of Tulsa)

[6] *Used or not Used? Use Wear on Projectile Points From the Casas Grandes 2008-2010 Excavation Season*
Part of the larger study of the Medio period in Casas Grandes, I conducted a usewear analysis of the points from recent excavations. The projectile points recovered were small, made of obsidian or chert material with little or no damage, strange considering that one would expect to find more broken/reused points. This is a common theme throughout the Pueblo Southwest. This suggests that these points were used for ritual/decorative purposes. To ascertain this, I conducted a low power use wear analysis on the points, looking for surface damage indicating their use, a study not conducted before in this area.

Petraglia, Michael [74] *see CRASSARD, REMY*

Petrich-Guy, Mary (University of Idaho)

[175] *What's Hot, What's Not?: Public Archaeology in the Inland Northwest*

Public education is an important component of historical archaeology, borne from a consensus that contemporary communities should benefit from archaeological research. This work is inspiring many forms of interpretation and outreach; from 'public archaeology days' at sites to regional education networks like Project Archaeology and the Florida Public Archaeology Network. One region where outreach efforts are noticeably lacking is the Inland Northwest. This paper reviews systems of outreach in the northwest, the necessity of assessment for public benefit, and where the region's archaeological community can go from here.

Pettitt, Paul [142] *see Rockman, Marcy*

Peuramaki-Brown, Meaghan (University of Calgary)

[40] *Ancient Maya Civic Integration: The case of Site 007 at Buenavista del Cayo, Belize*

What were ancient Maya neighbourhoods and districts? How were such entities integrated into larger civic centres? When civic decline occurred, how did this affect the integration of a neighbourhood? This paper examines the function of potential community-focused administrative buildings and/or civic-sponsored residences outside Maya epicentres and considers the case of one such potential settlement site at the Classic Period civic-ceremonial centre of Buenavista del Cayo, Belize. I will present the emergence, development and denouement of this settlement site and consider its possible role in the life-history, identification, and

integration of a site core neighbourhood and district.

[40] *First Chair*

Pevny, Charlotte (Center for the Study of the First Americans, Texas A&M University)

[120] *Clovis Biface Reduction Debitage*

In recent years, diagnostic characteristics of Clovis blade technology and associateddebitage have been suggested, but less attention has been afforded todebitage produced during bifacial reduction. This paper explores the question, "Are there flake attributes specific to Clovis biface technology?" Individual and aggregate flake analyses were used to examine Clovisdebitage from a quarry-camp site on the Southern Plains and to determine if there were diagnostic technological traits allowing confident assignment to the era. To test whether Clovisdebitage is distinctive, it was compared todebitage from later cultural components at the site.

Pevny, Charlotte [59] *see Wiederhold, Jim*

Pezzutti, Florencia (Colorado State University) and Christopher Fisher (Colorado State University)

[58] *"There is a place where the sidewalk ends and before the street begins": An analysis of Sacapu Angamucu Transit Networks*

Prehispanic built environments are an expression of how humans created and defined spaces on the landscape. The built environment documented at the site of Sacapu Angamucu in the Lake Pátzcuaro Basin, Michoacán, Mexico, has provided evidence of three levels of interaction: intra-household, intra-site, and inter-regional. Here I analyze the roads, paths, and trail systems documented at Sacapu Angamucu, and I compare them to hypothetical routes at multiple scales to test the potential use of GIS least-cost path analysis as a prediction tool of prehispanic routes in the region.

[58] *Third Organizer*

Phillipps, Rebecca [22] *see Holdaway, Simon J.*

Phillips, Bruce G. [223] *see Purdue, Louise E.*

Phillips, Sara (University of West Georgia)

[156] *Foreign fighters and civilian casualties: differentiating armed combatants and civilians in Peru's human sacrificial record*

Human remains from the Moche site of Huaca de la Luna and the Chimu-era site of Punta Lobos show evidence of ritual violence. In both cases there are males with evidence of sharp-force trauma and ligature restraint, yet context suggests very different events. An analysis of both ante- and perimortem trauma in these collections reveals significant differences in their pattern of fracture, suggesting the Moche males had a history of armed combat in the years and weeks prior to their deaths, while the Punta Lobos victims show almost no evidence of fractures suggestive of prior experience with interpersonal violence.

Phillips, Stephen (University of Washington)

[7] *Lithic Technological Strategies and Early Island Colonization in the Kuril Islands of Far Eastern Russia*
For the earliest colonizers of new environments, initial conservation of lithic raw materials is an adaptive risk-reduction strategy when information about resources is

limited and experience in the new environment is low.

This is the situation initial colonizers of the Kuril Islands in the North Pacific Ocean would have found themselves during early migrations from Japan into the central part of the island chain around 3000 BP. This study provides an analysis of the Kuril Island lithic assemblage for evaluating behavioral models related to the curation of lithic technology and changes in technological strategies detected in the Kuril archaeological record.

Picha, Paul (State Hist Soc of North Dakota)

[211] *Berlin, Vansina, and Washburn Revisited: Color, Cognition, and Symmetry in the Mandan Archaeological Record*

The material and mental are embedded in the Mandan archaeological record of the Missouri River valley. Interdisciplinary contributors—Brent Berlin (color terminology and folk taxonomy), Jan Vansina (culture as cognitive reality), and Dorothy Washburn (embedded symmetry)—each provide a general framework suitable to investigating Mandan culture history. Conjoining natural and cultural elements in ceremony was recognized by George Catlin in his writings and accompanying artwork on the Mandan Okipa ceremony. The eastern tent caterpillar (*Malacosoma americanum*) is an example of duality and cognition expressed as culture. Combining the three methods in a unified application reveals the complexity of Mandan adaptation.

Pickard, Catriona [255] *see Bonsall, Clive*

Pickering, Sean (University of Calgary) and Peter Dawson (University of Calgary)

[159] *Continuity and change in southern Kivalliq land use patterns, and their implications for the emergence of Caribou Inuit Culture.*

One of the defining features of Thule culture is a complex, coastally focused subsistence-settlement system structured around logistical mobility. The development of the Caribou Inuit cultural pattern seems to represent a repurposing of this strategy to inland locations, where caribou herds were intercepted at important river and lake crossings. In this paper, we evaluate the idea that this repurposing reflects the continuation of important Thule cultural values into the historic period, and the consequences this may have had for cultural resilience in a changing arctic environment.

Pierce, Wendy [83] *see Overly, Stephen A.*

Pierce Terry, Stephanie [227] *see Quave, Kylie E.*

Pierre, Tracey [11] *see Johnson, John R.*

Pietruszewski, Samantha (Brandeis University)

[89] *A Formal and Functional Analysis on the Ceramic Rims of the Little Midden Site (8BR1933): An Identification of Site Function*

The Indian River Culture of Florida is often classified as a simplistic, transitional archaeological zone between the St. Johns Culture Area, to the north, and the archaeological cultures of South Florida. Although such a portrayal is not commonly questioned, evidence from Little Midden, a Malabar Period (3000 B.P.- A.D. 1565) occupation on the coast of the Indian River Culture area, suggests otherwise. This paper examines, through the

use of ceramic analysis and models of site functions, the idea that not all sites within the area can be classified into the typology developed for the area.

[89] *see Horlings, Rachel L.*

Pihl, Robert (Archaeological Services Inc.), Jennifer Birch (University of Georgia), Aleksandra Pradzynski (Archaeological Services Inc.) and Robert Wojtowicz (Archaeological Services Inc.)

[55] *Multi-scalar perspectives on Iroquoian ceramics: A re-examination of the West Duffins Creek site sequence*
During the late precontact period, small Iroquoian village communities in south-central Ontario came together into large village aggregates of unprecedented size. Our analyses of ceramic collections from one site relocation sequence have produced new insights into the social and temporal relationships between these villages during this period of community coalescence. In this paper we evaluate the strengths and limitations of using ceramic design sequences to interpret changes in local socio-political organization, and suggest that more synthetic research is required in order to understand the relationship between local and regional variation in ceramic design in the Lower Great Lakes region.

[55] *First Organizer*

Pilaar Birch, Suzanne (University of Cambridge)

[205] *Reconciling Seasonal Data from Zooarchaeological and Stable Isotope Analyses: A case study from the Northern Adriatic*

The combination of zooarchaeology and stable isotope analysis has the ability to produce a robust dataset with which to examine human seasonal mobility in the past. This paper applies these two methodologies to study seasonality during the transition from post-glacial foraging lifestyles at the Pleistocene/Holocene boundary to the rise of sedentary agricultural communities in the Neolithic. The cave sites of Pupicina, Nugaljanska, and Vela Špilja in the Northern Adriatic are presented as case studies. In addition to discussing archaeological results, the paper considers how well the zooarchaeological and isotopic data complement-or complicate-interpretation of seasonal occupation at prehistoric sites in general.

[205] *First Chair*

Pilco Vargas, René [227] *see Quave, Kylie E.*

Pillsbury, Joanne (Dumbarton Oaks)

[125] *Architecture and Ritual on a Lambayeque Vessel*

It has been a truism in north coast archaeology that narrative imagery ceases with the end of Moche, replaced by a visual style that emphasized repetitive decorative patterns. This change in the mode of representation has meant scholars have had a more limited view into the elusive practices and beliefs of later north coast societies. Yet recent research suggests a narrative tradition continued, offering a richly informative window into ritual practices, particularly the presentation of goods within carefully defined architectural spaces. These representations open up new potentials for understanding the use of specific building types.

Pinhasi, R. [114] *see Adler, Daniel S.*

Pink, Christine (The University of Tennessee) and Danielle Kurin (Vanderbilt University)

[245] *Beyond the grave: Continuity among Chanka populations in the Andahuaylas Province, Peru.*

This study focuses on several skeletal populations dating to the Middle Horizon (AD 600 – 1000) through the Late Intermediate Period (AD 1000-1400) recovered as part of the Proyecto Bioarqueológico Andahuaylas. The sample is comprised of individuals that, according to the ethnohistorical record, likely identified ethnically as Chanka. Population genetic tests address biological affinity of individuals between mortuary contexts and over time. The results have important implications for our understanding of mortuary ritual as it is linked with social organization, and the effects of the collapse of the Wari on the genetic structure of a regional population.

Pinkston, Erin (UC Berkeley)

[28] *Symbolism of the Skull: A Case Study of Significance of Human Heads in Maya Termination Rituals*

In the Mesoamerican worldview, a variety of beings are privileged with souls. Outside of humans, both animals and various key inanimate objects, including plants and architecture, are entitled to "ensoulment". I would argue here that due, in part, to their participation in this worldview, the ancient Maya practiced similar burial rituals for humans and termination rituals for architectural structures. I will further argue that these similarities are more striking when analyzing the repeated skull/head symbolism in both, specifically at the site Colha in Belize.

Pinson, Ariane (University of New Mexico & Central New Mexico CC) [215] *Discussant*

Pintar, Elizabeth (ACC), Jorge Martínez (Instituto de Arqueología y Museo-Universidad Nacional de Tucumán, Argentina), Michael D. Glascock (University of Missouri-Columbia) and Jorge Funes (Instituto de Arqueología y Museo-Universidad Nacional de Tucumán, Argentina)

[142] *Obsidian Sourcing and Mobility Strategies in a High Elevation Desert in NW Argentina*

This paper explores the relationship between obsidian acquisition and mobility strategies in the Salt Puna throughout the Altithermal (ca. 8000 – 6000 BP). XRF analyses were performed on 27 obsidian tool samples from Cueva Salamanca and Peñas de la Cruz. The results reveal the use of five obsidian sources distant 90km from these sites. We will discuss how this data throws light on obsidian acquisition, production and consumption prior to the better known studies of obsidian distribution networks of the Late Holocene and Formative in the Puna, and will compare these strategies to those of other prehistoric desert people.

Pinter, Teresa [83] *see Stokes, Robert J.*

Piperno, Dolores [88] *see Kennett, Douglas J.*

Piro, Jennifer (Smithsonian Institution) and Sheel Jagani (University of California, Berkeley)

[152] *Animals and mortuary practices in the ancient polity of Dilmun (Bahrain) from the late 3rd millennium BCE to the end of the 1st millennium CE*

This paper presents the analysis of animal bone remains from human burials excavated by Peter B. Cornwall in Bahrain in the 1940s. Materials in the Cornwall Collection

(Phoebe A. Hearst Museum, UC Berkeley) date from the late 3rd millennium BCE to the 10th century CE, and represent a variety of mortuary contexts, including single and multiple interments. By integrating zooarchaeological and human osteological data, the paper will examine how the nature of the relationship between animals and humans as viewed in mortuary practices may provide insight into broader notions of religion, status, and identity and their transformation over time.

Piscitelli, Matthew (University of Illinois-Chicago / The Field Museum)

[163] *Intensive Predictive Mapping of Surface Topography at Three Late Archaic Sites in the Fortaleza Valley, Peru*

High-resolution maps of surface topography can serve as predictive tools for locating areas to excavate. The purpose of this study is to present recent intensive mapping conducted at three Late Archaic (3,000 – 1,800 B.C.) archaeological sites in the Fortaleza Valley, Peru and to use these data as a baseline for making comparisons with previously mapped and excavated residences. Total Station data will be used to generate 3D surface maps in ArcGIS that delineate elevation changes in fine-grained detail. Distinctive features on the surface will help define unique archaeological signatures for future, more targeted excavations of households.

Pitblado, Bonnie (Utah State University), Molly Boeka Cannon (Utah State University) and Benjamin Fowler (Utah State University)

[262] *Predictive Modeling of the Paleoindian Record in Southeastern Idaho and Northern Utah*

Utah State University archaeologists have worked for the past several years to identify and document Paleoindian sites in the ecotone region of southeastern Idaho and northern Utah. In an area spanning nine counties and four converging environmental zones, what began as a handful of documented Paleoindian localities has blossomed to about 75 thanks to collaborations with local landowners. We now have a sufficiently robust sample of Paleoindian sites to create a preliminary predictive model to guide systematic survey. We overview the variables invoked to create the model and identify areas where we will test it with summer 2011 field reconnaissance.

[130] *Discussant*

Pitts, Karin and Kristina Gill (University of California, Santa Barbara)

[150] *Modeling Small Seed Efficiency as a Food Source in the South Coast Range*

Ethnohistoric records discuss the use of *Salvia* as a preferred small seed plant resource in prehistoric California. Known to have high nutritional values, *Salvia columbariae* (Chia) and *Salvia mellifera* (Black Sage) are abundant in the South Coast Range but remain poorly understood as a food source. Experimental archaeology and the Diet-Breadth Model are applied to this issue to shed light on how an increase in population in these areas may have responded to them as a food.

Plank, Shannon [128] *see Maca, Allan L*

Platt, Steve [113] *see Alegria, Crystal B.*

Platz, Lorelei (University of Calgary)

[183] *Early Changes in the Ceramic Sequence within Nicaragua: An Examination of the Tempisque and Bagaces Periods*

The Tempisque and Bagaces periods in Nicaragua contain distinct types of ceramics that have not been greatly researched. The site of La Arenera corresponds to the Tempisque period, while Las Delicias is thought to be part of the Tempisque-Bagaces transition. Ceramics and Radiocarbon dates from La Arenera are compared to the Las Delicias site. There are key types of ceramics that are found at the beginning and end of the Bagaces period but are not continuous or continuations from the earlier Tempisque period. The purpose is to determine if Bagaces warrants subdivisions into smaller periods based on the ceramics.

Plimpton, Christine

[246] *The Origin of Egyptian House Space Permeability Pattern*

Syntactic analysis performed on Egyptian dwellings from the Old Kingdom to the present revealed grammar constancy in space permeability (access patterning). The two grammar rules discovered (symmetric:nondistributed and asymmetric:nondistributed) restrict the movement of people within the dwelling. This analysis concentrates on determining the origin of the enduring restrictive grammar patterns in house permeability. Although data on dwellings are often limited in description for the periods preceding the Dynastic, it appears that the restrictive grammar rules emerge in the Archaic period with the formation of the Egyptian state.

Pliska, Janine (Pennsylvania State University)

[51] *Chiefdom Development at Cerro Juan Díaz: a Mortuary Analysis*

The archaeological site of Cerro Juan Díaz, on the Pacific coast of Panama, (200 BC to AD 1600) has produced over four hundred human remains from a formal cemetery that was continually used throughout the site's occupation. The arrangement of the graveyard, as well as skeletal analysis, provides an excellent opportunity to compare social structure before, during, and after the formation of a chiefdom-level society (at approximately AD 500). Analysis of trends in diversity and type of burials in the period before the emergence of the chiefdom help clarify from what social relationships stratified hierarchy developed.

Plotzki, Anna [124] *see Lombardo, Umberto*

Pluciennik, Mark (University of Leicester)

[122] *Authoritative and ethical voices: from diktat to dirigisme*

Should archaeologists and historians simply be conduits for putting 'data' about the past into play for various language communities, or do the forms of their interventions have more potent, more subtle and potentially political implications? What might alternatives mean for different groups of archaeologists? This paper explores some of the issues surrounding authority and ethics in archaeological representations. Given recent moves towards more inclusive and differently-constituted archaeologies and archaeological texts, it asks whether the widespread recognition of the rights (and responsibilities) of readers as interpreters and translators fundamentally shifts the ethical duties and

epistemological requirements of ourselves as archaeologists.

[130] *Discussant*

Plumer, Hannah (Brandeis University)

[75] *Burial Variabilities in the Maya Lowlands*

This paper will analyze structural variability between burials among the ancient Maya (250CE-900). It will also investigate the underlying social dimensions for these variations. The study encompasses the southern lowland, with particular attention to western Guatemala, the southern Yucatan Peninsula, and Belize. The analysis of mortuary contexts, will be based mostly on meta-analysis of osteological and related materiality, such as offerings, burial contexts, and the construction of the burials themselves.

[75] *First Chair*

Plunket, Patricia [98] *see Urunuela, Gabriela*

Podrug, Emil [106] *see Teoh, Melissa L.*

Poeppel, Emily (Indiana University of Pennsylvania)

[65] *An Analysis of Ceramics from the Johnston Site, Indiana County, Pennsylvania*

During field seasons in 2008 and 2010, the Indiana University of Pennsylvania archaeological field school excavated the Johnston site, 36IN2, in Indiana County, Pennsylvania. Originally excavated by Carnegie Museum archaeologist Don Dragoo in the 1950s, this stockade village site is the type site for Johnston Phase of the Late Prehistoric Monongahela culture. The analysis of rim decorations and shapes provide information on connections between the Johnston site and other regional cultures. This poster summarizes the results of the analysis of the rim styles for rim sherds found during the excavations.

Pohl, John (UCLA)

[98] *Anthropomorphic Imagery in the Nahua-Mixteca Style of Highland Mesoamerica*

Archaeological research has demonstrated that the foundation of the Nahua-Mixteca art style lies in the Epi-Classic cultural traditions of Plain of Puebla, particularly Cholula. Eventually the style was adopted as an international form of communication by as many as fifteen different language groups extending throughout the southern Mexican highlands as well as coastal West Mexico. The anthropomorphic imagery that characterized the style and an analysis of its significance will be examined through three centuries of its development and spread.

[157] *Discussant*

Pohl, Mary (Florida State University) [157] *Discussant*

[157] *see Collins, Lori D.*

Poinar, Hendrik N. [72] *see Devault, Alison M.*

Politis, Gustavo (CONICET- UNCPBA- ARGENTINA) and Luciano Prates (CONICET- Museo de La Plata)

[213] *Data base on Late Pleistocene-Early Holocene archaeological site from Argentina.*

During the last decades Argentinian archaeology has generated a large body of information which has fuelled current debate on the early peopling of the Americas.

This paper presents a comprehensive archaeological radiocarbon database of early (older than 8,000 years BP) Argentinian sites. In this country 48 sites were excavated; providing 130 radiocarbon dates. Earliest accepted human signal is dated around 12,175 yrs BP, while earliest human bone dated is ca. 10,300 yrs BP. We examine the spatial and temporal distribution of the radiocarbon dates and discuss potential environmental/sampling biases affecting the record of human occupation for each region of Argentina.

[213] *First Chair*

Pollard, A.M. [203] *see Good, Irene*

Pollock, Sarah (Mills College) [122] *Discussant*

Polson, Nikki (US Army Corps of Engineers)

[256] *Learning from the past: a double meaning*

The archaeology of the Sacramento River watershed was subject to early excavations by archaeologists and avocationalists alike. Now many of their collections form some of the most spectacular and rarely used collections in curation facilities across the state. Here I look at the problems and opportunities associated with studying old collections, focusing on the status of collections made at CA-Sac-16/H from the mid-1930s until the demolition of the mound in the early 1970s. Although the upper layers of the mound are now gone, the existing collections can be used to address modern questions and issues.

[256] *First Chair*

Pomerleau, Monique (USU Museum of Anthropology)

[57] *High Altitude Prehistoric Occupation at Pharo Heights in Central Utah's Pahvant Range*

Recent excavations at Pharo Heights, a subalpine hunter-gatherer residential site at 9600 ft in Utah's Pahvant Range, indicate substantial resource intensification characterized by a highly diverse assemblage. Chronological data indicate site occupation is contemporaneous with early occupations of Pharo Village, a Fremont hamlet two miles downslope. Resource intensification at high altitude locales during the Formative Period questions the relationship between environmental and social factors and how such factors affect hunter-gatherer and part time agriculturalist decision making.

Pool, Christopher (University of Kentucky) [116]

Discussant [116] Second Chair [193] see Jaime-Riveron, Olaf

Pool, Michael (Austin Community College) and Michael McGuirt (California Energy Commission)

[136] *Agricultural Degradation and the Geoarchaeology of Upper Cameron Creek, NM*

Many researchers attribute the major population decline of the Mimbres Classic Period to subsistence stress resulting from a climatic downturn (decreased precipitation), overpopulation, and/or environmental degradation. Archaeological evidence from the Mimbres Classic period in the alluvial fill of Cameron Creek and the relationship of this evidence to paleosols suggests there was significant soil erosion resulting from the expansion of population and agriculture into the upper basin of Cameron Creek. This poster presents data from the alluvial stratigraphy of an arroyo crosscutting the

alluvial fill of Upper Cameron Creek Basin that supports this hypothesis.

Pope, Spencer [167] *see MacDonald, Brandi Lee*

Porcayo, Antonio and Juan Martín Rojas

[147] *Keruk: Revisión Arqueológica de las Costumbres Funerarias de Baja California (Norte)*

Después del análisis de los restos óseos arqueológicos recuperados hasta el presente en el Estado de Baja California, se definen cuatro cambios ideológicos en la manera del tratamiento del cadáver según la cosmovisión indígena. Inhumaciones y cremaciones se alternan a lo largo de la prehistoria e historia, y hoy día los yumanos bajacalifornianos luchan racial, social, religiosa y políticamente para retomar sus antiguas costumbres, usando incluso el dato arqueológico como parte de su reivindicación étnica.

Porcayo, Antonio [224] *see Eckhardt, William*

Porraz, Guillaume [12] *see Texier, Jean-Pierre*

Porter, Benjamin (University of California, Berkeley)

[152] *see Boutin, Alexis [26]* *see Farahani, Alan [152]*
First Chair

Posadas Vidales, Lylliam (University of California, Los Angeles), Wendy Teeter (UCLA), Desiree Martinez (Harvard University) and Karimah O. Kennedy Richardson

[105] *Less is More: Multi-Component Community Space on Pimu Catalina Island*

This poster will examine the trend of dividing cultural spaces into single component archaeological sites instead of larger multi-component community areas. Sites within close proximity that share many characteristics, such as a food processing location, tool manufacturing area, and water source should be part of a single site, rather than a series of independent sites. Research and GIS maps will be displayed to show how landscape use patterns change through a larger community lens and provide a more useful perspective on site distribution and use.

Potter, James (SWCA)

[83] *The Ridges Basin Community: Early Village Settlement in the Four Corners Region.*

The Animas-La Plata Project was a large reservoir project conducted by the Bureau of Reclamation just south of Durango, Colorado. The project inundated Ridges Basin, which, from about A.D. 750-825, was the home of a large, early Pueblo I community. From 2002-2005, SWCA excavated much of this community, including one of the earliest villages in the northern San Juan region, the Sacred Ridge Site. This poster compares the Ridges Basin community to other known early Pueblo I communities across the northern San Juan region and notes similarities and differences among them.

Pottier, Christophe

[90] *Constructing the landscape in early Angkor urbanism*

Constructing the landscape in early Angkor urbanism. Urban Studies at Angkor have so far associated the

perception of the territory to the study of the hydraulic system and its agrarian function. The presentation will focus on expanding that vision of the landscape showing how it is integral to the concepts of urban planning who shaped the first capitals in the region of Angkor.

Pournelle, Jennifer [26] *see Hritz, Carrie*

Powell, Hilary and Erik Otarola-Castillo (Iowa State University)

[3] *Modeling Ritual Activity as a Response to Environmental Gradients*

Ritual activity sets rules of conduct and provides sources of identity, authority, meaning, and purpose in life. As we try to understand the lives of prehistoric people, we must consider ritual dynamics motivating and structuring their interactions with the world around them. However, ritual activity expected within a given social system is relatively unknown. We quantify and model ritual activity as a response to latitudinal and environmental gradients. Using Information Theory, we compare our models, selecting the best model given the data. We use the archaeological record to test how well our model predicts ritualized activity in a prehistoric context.

Powers, Robert

[223] *Volcanic Agriculture on the Pajarito Plateau*

Maize agriculture was the economic focus of rapidly expanding ancestral Puebloan communities established on the southern Pajarito Plateau of New Mexico in the 13th and 14th centuries. In contrast to adjacent northern Rio Grande areas where Pueblo farmers built extensive and labor-intensive gravel mulch and gridded terrace fields, Pajaritan fields display little evidence of labor or long-term use. These ephemeral fields may owe much to the Plateau's pumice laden volcanic soils and to Puebloan experimentation with, and in the short-term, successful farming of these unusual soils. Archaeological, pedological, and hydrological evidence evaluating Pajaritan volcanic soils are presented.

Powis, Terry (Kennesaw State University)

[14] *Defining Complexity in the Middle Preclassic: A View from Pacbitun, Belize*

Over the past 25 years our knowledge of the Middle Preclassic period in the Maya area has increased significantly. While we have a better understanding of their material culture, settlement, architecture, and burial practices we still need to focus on how they organized themselves. While complexity indicates a social formation that is internally heterogeneous and has pervasive inequality with regard to differential access to basic resources, we do not have a good sense on the nature, structure, and timing of it. This paper will address the issue(s) of complexity at one site and compare the results regionally.

Powis, Terry [28] *see Weber, Jennifer [75]* *see Cheong, Kong F.*

Pozorski, Shelia [125] *see Pozorski, Thomas*

Pozorski, Thomas (University of Texas-Pan American) and Shelia Pozorski (University of Texas-Pan American)

[125] *Taukachi Tardio: A Late Site of the Casma Culture*

within the Casma Valley of Peru

Taukachi Tardio, a Late Intermediate period Casma Culture site, functioned as a checkpoint alongside a major valley access route. Excavations there revealed that visitors were channeled through a narrow corridor and staircase system. A room with six grinding stones documents communal food preparation, and other areas of the main structure likely temporarily housed goods or people entering the valley. Taukachi Tardio provides insights into Casma Culture administrative practices, specifically the degree of intervalley access control. The short time span represented at this site helps us understand the internal chronology at the nearby center of El Purgatorio.

Prado Cobos, Antonio [28] *see Nelson, Zachary*

Pradzynski, Aleksandra [55] *see Pihl, Robert*

Praetzellis, Adrian and Mary Praetzellis (Sonoma State University)

[48] *California: Land of Inequality*

Although historical archaeologists were hardly the first to reveal California's social inequality, the field has documented its effects in depth. Careful to avoid scientism, we archaeologists have looked at the lives of poor and historically disenfranchised ethnic groups primarily through a qualitative lens. We search for themes that serve as bridges of understanding between now and then. We often lionize the people of the past to offset one-dimensional stereotypes. Carefully constructed quantitative approaches can expand and complicate the discussion, once again challenging what we thought we knew about the archaeological manifestations of social status and life in the past.

Praetzellis, Adrian [122] *see Praetzellis, Mary*

Praetzellis, Mary (Anthropological Studies Center) and Adrian Praetzellis (Anthropological Studies Center, Sonoma State University)

[122] *Archaeologists as Storytellers: The Docudrama*

The premiere of "Archaeologists as Storytellers" garnered mixed reviews at the SHA meetings in January 1997. Some reported transformational experiences; others saw it as the work of Satan—dangerous, unprofessional, and unsubstantiated. We didn't care much either way. It was fun and a refreshing break from the tedium that pervades professional meetings. We have taken the show on the road since then—two more SHAs, some AAAs, a SAA, numerous public and academic venues. Adrian has played everything from Jack London to a US Surgeon General to a teenage female prostitute. The debate continues, as shown in our latest production presented here.

Praetzellis, Mary [48] *see Praetzellis, Adrian*

Prasciunas, Mary (WestLand Resources, Inc.) and Todd Surovell (University of Wyoming)

[155] *Reevaluating the Duration of Clovis: the Problem of Non-Representative Radiocarbon Dates*

Age estimates for the duration of the Clovis complex have recently been redefined. A newly defined age range based on a small sample of well-dated Clovis sites reduces previous estimates of the duration of Clovis by

several hundred years, and therefore, it has been argued, supports the spread of Clovis technology through existing populations rather than the spread of populations themselves throughout the continent. By simulating colonization, accounting for taphonomic bias, and sampling the resulting distribution of sites, this paper demonstrates that a small sample of well-dated Clovis sites is incapable of accurately representing the true duration of the colonization event.

Prates, Luciano (CONICET-Museo de La Plata) [213]

Third Organizer, [213] *see Politis, Gustavo G*

Pratt, Trevor (CA Office of Historic Preservation)

[112] *Discussant*

Prentiss, Anna (University of Montana) and James Chatters (Amec Earth and Environmental Inc.)

[22] *The Role of Lithic Technology in the Old Cordilleran Expansion: Cultural Macroevolution in the Early Holocene Pacific Northwest*

Developing a macroevolutionary understanding of lithic technology requires that we consider strategies used to solve engineering issues with regards to particular artifact classes but also how those decisions articulate with a wider range of strategic goals of technological organization. In this paper we demonstrate that early Old Cordilleran knappers in the Pacific Northwest made a number of crucial engineering innovations in artifact design that provided a critical component to a wider adaptive strategy. That strategy enabled this "third wave" of immigrants to quickly colonize and become the region's dominant group.

Prescott, Christopher (University of Oslo) [110]

Discussant

Preston, Tim (Maya Research Program)

[165] *Field Report on Excavations of an Elite Residential Courtyard Group and Associated Activity Areas*

The CBN-13 Courtyard group has undergone intensive excavations during the 2009 and 2010 field seasons. The residential group is an elite status courtyard consisting five main structures and, at minimum, six associated structures located on two external activity areas. Founded during the Late Preclassic, the group continued to prosper during the Classic period with major expansions and modifications occurring in both the Late and Terminal Classic periods.

Preston, Tim [191] *see Guderjan, Thomas Harold*

Preucel, Robert (University of Pennsylvania) [252]

Discussant

Prevosti, Francisco J. [231] *see Martin, Fabiana M.*

Price, Max (Harvard University)

[177] *Chalcolithic Subsistence Practices and the Animal Economy in the Lower Galilee (Israel)*

The Chalcolithic Period (ca. 4500-3500 BC) in the lower Galilee (Israel) remains an under-studied period, despite the importance of the 'Secondary Products Revolution' of the animal economies in the Near East during this time. As such, our understanding of daily life in this region is obscured by a lack of data. This presentation discusses

subsistence and specialized animal economic practices from the site of Marj Rabba. Specifically, I focus on the roles of domestic animals—pigs, sheep, goats, and cattle—while drawing on comparisons to the well-documented sites in other regions of Israel and Palestine.

Price, Sarah (Center for Archaeological Studies), Andrew Bradbury (CRAI) and Philip Carr (Center for Archaeological Studies)

[257] *One Size Does Not Fit All: Small-Gravel Cherts and Reconsideration of the Knapping Process*
Flint knapping experiments in the 1970s-1980s led to two well-accepted and broadly-applied methods of flake analysis: mass analysis and stage analysis. However, there is a general lack of continuing experimental work to determine whether a specific method is applicable to a given archaeological assemblage. Here, we discuss the experimental replication of certain key aspects of an archaeological chipped-stone assemblage based on small gravel cherts. The inability of well-established methods to accurately classify our experimentally derived data set led to a reconsideration of basic experimental premises and the means by which we characterize the knapping process.

Price, T Douglas [116] see Sierra Sosa, Thelma

Prieto, Oscar (Yale University)

[125] *Cuando los dioses ganaron sus colmillos: the beginning of the North Coast fierce fang tradition*
In 2001 Carol Mackey wrote an important article about changes in the ferocious expression of north coast deities. It was fundamental to understanding religious continuity as well as cultural and ideological changes in North Coast civilizations. Recent excavations at the site of Pampas Gramalote, an early Initial Period site, have discovered evidence of the earliest examples of large jaws depicted in the area of the Moche valley. Fishing villages like Gramalote developed their explanations of the cosmos using the maritime environment and animals. These settlements possibly contributed to creating in the long-durée the foundation of the feared gods.

Prikhodko, Sergey (UCLA)

[220] *At the interface between materials science and archaeology: new approaches to the metrology of ancient materials*

The versatile non-destructive capabilities of the variable pressure SEM-EDS system offering submicron morphological and elemental characterization of a variety of archaeological materials from small precious museum objects to bioarchaeological specimens without altering their physical attributes, has transformed the way that cultural materials are analyzed and interpreted. Combined with other techniques, such as Raman spectroscopy and synchrotron x-ray and infrared microspectroscopies complementary data can be obtained of their composition and chemical speciation without compromising their integrity. This approach offers an alternative multi-analytical resource to archaeological research involving the analysis of irreplaceable materials, with minimal sample size requirements and minimal sample preparation.

[220] Discussant [220] Second Organizer [220] see Kakoulli, Ioanna

Prilliman, Keith (Brockington & Associates, Inc.), Carolyn Rock (Brockington and Associates, Inc.) and James Page (Brockington and Associates, Inc.)

[81] *Juniper, Johnson Grass, and Burned Rock Middens: Section 110 Survey for the Ft. Worth District, USACE*
As part of an American Recovery and Reinvestment Act program enacted by Congress in 2009, Brockington and Associates conducted intensive survey on behalf of the St. Louis District, USACE between September 28th, and November 20th, 2009. Survey locations included Grapevine Lake, in Tarrant and Denton Counties; Lake Lewisville, in Denton County; Stillhouse Hollow Lake, in Bell County; and Lake Whitney, in Hill and Bosque Counties, Texas. The survey identified 58 previously unrecorded archaeological sites and revisited 25 previously recorded sites. Of 83 sites identified, 26 of them were recommended potentially eligible for inclusion on the National Register of Historic Places.

Pritchard, James [80] see Schuldenrein, Joseph

Prufer, Keith [40] see Kalosky, Ethan [145] see Ebert, Claire E. [9] see Thompson, Amy Elizabeth [34] see Aquino, Valorie V. [162] see Ragsdale, Corey S.

Puckett, Neil (Texas A&M NAP)

[106] *Internal Phoenician Trade Networks*
One of the Phoenicians' principle activities was the exchange of raw and processed commodities. They built an internal trade network across the Mediterranean by establishing settlements from the Levant to the Atlantic coasts of Africa and Iberia. This network provided Phoenician artisans with materials to produce crafts found in Assyria, Israel, Babylon, and the rest of the Ancient Middle East. This poster will provide an initial overview of the internal Phoenician trade network by observing the distribution of both raw and processed artifacts and associating this with current and wind patterns.

Pugh, Daniel (Central Michigan University)

[43] *Ethnogenesis and the Flux Capacity of Tribal Societies*

Current models for tribal, or non-centralized middle-range, societies focus on their flexibility. By maintaining a capacity for reorganization in the face of environmental uncertainty, tribes survive considerable turmoil without compromising their basic integrity. This cycling is a short-term process that contributes to long-term continuity. This paper explores the limits of this durability in a longer-term perspective and presents a model for processes that may occur when a tribal society's capacity for flux is overwhelmed. A model for tribal ethnogenesis is presented along with predictions for investigating these phenomena archaeologically.

[43] First Chair

Puleston, Cedric (Stanford University/UC Davis) and Shripad Tuljapurkar (Stanford University)

[261] *Love, death and the sweet potato: Interactions between demography, food production and social dynamics in early Hawai'i*

We use food-limited demography to explore the relationships among a number of important ecological factors, population growth rates and behavior in early agricultural populations. Our modeling approach

highlights the consequences of human behavior in a dryland fieldsystem that includes strong climatic gradients both between and within agricultural subdivisions. Our research shows the ecological context shifted under the feet of the early Hawaiians as the number of feet (and mouths) grew. We show how this line of inquiry can be used to complement and help interpret the archaeological and ethnographic record.

Punzo, Jose (Instituto Nacional de Antropología e Historia)

[147] *Tratamientos funerarios entre los xiximes de la Sierra Madre Occidental, en el estado de Durango, México.*

Los xiximes fueron los habitantes de la Sierra Madre Occidental en el actual estado de Durango, a la llegada de los españoles, y estos tuvieron distintas prácticas funerarias que los diferenciaron de todos sus vecinos. Estas consistían mayormente en la construcción de urnas funerarias de tierra, en las partes más escarpadas de los acantilados, donde colocaban a sus muertos y les colocaban sus ofrendas. Sin embargo en la presente ponencia exploraremos no solo esa práctica, sino cuestiones asociadas a la antropofagia ritual que estos desarrollaron, así como otras prácticas funerarias que hemos podido identificar mediante trabajos arqueológicos y etnohistóricos.

Purdue, Louise (CEPAM-CNRS, University of Nice Sophia Antipolis), Wesley D. Miles (Cultural Resource Management Program, Gila River Indian Community) Manuel R. Palacios-Fest (Terra Nostra Earth Sciences Research, LLC), Bruce G. Phillips (EcoPlan Associates Inc) and David K. Wright (Seoul National University)

[223] *Prehistoric Agrosystems of Central Arizona: A Paleoenvironmental Approach to the Study of Hohokam Irrigated Fields and Canals*

For more than a millennium, Hohokam farmers developed large-scale irrigation along the Middle Gila River in the Phoenix Basin. Excavations near Upper Santan Village recently uncovered a section of prehistoric irrigated agricultural fields. To reconstruct this agro-ecosystem, an interdisciplinary approach combining geoarchaeological, micromorphological, magnetic, chemical and paleoecological data was conducted on irrigation canals and associated fields. This study allowed us to reconstruct past human-environment interaction at a local scale, identify signatures of irrigated and managed soils and evaluate their preservation, compare paleoenvironmental signatures in irrigation canals and fields, and estimate the impact of long-term farming on soil properties.

Puseman, Kathryn (Paleo Research Institute), Eileen Johnson (Texas Tech University) and Peter Kovacik (Paleoresearch Institute, Inc.)

[66] *Charcoal, Wood, Paleoenvironment, and Radiocarbon Dating*

Identification of charcoal and wood fragments from the Yellow House System in Lubbock, Texas provides information about the paleoenvironment and selection of woods for specific uses, such as fuel and construction. Looking at microanatomy at high power allows identification of small charcoal fragments. This type of analysis also provides a critical piece of information

necessary prior to radiocarbon dating. Identifying the charcoal being dated and knowing and using the average life spans of the charred material as a guide to understanding the relationship between dates are crucial to building an accurate temporal record of environment and culture.

Pyburn, K. (Indiana University)

[254] *World Heritage: Universality or Just Globalization?*

Preservation and research are unproblematic concepts to most archaeologists and many sectors of the public. Remnants of the human past with scientific merit and often great beauty are commonly regarded not the property of a single culture or of the descendants of their creators, but as the property of all human beings and the appropriate preserve of science. But recently attempts to foster the preservation of important monuments and artifacts and research the cultures of the past across the globe have resulted in some new ideas about what archaeological preservation and research really are and why in any particular case certain people may be in favor of them while a surprisingly large number are not. Ultimately, these controversies have forced archaeologists and the public to consider exactly what is important about the past, and what archaeology has to do with answering the question.

[268] *Discussant* **[197]** *Discussant*

Pye, Jeremy (University of Florida)

[235] *Faces from the Past: History of Ceramic Memorial Portraits on Grave-Markers*

Ceramic memorial portraits capture the images of people in the past. Through their expressions, fashions, and depicted relationships, the people staring out from these images tell the viewer intimate stories, stories which are different for each passerby. The context of their placement, on grave-markers, adds yet another layer of meaning. As a form of archaeological artifact, they provide insights into individual and cultural identity. Moreover, they reflect individual and/or family attempts to construct a specific representation of the decedent. Ceramic memorial portraits capture memories and moments in time, link the past to the present, and preserve history for the future.

Pykles, Benjamin (State University of New York at Potsdam)

[82] *A New Archaeology in the New Deal: The Rise of Historical Archaeology in the 1930s*

Although there are isolated examples of what today we call historical archaeology from as early as the seventeenth century, the discipline had its formal beginnings in the 1930s with the New Deal excavations at Jamestown, Virginia – the first permanent English settlement in North America. The Jamestown excavations, led by Jean Carl Harrington, were among the first federally sponsored historical archaeology projects in North America and constitute the true institutional beginnings of the discipline. It was during these excavations that Harrington pioneered many of the fundamental methods and practices still used by historical archaeologists throughout the world today.

[158] *see Reeves, Jonathan S.*

Qin, Ling [111] *see Fuller, Dorian Q.*

Quates, Duane (U.S. Army, Fort Drum, NY) [185]
Discussant [185] First Chair

Quave, Kylie (Southern Methodist University), René Pilco Vargas (Universidad Nacional de San Antonio Abad del Cusco) and Stephanie Pierce Terry (Pontificia Universidad Católica del Perú)

[227] *Administration and production on the Inka estate within the imperial heartland (Maras, Cusco, Peru)*
 In the imperial heartland, the Inka transformed local political, economic, and social life. In the Maras region, the local population was forcibly migrated and replaced with royal estate investment. At Cheqoq, an Inka staple storage and ceramic production center linked to the Cusco elite, recent excavations of a workshop and domestic contexts yield new data on socioeconomic status differentiation and the role of the estate administrator under Inka nobility. We are studying production, diet, and sumptuary practices of attached specialists and storage administrators to evaluate imperial resettlement policies and the function of economic spheres under elite and state control.
[227] *Second Chair*

Quave, Kylie [5] *see Weitkamp, Matthew R. [6]* *see Kennedy, Sarah*

Queen, Rolla (Bureau of Land Management)

[166] *Cultural Resources Management Challenges from Renewable Energy Projects in the California Desert*
 The development of large scale renewable energy projects in the California Desert and American Southwest have created both challenges and opportunities for the management of cultural resources on Public Lands. The paper will explore the procedural, resource, and management issues related to renewable energy projects, focusing on case studies in the California Desert District of the Bureau of Land Management.
[112] *Discussant*

Quezada, Osiris

[224] *The Stone and their Ways of Extraction at Templo Mayor of Tenochtitlan in the Pre-Columbian period*
 In the Pre-Columbian period, the stone extraction for building required an adequate knowledge and technical skills, about of the physical properties of the raw materials for their correct exploitation. This investigation examines the archaeological evidences of the transformation process of the building materials used at the Templo Mayor of Tenochtitlan, procurement, modification and use. For this study we combined petrographic and geomorphological analyses with ethnographic work in two different quarries, where currently are extracted similar materials as employed at the Huey Teocalli of Tenochtitlan.

Quinn, Colin (University of Michigan) and Ian Kuijt (University of Notre Dame)

[226] *Smoke Signals: Variability in Social Discourse, Display, and Deposition of the Dead in Prehistoric Ireland*
 Like other forms of treatment of the dead, cremation is highly variable in practice, context, and social meaning. Elucidating patterns within this variability is necessary for developing nuanced social interpretations. By tracking the pathways of the body through the tempo, location, visibility, and technique of cremations, we explore

diachronic and synchronic differences in social organization, ritual beliefs, and conceptualizations of the body between the Irish Neolithic and Bronze Ages. This approach emphasizes how mortuary practices both reflect and actively modify the role of the dead, communal and individual identities, and social relationships in the contemporary societies of the living.
[226] *First Chair*

Quinn, Colin [226] *see Kuijt, Ian*

Quist, Rachel [180] *see Rhode, David*

Raab, Jessica (University of Kansas)

[235] *And You Shall Know Us By The Trail Of The Dead: Documenting Traumatic Injury in the Pericú of Baja California Sur*

A high rate of skeletal trauma is observed in burial assemblages among the Pericú, a culturally extinct Holocene group from the Cape Region of Baja California Sur. Previous studies of assemblages recovered from several large inhumations throughout the region reflect that 50% of males and 30% of females present antemortem craniofacial trauma. When coupled with ethnohistorical accounts of widespread conspecific and extragroup violence, an opportunity for an anthropological investigation into the traumatic injuries represented exists. Comparisons with other hunter-gatherer groups whom also engage in conspecific and/or extragroup violence may aid drawing a more cogent picture of Pericú lifeways.

Raab, L. Mark [67] *see Bost, Matthew A.*

Raad, Danielle [62] *see Smith, Alexander J.*

RabbySmith, Steve (Brockington and Associates), Glenn Strickland (Brockington and Associates, Inc.) and James Page (Brockington and Associates, Inc.)

[81] *Refining Site Probability Model Criteria for USACE Properties on the Upper Tenn-Tom Waterway: Section 110 Survey for the Mobile District, USACE*

As part of the American Recovery and Reinvestment Act, Brockington and Associates conducted cultural resources survey at various USACE properties across the southeastern U.S. Among those properties were approximately 3500 acres within the Tenn-Tom Wildlife Mitigation Area (WMA) identified as having a high probability for archaeological resources. Using the Tenn-Tom WMA high probability survey results, more specific environmental correlates were identified, which have allowed for a refined site probability model. The proposed conference poster is intended to illustrate contrasting probability data and how this information can be used to prioritize future archaeological research in the region.

Raczek, Teresa (University of New Hampshire)

[189] *When Possessions are Few: Mobility, Materiality, and Minimalism in Northwest India*

The practice of high mobility is strongly correlated with minimalist consumption patterns. Previous research on craft production of highly mobile groups has emphasized functional analyses that focus on the portability, utility, and flexibility of lithic tools, pottery, and other items. However, it is also important to consider the relationship between consumption, production and the construction of

identities. When the number of objects one owns is small, the inherent meaning in each object becomes magnified. This paper will examine the relationship between mobility, materiality, and minimalism in Northwest India, with a specific focus on the site of Bagor, Rajasthan.

Rademaker, Kurt (University of Maine), Bruce Kaiser (Bruker Elemental), David Gibson (University of Maine) and Michael Glascock (University of Missouri Research Reactor)

[267] *New Geochemical Data from the Alca Obsidian Source Region: Implications for Understanding Prehistoric Extraction and Distribution*

From initial use by Late Pleistocene hunter-gatherers to widespread distribution by complex societies, Alca obsidian was one of the most economically important volcanic glasses throughout Central Andean prehistory. Alca is the only Peruvian obsidian known to have geographically patterned geochemical variation within an extensive source region. This characteristic allows high-resolution provenance determination of artifacts and makes the Alca source an ideal place to evaluate various extraction and distribution scenarios. We present new geochemical data obtained on obsidian artifacts from archaeological sites local and extra-local to the Alca source region and discuss potential social and economic implications.

Radovanovic, Ivana [255] *see Bonsall, Clive*

Raebel, Meghan (Ripon College)

[35] *Inka and Tiwanaku Plant use at the site of Tiwanaku, Bolivia*

The paleoethnobotanical evidence from Inka and Tiwanaku occupations will be presented, highlighting the differences in plant use, landscape utilization, and ritual. The materials are derived from A. Vranich's and J. Yeager's excavations in the ritual core of Tiwanaku. These materials will be compared to other middle Horizon sites in Peru. Collection and analysis methods will be highlighted, and the results of new and ongoing pXRF analysis will be presented.

Rafferty, Sean (University At Albany, SUNY) and Zuzana Chovanec (University at Albany, SUNY)

[19] *Recent research on alkaloid residues*

Residue analysis of intoxicants is a high-potential but underutilized area of research. The authors of this paper present recent research on the use of tobacco and opium residues in prehistory. In addition, results of the analysis of experimental data on alkaloid residue diagenesis are also presented.

Rafuse, Daniel [177] *see Gutierrez, Maria A.*

Ragsdale, Corey (University of New Mexico) and Keith Prufer (University of New Mexico)

[162] *Isla del Idolo: a survey of an endangered archaeological site in Veracruz, Mexico*

Here results are presented from an initial survey conducted on a possible pre-Hispanic Gulf Coast occupation site. The site is located on Isla del Idolo in the Tamiahua Lagoon, Veracruz, Mexico. Findings are comparable with structures and burials found in adjacent regions around Mexico. The construction of a man-made

outlet on the southern point of the lagoon in the 1950's has caused recession and erosion due to rising water levels, and consequently to the exposure of hundreds of archaeological artifacts and human remains in immediate danger of being lost. Action toward the preservation of these remains should be considered.

Railey, Jim (SWCA - Albuquerque)

[7] *Spatial Zoning and the Shift from "Formal" to "Expedient" Flaked-stone Technologies*

The temporal shift from "formal" to "expedient" flaked-stone technologies has been the subject of several competing explanations, variously emphasizing reduced mobility, intensification of farming and other methods of food production, and the advent of the bow and arrow. Another factor that may help explain this apparent shift is the marked increase in spatial zoning that occurred with the advent of sedentism. This poster presents several instances in which formal-tool production occurred in spatially restricted loci in late prehistoric sedentary settlements in North America, and focuses on a case study from a Pueblo-period site in New Mexico.

Rains Clauss, Lee [197] *Discussant [197]* *First Chair [197]* *Second Organizer*

Rakita, Gordon (University of North Florida)

[143] *The Mortuary Practices of the Casas Grandes Region: A Preliminary Database*

I present a preliminary regional database of mortuary practices for the Casas Grandes region of Chihuahua, Mexico. The reported prehistoric mortuary remains from the region are overwhelmingly drawn from the Paquime and Convento sites reported by Charles C. DiPeso and colleagues. Often overlooked, however, are several smaller samples that are reported with less detail. Given the complex nature of mortuary ritual from the region (especially in the late ceramic periods), the structure of the database and the recorded variables is equally complex. The data highlight several challenges to establishing a regional database of Southwestern mortuary practices.

[143] *Second Organizer*

Ramenofsky, Ann (University of New Mexico) [264] *Discussant [130]* *Discussant*

Ramirez, Nicole (HDR/e2M and California State University Chico) and Lisa Westwood (ECORP Consulting, Inc.)

[242] *Space Exploration as a Universal Value: A Case for Nominating Tranquility Base as a World Heritage Site* UNESCO World Heritage Sites are defined as places, natural or constructed, which are of outstanding universal value. Space technologies are global technologies representing the contributions of many cultures and many countries around the world. They are the result of the cumulative interchange of scientific and world cultural values over many decades. This paper will discuss the World Heritage List Criteria and the ways in which Tranquility Base, the site of the first moon landing, satisfies the criteria.

Ramirez, Shelby [211] *see Maurer, Emily*

Ramirez-Urrea De Swartz, Susana (Universidad de

Guadalajara)

[98] *The anthropomorphic representation in the Aztatlán Tradition (850-1300 AD), Western Mexico. An approach*
 The Aztatlán Tradition was widespread in Western Mexico between 850 and 1300 AD. One of its most remarkable characteristics is the introduction of new iconography in the region, which stands out because of its ritual and religious thematic and it has been related to as codex style. Of particular interest are the anthropomorphic representations, especially in some codex style pottery vessels. It has been noticed that some of these representations might correspond to different gods; figures also dressed up with attributes of some deities. This paper attempts to approach human representations and some of its meanings in the Aztatlán Tradition.

Ramon Celis, Pedro and Paulo Cesar Perez Roman (Zona Arqueológica de Monte Albán)

[95] *Entierros y ofrendas en Lambityeco: Nuevas formas de deposición encontradas en contextos tardíos.*
 A principios del año 2010, se realizaron excavaciones en el sitio arqueológico de Lambityeco teniendo como objetivo la exploración de una unidad doméstica. Presentaremos los hallazgos de estas excavaciones. Uno de los más interesantes fue el entierro de dos individuos infantiles rehumados asociados al enterramiento de un neonato, estando colocados los primeros de manera intencional en un arreglo mortuario muy peculiar. Este tipo de deposición, no registrada previamente en la zona, teniendo un contenido semántico que funciona como un libro abierto a las prácticas funerarias zapotecas así como ayuda en la comprensión de la cosmovisión prehispánica en general.

Ramos, Carmen [119] see Lentz, David L.

Randall, Lindsay (Robert S. Peabody Museum of Archaeology) and Christopher Toya (Department of Resource Protection - Pueblo of Jemez)

[196] *Pecos Pathways: A Model for Creating Lasting Partnerships*

Pecos Pathways is an expeditionary learning program that is an outcome of the largest repatriation in NAGPRA history to Jemez Pueblo in 1999. A Robert S. Peabody Museum of Archaeology, Pecos National Historical Park and the Pueblo of Jemez partnership, it was inspired by mutual interest in educating young people and a desire to continue the relationship. Each June students from Phillips Academy, Jemez Pueblo and Pecos, NM travel, live and learn together. The informal interactions spark deep friendships, cross-cultural sharing and meaningful lessons about the importance of place and how the past informs both the present and the future.

[196] First Moderator

Ranere, Anthony (Temple University) and Richard Cooke (Smithsonian Tropical Research Institute)

[120] *Clovis and Other Fluted Point Traditions in Central and northern South America*

Clovis and Fluted Fishtail points have been recovered from a number of localities in both Central and northern South America. In this presentation we examine assemblages from quarry/workshops in Costa Rica and Panama in order to compare the lithic reduction sequence of Central American Clovis to both the North

American Clovis reduction sequence and the Fluted Fishtail reduction sequence from Panama. Because no faunal or floral remains are preserved in Clovis sites, we infer subsistence strategies from the Late Pleistocene ecological contexts in which Clovis sites and isolated points have been found.

Ranere, Anthony [213] see Cooke, Richard G.

Rasic, Jeff [62] see Reid, Devon **[7]** see Tremayne, Andrew H.

Raslich, Frank (Michigan State University)

[29] *Implications of the Stylistic Effects of Population In-migration on Mississippian and Oneota Projectile Point Assemblages*

Projectile point assemblages from two central Illinois River Valley sites, Larson (11F1109) and Morton Village (11F2) are analyzed to gain an understanding of the morphological and metric changes that occur when an in-migration of outside populations transpires. The Larson site, a primarily Mississippian site with both Mississippian and Oneota populations, provides an excellent unit of analysis for comparison to the Morton Village site. Isolation of the kind and degree of any directional stylistic or metric statistical relationships that occur contains potential to provide archaeologists with deeper insights into how intergroup interaction and migration may impact stylistic variation within lithic assemblages.

Rauh, Whitnie, John Dudgeon (Idaho State University/CAMAS), David Peterson (Idaho State University), Clayton Meredith (Idaho State University) and Nick Holmer (Idaho State University)

[63] *Comparison of Methodological Approaches for Determining Modes of Trace Metal Uptake in Archaeological Skeletal Remains*

By combining high-precision SEM-EDS with the trace element sensitivity of LA-ICP-MS, we demonstrate that it is possible to separate and account for the variable signature of biogenic metal uptake during life, versus diagenetic post-depositional alteration in archaeological bone. Middle Bronze Age human and animal bone is analyzed to determine the probability of identifying copper and bronze producers through trace metal uptake. LA-ICP-MS trace element chemistry calibrated by SEM-EDS can distinguish and quantify patterns of occupational uptake and diagenesis. We feel this combined methodology is a suitable alternative for liquid ICP-MS analysis, which suffers from the homogenizing effects of bulk sampling.

Rautman, Alison (Michigan State University)

[86] *Aggregation in the North American Puebloan Southwest*

The archaeological record of the Puebloan Southwest is characterized very generally by two widespread and obvious changes in settlement pattern: a shift from pithouse architecture to contiguous above-ground structures, and population nucleation, or coalescence, into pueblos that can include many hundreds of rooms. Although the proximate causes of population aggregation vary across the Southwest, these settlement changes express and codify in spatial terms a single social strategy for managing changes in the scale, frequency, and/or intensity of social interactions. The expression of

this social strategy in the American Southwest encompasses what archaeologists recognize as specifically Puebloan towns and villages.

[53] *First Chair* [53] *Second Organizer* [53] see Solometo, Julie P.

Ravesloot, John [179] see Gabler, Brandon M.

Raviele, Maria (Indiana University), William Lovis (Michigan State University), Gerald Urquhart (Michigan State University) and John Hart (New York State Museum)

[19] *The Affects of Alkali Processing on Maize Detectability in Carbonized Food Residues*

Employing isotope analysis of carbonized residues to detect maize is increasingly employed by archaeologists in the Americas. Using a series of controlled experiments replicating carbonized food residues, we assess how alkali processing using wood ash may affect maize's detectability in $\delta^{13}\text{C}$ isotope assays. Even with high proportions of maize present, C3 producers have been demonstrated to mask the presence of maize, a C4 plant. This results in false negatives for the presence of maize. We report on experimental outcomes that help answer the question: Does alkali hominy processing of maize with ash result in low detectability in carbonized food residues?

Ready, Elspeth (Stanford University)

[2] *Prey choice and skeletal transport strategies during the Mousterian at Gatzarria Cave, southwestern France*
This paper examines Neandertal foraging behaviours at Gatzarria Cave, a Middle to Upper Palaeolithic transition site in the Atlantic Pyrenees. Prey and patch selection by Neandertals from Gatzarria suggest a focus on a single prey species from lowland habitats. Skeletal part patterns are investigated using several utility indices, which demonstrate that transport decisions aimed to maximize the delivery of high-quality marrow fat. The foraging behaviours documented at Gatzarria are considered in the context of broader subsistence patterns in Western Europe during the Middle and early Upper Palaeolithic.

Reber, Eleanora (UNC Wilmington) and Matthew Kerr (UNC Wilmington)

[19] *Diagenesis and Soil-Sherd Interactions in Experimentally Produced Black Drink Residues*

Black drink is a North American native caffeinated tea produced from the leaves of *Ilex vomitoria*. The beverage was an important part of native Southeastern culture, and the leaves of *I. vomitoria* were a potentially valuable trade good during the prehistoric period. As such, the ability to identify archaeological Black drink residues would be valuable to southeastern archaeologists. Black drink was repeatedly made in experimentally produced unglazed pottery. Residue-containing potsherds were buried in several different environmental contexts and then underwent absorbed pottery residue analysis in order to determine how diagenesis and soil-sherd interactions would affect the residues.

[19] *Discussant* [19] *Second Organizer*

Reber, Nora [19] see Barker, Andrew L.

Reckin, Rachel [57] see Lee, Craig M.

Reddy, Seetha (Statistical Research, Inc), John Douglass (Statistical Research, Inc.) and Donn Grenda (Statistical Research, Inc.)

[151] *Public Feasting and Mourning during the Mission Period in the Ballona, West Los Angeles*

Feasting and mourning contexts offer unique insights into the cultural perceptions of the relationship between food, material culture and ideology. Recent excavations in the Ballona Lagoon area in west Los Angeles have provided an extraordinary opportunity to study these relationships during the Mission period. Dense deposits of fauna and floral remains, along with other material culture, are interpreted as the remnants of community feasting most likely related to the annual Gabriolino/Tongva mourning ceremony. Our findings from this research paving the path to address the elusive research themes of ritualization of foods and materials, and cultural preferences among complex hunter-gatherer populations.

[151] *Second Chair*

Reddy, Seetha [151] see Ciolek-Torrello, Richard [151] see Van Galder, Sarah J. [151] see Kremkau, Scott H.

Reed, Lori (Aztec Ruins National Monument)

[219] *From Small Site to Big Picture: Ceramics from the Tommy Site and Chacoan Period Developments in the Middle San Juan Region, Northwest New Mexico*

Located on the B-Square Ranch just south of the San Juan River in Farmington, New Mexico, the Tommy Site is a small pueblo occupied from the late AD 900s to the early decades of the 1100s. Ceramics from the site represent an assemblage that mostly predates the late Chacoan period construction at nearby Salmon and Aztec great houses. In this paper, I examine the Tommy Site ceramics in relation to Chacoan period developments in the Middle San Juan and further evaluate the Chacoan migration and emulation models recently applied to the region.

Reed, Michael (Dixon Unified School District) [268]
Discussant

Reed, Paul (Center for Desert Arch.)

[117] *Holding on as Chaco Fell: Salmon Pueblo in the Twelfth Century*

Salmon Pueblo was built at AD 1090 as the first Chacoan Outlier in the Middle San Juan region. Unlike its younger, sister community at Aztec, New Mexico, Salmon passed through its Chacoan occupation quickly, with architectural, as well as social and ritual, changes apparent in the community by AD 1130. As the remainder of the Chacoan World collapsed and readjusted, Salmon's inhabitants assumed a largely local orientation to their economy and social identities. This local adaptation presaged changes that swept across the entire San Juan Basin by AD 1175 and ushered in the rapid growth of the early thirteenth century.

Reeder-Myers, Leslie (Southern Methodist University)

[105] *GIS and Radiocarbon Dating in the Service of Landscape Archaeology on Santa Rosa Island, California*
A rich record of occupation on the Northern Channel Islands provides an opportunity to explore landscape-scale approaches to environmental archaeology. I

suggest that people changed the way they settled and exploited their landscape in response to profound changes in the post-Pleistocene environment of Santa Rosa Island, including sea-level rise and consequent restructuring of marine and terrestrial ecosystems. A GIS-based model of Early Holocene environmental change is described, using geographic and paleoecological principles. Thirty new radiocarbon dates add to our understanding of human settlement decisions on the island and test hypothesized relationships between environmental changes and human settlement decisions.

Reeves, Jonathan (State University of New York at Potsdam) and Benjamin Pykles (State University of New York at Potsdam)

[158] *Illuminating Iosepa: Hawaiian Petroglyphs in Skull Valley, Utah*

From 1889 to 1917 the town of Iosepa in Utah's Skull Valley was occupied by mostly Hawaiian converts to The Church of Jesus Christ of Latter-day Saints. Iosepa represents a place of cultural synthesis where the traditional Hawaiian culture of the town's inhabitants and their new Mormon belief system were negotiated in unique and complex ways. One manifestation of this cultural negotiation is the petroglyphs engraved by the people of Iosepa on a large boulder overlooking the town site. The analysis of these petroglyphs is helping archaeologists interpret and understand the cultural dynamics of the site and its inhabitants.

Regnier, Amanda (University of Oklahoma)

[210] *The Intact Dalton Occupation at the Ramos Creek Site in Southeast Oklahoma*

During summer 2010, the University of Oklahoma conducted a Field School in Archaeology at the Ramos Creek site (34Mc1030) in McCurtain County, Oklahoma. While the major goal of the project was to recover materials associated with a 15th century Caddo occupation, excavations revealed an intact Dalton occupation, including a large burned rock feature, making this one of the only excavated components of this age in the southern Ouachita Mountains of southeast Oklahoma. Results of the excavation and the place of Ramos Creek in the regional cultural sequence will be presented.

Reid, Devon (UAF), Jeff Rasic (National Park Service) and Loukas Barton (National Park Service)

[62] *Compositional Variability of Volcanics from Southwest Alaska using PXRF*

Due to the complex archaeological record in southwest Alaska, gaining a better understanding of the ways people used materials in the region is important to reconstruct past cultural dynamics. To examine this, we use XRF technology to provide a direct evaluation of compositional variation of basalt and other low silica volcanic rocks from stratified or radiocarbon dated archaeological sites in the upper Alaska Peninsula and Kodiak Island during the Holocene. Artifacts from selected museum collections and geological source samples are analyzed using a portable XRF (PXRF) machine. Establishing compositional variation of the artifacts provides a foundation to evaluate cultural processes.

Reid, J (University of Arizona)

[99] *Preshistoric Time and Behavior: Jeffrey S. Dean's Critical Role in Grasshopper Research*

Research by the University of Arizona Archaeological Field School in the Grasshopper region of east-central Arizona owes much to the theory, methods, good advice, and experienced fieldwork of Jeffrey S. Dean. This illustrated presentation discusses the specific concepts and individual research projects that he influenced, their impact on interpretations of Grasshopper Pueblo and other sites, and his contributions to the development of Behavioral Archaeology.

Reid, J. Jefferson [18] *see Snead, James E.*

Reid, Kenneth (Idaho State Historical Society) and Matthew Root (Rain Shadow Research, Inc.)

[120] *Clovis in Idaho: Chronology and Technology*

Clovis points litter Idaho's Snake River Plain and adjoining highlands. However, their distinctive manufacturing technology and patterns of re-use have often been submerged and blurred in broader discussions of a regional fluted tradition that includes Folsom and other proximally thinned lanceolates. Furthermore, the temporal priority of a Western Stemmed tradition is sometimes asserted from the absence of an established Clovis chronology in Idaho. We review evidence for a discernible Clovis horizon in Idaho that exploited at least four regional obsidians and several cherts (but no andesites) and that fits within a time frame of 11,200 - 10,800 rcybp.

Reindel, Markus (German Archaeological Institute, Bonn, Germany) and Thomas Stoellner

[267] *Mining Archaeology in the Nasca and Palpa region, south coast of Peru*

While research about mining archaeology in the Andes has focussed mainly on the north coast of Peru, the south coast has been widely neglected despite of some pioneering studies which pointed to the importance of the region. In the interdisciplinary Nasca-Palpa project we documented mining activities in the vicinity of prehispanic settlements. We identified mines and quarries, as well as working places with stone tools. Mineral samples were tested in the laboratory. The preliminary results demonstrate the importance of the region for the production of gold, copper, semi-precious stones and obsidian especially in the Paracas, Nasca and Late Intermediate period.

Reinhart, Katrinka (Stanford University)

[228] *Politics of food at the Chinese Bronze Age site of Yanshi Shangcheng*

Social inequality and ancestor worship are rooted in the Neolithic in China. During this time, ancestor worship was practiced throughout all segments of society but by the early Shang dynasty (c. 1600 BC), characterized by marked social stratification, ancestor worship has become a productive elite institution supported by craft industries and specialized activities. This research examines pottery from elite and non-elite contexts at the site of Yanshi Shangcheng in order to elucidate the role of food and feasting—integral components of ancestor worship and sacrificial ritual in ancient China—in the production of power and maintenance of an elite class.

Reitze, William (University of Arizona)**[231]** *A Geoarchaeological Interpretation of Lake Estancia, New Mexico*

This study presents a model of human land use as it is influenced by environmental change at the Pleistocene-Holocene transition in the Estancia Basin, New Mexico. The Estancia Basin contained the eastern most pluvial lake in the Southwest, presenting a unique opportunity for Paleoindian foraging groups during the Pleistocene-Holocene transition. The suite of resources available in the basin likely differed from those encountered elsewhere on the Southern Plains. A reinterpretation of lake levels, ages, and potential subsistence resources, drawn from geoarchaeological analysis, is compared to archaeological records of land use developed from reanalysis of large surface collections from the basin.

Reitzel Rivera, Hannah (Arizona State University)**[58]** *Exploring "Aztatlán" Social Boundaries through Ethnographic Analogy*

The Postclassic Aztatlán material culture complex, exemplified by a range of highly decorated pottery wares, is found in the modern states of Nayarit, Sinaloa, Jalisco, Colima, Michoacan and Durango--archaeologically speaking, West Mexico. The later, symbol-laden pottery is particularly interesting because of the drastic regional shift it represents from the earlier, minimally decorated red-on-brown and plain wares. Employing an ethnographic analogy to modern and historically documented Huichol gourd bowls, I propose two archaeologically examinable hypotheses about the nature of social interactions within and outside the Aztatlán region that could have lead to this major change in material culture.

Rendu, William (CNRS- TRACES), Sandrine Costamagno (CNRS – TRACES) and Liliane Meignen (CNRS - CEPAM)**[17]** *Neanderthal Hunting Strategies in Southwestern Europe, Variation and Adaptation*

The evolution of behaviors during the transition from the Middle to Upper Paleolithic is an area of major research. While the hypothesis has been proposed that specialized economies appeared during the Early Upper Paleolithic, few studies have focused on this topic in Mousterian context. We address the question of Neanderthal specialized hunting through an overview of different Mousterian assemblages from Southwestern France in the MIS 4/3. These examples suggest that multiple different subsistence strategies were developed by Mousterian populations and specialized economies may have been used in response to specific climatic constraints.

Reseburg, Nicholas [80] *see Leckman, Phillip O.***Reti, Jay (Rutgers University)****[74]** *Darwinian archaeology and its application to Oldowan lithic analytical studies in East Africa*

Lithic analysis has traditionally used typologies to infer patterns of technology, culture, or function. These typologies are often rooted in qualitative methodology that provides an unstable foundation for systematic behavioral interpretation. Recent theoretical approaches to lithic analysis include Darwinian Archaeology, which

considers nonsomatic, human-produced objects as products of selection. Though selection theory, as an archaeological tool, has gained momentum in America, evolutionary approaches to lithic analysis lack in African archaeology. This paper examines 1) the utility of applying Darwinian approaches of lithic analysis to Oldowan technologies and 2) what effects a quantitative analytical system will have on potential archaeological conclusions.

Reuther, Joshua [179] *see Gelvin-Reymiller, Carol P.***Reynolds, Cerisa (University of Iowa)****[135]** *Dinner at the Darkmold Site: Faunal Remains from a Basketmaker II Site in Southwestern Colorado*

The Darkmold site is a Basketmaker II site located near the modern town of Durango in southwestern Colorado. This poster will present the preliminary results of an ongoing analysis of the more than 13,000 non-modified faunal specimens recovered from Darkmold between 1998 and 2008. The poster will focus on species representation, processing patterns, and the taphonomic state of the assemblage, while also exploring what the fauna from Darkmold can tell us about dietary choices at the origins of agriculture in southwestern Colorado.

Reynolds, Georgeanne (US Army Corps of Engineers)**[173]** *Storage Practices of the Protohistoric Inupiat: a Window Into Cultural Behavior*

During 1981-83, archaeologists from SUNY Binghamton, under the direction of Albert A. Dekin Jr., excavated several house mounds at the Utqiagvik site in Barrow, Alaska. Houses, some abandoned about 500 years ago, were completely excavated, yielding completely new data sets on household activities and spatial organization. One mound in particular yielded the remains of five partially intact bodies that had been killed while they slept—massive and thick sheets of sea ice overtopped the bluff and crushed the house, leaving all artifacts in their last used position. New data were discovered on house structure and storage patterns, topics typically overlooked in the ethnographic record which tended to focus on whaling and other subsistence activities. This paper examines storage in the small, enclosed space that was the Inupiat iglu, suggesting that patterns of what is absent and what is present in the house represents a glimpse at the cultural organization of a prehistoric household.

Rhode, David (Desert Research Institute), David Schmitt (Desert Research Institute), David Page (Desert Research Institute), Rachel Quist (US Army Dugway Proving Ground) and James Feathers (University of Washington)**[180]** *Starch Grains, Bunny Bones and Luminescence Dates from Fcr Features at the One-Eyed Rabbit Site, Dugway Proving Ground, Utah*

The One-Eyed Rabbit Site (42To567) is a large open multi-component resource procurement locality east of the Great Salt Lake Desert, Utah. Our investigations center on extracting subsistence information and chronology from the numerous fire-cracked rock (FCR) features present. Chronological proxies (14C, obsidian hydration, and luminescence) indicate sporadic occupation spanning the Holocene since at least ~8600

cal BP. Faunal and starch analysis indicate use of lagomorphs and several plant taxa. This case study highlights the potential of the humble FCR feature as a chronometric diagnostic and a repository of microfossil-based subsistence data.

Rice, Erin (University of Illinois at Chicago)

[63] *An Analysis of Obsidian from the Pre-Pottery Neolithic of the Near East using XRF and GIS*
Understanding how trade and exchange may have occurred within and between groups is one of the primary aims in archaeology. This study uses XRF analysis to determine the sources of obsidian found at sites in the South-Central Levantine PPN in combination with GIS software to map potential trade routes using cost distance and least-cost path models. The analysis examines how obsidian, and potentially other materials, may have moved between sites as well as the possible implications for reconstructing social exchange and organization through its distribution.

Rice, Glen (Rio Salado Archaeology) and Christopher Watkins (Arizona State University)

[52] *A Critical Assessment of Late Prehistoric Kayenta In-Migration in Central Arizona*
Proponents of the Coalescence Model use multiple lines of evidence to make convincing arguments that Kayenta populations moved into Eastern Tonto Basin and the San Pedro en masse, establishing new settlements with distinctively Kayenta material culture. A similar claim for Kayenta in-migration into the Phoenix Basin and proposed Verde Confederacy is significantly weaker, and not supported by multiple lines of evidence. Migration would tend to follow established exchange/social relationships, and we discuss alternate cases (using ceramic, architectural and mortuary data) in which migrations into the Phoenix Basin occurred along well-documented connections to the Middle Verde and Lower Gila.

Rice, Glen [158] *see Higgins, Howard C.*

Rich, William

[239] *North Coast Digital Heritage Project*
The Cultural Resources Facility at Humboldt State University is currently working in cooperation with north coast agencies and tribes to develop the North Coast Digital Heritage Project (NCDHP). The NCDHP is open to all parties that are interested in the region. The NCDHP's goal is to acquire, manage, and make available geographic and historic information within the Humboldt Base Meridian using Geographic Information Systems and web-based databases. This digital library will assist in the identification, management and preservation of the region's heritage. To this end, the NCDHP is accumulating maps, records, photographs and any documents which support this.

Richard, Hervé [192] *see Rius, Damien*

Richards, John (University of Wisconsin - Milwaukee)

[104] *The Archaeology of Sub-Roadbed Deposits and the Developmental Horizon Oneota Occupation of the Schlage Site*

The inadvertent disturbance of human remains in Calumetville, Wisconsin in July 2009 occasioned

archaeological investigations that led to the identification of the Schlage site and excavation of 78 pit features. Pit fill included a variety of domestic debris as well as an additional set of human remains. What is remarkable about the Schlage site materials is that the archaeological deposits were preserved beneath the roadbed of a United States highway. The presence of well-preserved archaeological deposits beneath a modern U.S. highway suggests that archaeological monitoring may be prudent during reconstruction of existing roadways when the route traverses archaeologically sensitive areas.

[104] *First Chair*

Richards, John D. [104] *see Schneider, Seth A.*

Richards, Julian (University of York Archaeology Data Service) [144] *Discussant*

Richards, Michael (University of British Columbia), Alejandra Diaz (University of British Columbia), Suzanne Villeneuve (Simon Fraser University) and Brian Hayden (Simon Fraser University)

[176] *Dietary isotope analysis of canids and other fauna from the Keatley Creek site*

We report on carbon and nitrogen dietary isotope analysis of dogs and other fauna from the Keatley Creek site. This study was undertaken to explore the nature of canid diets at this site through time, and especially to focus on the relative importance of salmon in their diets. Although dogs are not a direct proxy for humans in dietary isotope studies, their diets are influenced by human dietary practices, and therefore indicative of human subsistence strategies and activities. The isotope results are compared to results from humans and canids from other sites in British Columbia.

Richards, Michael [255] *see Oelze, Vicky M.*

Richards, Patricia (Univ of Wisconsin-Milwaukee) and Ashley Dunford (University of Wisconsin-Milwaukee)

[104] *Formal Burial or Disposal? Human remains recovered from an Oneota site in Calumetville, Wisconsin.*

In August of 2009, human remains were inadvertently disturbed during construction work associated with USH 151 in Calumetville, Wisconsin. One adult was present in partially disturbed contexts beneath the existing pavement of USH 151. An additional burial was encountered during subsequent archaeological monitoring. Data suggest the two burials are located within or near the domestic portion of what was a substantial village. This paper presents the analysis of both burials and compares the context from which each burial was recovered. It is argued that two very different disposal practices are represented at this Developmental Horizon Oneota component ca. A.D. 1200-1300.

[104] *Second Organizer*

Richardson, James (University of Pittsburgh and Carnegie Museum) and James Adovasio (Mercyhurst College)

[196] *The Robert S. Peabody Museum and the Peopling of the Americas: the Sites, Issues and Debates*

The question of the timing and routes of entry into the

Western Hemisphere is a major research question in American archaeology. The debate has swung back and forth between a late entry versus an early presence in the Americas. The Robert S. Peabody Museum of Archaeology has, at times, been at the center of this controversy. The research and collections made by Moorehead, Byers, Johnson, Bullen, MacNeish and Bradley will be discussed in the context of the history of the debate emphasizing how their research helped shape the current theories on the peopling of the Americas.

[196] *Second Organizer*

Richards-Rissetto, Heather (HUMlab, Umeå University) and Jennifer von Schwerin (University of New Mexico)

[128] *Visualizing Copan: 3D Perspectives from an Ancient City*

This paper explores recent contributions of 3D Modeling, Geographic Information Systems, and other geospatial technologies in providing new methods, tools, and perspectives to study ancient social dynamics at Copán, Honduras. Our work focuses on developing a new platform for an online, searchable database that brings together GIS maps and highly-accurate 3D models in a VR environment on Copán's ancient architecture. In particular, we will present a prototype of a 3D simulated landscape of Copán and discuss the potential roles that this 3D landscape can play in teaching and research in Honduras.

Richerson, Peter (UC Davis), Charles Efferson (University of Zurich) and Robert Bettinger (UC Davis)

[43] *Lotka Volterra models of hunting and gathering with techno-social evolution*

The Lotka-Volterra equations are used to represent species interactions in community ecology including the interactions of predators, prey and competitors. They are a natural way to model human interactions in ecological communities. The main peculiarity of humans in that cultural evolution leads to rapid changes in human social organization and toolkits compared to the slower genetic changes in our prey and competitors. Simulations suggest that humans readily evolve into superpredators that over-exploit prey and collapse. On the other hand, hunter-gatherers that shift from mainly animal to mainly plant resources may have more stable "donor controlled" population dynamics.

Richman, Jennifer (US Army Corps of Engineers, Northwestern Division) [184] *Discussant*

Rick, John [233] *see Koontz, Cassandra S.*

Rick, Torben [105] *see Jagani, Sheel A.* [263] *see Bond, Kristina J* [105] *see Hofman, Courtney* [123] *see Braje, Todd J.*

Riel-Salvatore, Julien (University of Colorado Denver), Roberto Maggi (Direzione regionale per i beni culturali e paesaggistici della Liguria), Gabriele Martino (Direzione regionale per i beni culturali e paesaggistici della Liguria) and Stefano Rossi (Direzione regionale per i beni culturali e paesaggistici della Liguria)

[218] *(Re)Establishing the age of the "Young Prince" of*

the Arene Candide

The 'Young Prince' of the Arene Candide (Italy) is one of the most lavish Upper Paleolithic burials known. Since its discovery in 1942, the typology of the associated assemblage and radiocarbon dates have led to his being attributed variously to the Aurignaco-Gravettian, the Gravettian, and even the early Epigravettian. A direct date of ca. 23.4kya on the Young prince himself did little to settle the issue. Renewed field and archival research since 2008 has allowed us to clarify the Prince's stratigraphic position and establish definitively his Gravettian age, with implications for the site's Upper Paleolithic sequence as a whole.

Riffe, Jed (Producer/Director Ishi, the Last Yahi), Jack Kohler (United Auburn Indian Community), Kyle Hecht (Jed Riffe Films + Electronic Media), Zumilra Gamito (Jed Riffe Films + Electronic Media) and Orin Starn (Duke University)

[77] *Ishi's Brain*

ISHI'S BRAIN links the fight for the repatriation of Ishi's brain with inquiry into the morality of science and the legacy of the last Yahi, showing how different people, Native and non-Indian, have competed to appropriate his body, image, and memory for different purposes. Exclusive footage from the repatriation campaign of 1999 culminating in Ishi's memorial makes this only film able to tell this story. The film supplements Jed Riffe's past award-winning documentaries ISHI, THE LAST YAH! and WHO OWNS THE PAST?, which documents the American Indian struggle for control of their ancestral remains, updating both for new audiences through an integrated approach to history.

Riggs, John (Natural Resources Conservation Service, Arkansas), Diana Angelo (Natural Resources Conservation Service) and Juliet Morrow (Arkansas Archeological Survey)

[87] *Arkansas NRCS and Section 106: Process versus Preservation*

In July 2008, the SHPO recommended a survey in advance of a wetland restoration project. Upon arrival in August 2008, I found that all earthmoving had been prematurely completed thus creating several small impoundments along the first terrace of Cache River in east Arkansas. One shell-filled Mississippian trash pit was subsequently exposed. In danger of being destroyed, this unique feature was completely recovered without mandated SHPO coordination. The feature was saved but NRCS was accused of foreclosure. The limitations of the 106 process could have resulted in the loss of the resource.

Riley, Timothy (Paleoethnobotany and Palynology Labs, TAMU) and Phillip Johnson (Kentucky Heritage Council)

[35] *A Microbotanical Analysis of an Umu Feature from Fatumafuti, Tutuila, American Samoa*

This poster presents preliminary data from a microbotanical analysis of an Umu (oven) feature at the site of Fatumafuti on the island of Tutuila, American Samoa. This site was a permanent residential site from 1000 BP through contact. The umu feature had incredible organic preservation for the region due to the calcareous nature of the sediments at the site and was selected for further analysis. A column sample of the feature fill was

collected for starch and phytolith analysis. The recovered microfossils were identified with reference to the major cultivated food resources of the Polynesian diaspora.

Rinck, Brandy [124] *see Shantry, Kate A.*

Rios, Jorge (Zona Arqueologica de Monte Alban)

[95] *Un Juego de Pelota en Lambityeco:*

Consideraciones Preliminares

La Zona Arqueológica de Lambityeco, en Tlacolula de Matamoros, Oaxaca, comprende un área donde pueden observarse restos arqueológicos de dos apogeos. El primero y menos estudiado, Brawbehl-Yeguih, uno de los primeros asentamientos urbanos del Valle. El segundo momento, Lambityeco, posee una riqueza extraordinaria para comprender la reintegración de la región, después de los tiempos de Monte Albán como centro rector. En este trabajo se presentarán los resultados de la presencia de un elemento mesoamericano como el juego de pelota en un área escasamente estudiado para la época, así como las implicaciones preliminares, espaciales y temporales, que derivan de este hecho.

[95] *First Chair [237]* *see Bauer-Clapp, Heidi J.*

Ríos, Dante García [182] *see Stoll, Marijke M.*

Ripy, John [64] *see Mink, Philip B.*

Rissolo, Dominique [221] *see Glover, Jeffrey B.*

Ritchey, Douglas (Indiana University of Pennsylvania)

[168] *The Ahtna Fish Weir Site: Weir are the Fish?*

Recent investigations at the Ahtna Fish Weir Site (49-GUL-380), located along the Gulkana River in Gulkana, Alaska, provided a new basis for addressing Gulkana-Gakona Ahtna site use, subsistence, and seasonal movements. Results of test excavations including radiocarbon dating and faunal analysis are surprising due to the apparent lack of fish remains. These findings are compared to data from more fully excavated sites in the area including the Paxson Lake Point, Knoll, and Ringling Material Source sites, providing a better understanding of historic and prehistoric Ahtna land use strategies while suggesting a direction for future research.

Rius, Damien (Université de Franche-Comté), Didier Galop (Laboratoire GEODE, Université Toulouse II-le Mirail), Boris Vannière (Laboratoire Chrono-Environnement, Université de Franche-Comté) and Hervé Richard (Laboratoire Chrono-Environnement, Université de Franche-Comté)

[192] *Holocene Anthropogenic Fire Regimes as Documented by Sedimentary Charcoal and Pollen Analyses in the Pyrenees Mountains, France*

The onset of the Neolithic in Europe and the transition from hunting and gathering to agriculture as the main mode of subsistence promoted fire as a major tool for landscape opening and management. Natural fire regimes were then impacted by human activities depending on the ecosystem fire sensitivity. Intemperate mountain zones such as the Pyrenees, fire is a common tool for modern pasture management but we still lack a long-time overview of past fire use. This paper deals with human impacts on natural fire regimes by discussing the context of Holocene climatic and vegetation changes.

Rizvi, Uzma (Pratt Institute)

[189] *Crafting Resonance: Third Millennium BC Copper Arrowheads from Ganeshwar, Rajasthan.*

Crafting copper objects is often understood through technological ingenuity and metallurgical analysis. Using the corpus of copper arrowheads from Ganeshwar, Rajasthan as a case study, this paper investigates the simultaneous constructions of social and economic environments that reflect subjectivities within populations in which these objects were made, used, and circulated, through the concept of resonance. The notion of resonance is theorized as a form of power that the object has beyond its formal boundaries within larger planes of perception creating dynamic relationships between the object and the viewer/user/maker, illustrating cultural decisions based on forms of the object as vibrant matter.

Rizzo, Florencia [60] *see Scheinsohn, Vivian G.*

Robb, John (Cambridge University), Christopher Knüsel (University of Exeter) and Maryanne Tafuri (Cambridge University)

[237] *From bone to stone: processing the dead at Scaloria Cave, Italy*

Burial ritual in much of Neolithic Europe is often stereotyped as single burial in villages, but the reality was much more diverse and interesting. This paper discusses burial ritual at the Early-Middle Neolithic burial and "cult of water" site of Scaloria Cave, Italy. In contrast to rites practiced in nearby villages, the dead at Scaloria Cave were subject to a prolonged procedure of defleshing with stone tools and secondary deposition; detailed taphonomic study reveals different patterns for juveniles and adults, and through isotopic analysis we also investigate the relation between how the dead were treated and where they came from. This death ritual is put into the context of the well-known Neolithic way of life in southeastern Italy and the unique ritual meanings attached to Scaloria Cave.

Roberts, Christopher (Arizona State University) and Sean M. Bergin (Arizona State University)

[42] *Complex objects, entangled lives: using Germanic animal art as a record of culture contact in early medieval England.*

Individuals make choices on how to act based on their past experiences. When people from different cultural backgrounds meet, their personal experiences become entangled with new customs introduced by foreigners. Artistic systems preserve the way individuals entangled their past experiences as a series of references to other aspects of reality embedded in representational objects. By tracing how objects of art were fashioned to make references, and what these references emphasize or ignore, I hope to better understand the acculturation process of early medieval English people in the 5th and 6th centuries AD.

Roberts, Harry [265] *see McKillop, Heather*

Roberts, Heidi and Nikki Borchardt

[18] *When the Elders Speak, Just Listen*

Great Basin archaeologists, who focus on prehistory, spend the lion's share of their careers studying past Native American cultures. Their research typically explores spatial and temporal patterns of material

culture—artifacts and ecofacts—with the goal of reconstructing the past and understanding cultural change. This paper examines the unique ways that Native Americans and archaeologists view the past, and it explores the myth that traditional cultural knowledge was lost during the dark days of Euroamerican colonization. The paper also provides examples of how improved communication and cooperation can be mutually beneficial to Tribal groups and to the archaeological community.

[215] *Discussant*

Roberts, Theodore (PaleoWest)

[136] *Payson Tradition Fieldhouses*

PaleoWest conducted surveys for the USFS of nearly 7,000 acres near Payson, Arizona. Among the 143 newly discovered sites documented during these projects, we recorded 47 circular masonry structures. These fieldhouses date to the Payson Tradition (A.D. 1100-1250) which arose from the Central Arizona Tradition during the Star Valley Phase (A.D. 1000-1150). Despite numerous similarities, these fieldhouses display considerable variability, raising questions of function, chronology, and affiliation. This poster presents the results of a pilot study comparing the locations, morphology, and assemblages of these structures. The patterns observed suggest three fieldhouse types were occupied during this period.

Robinson, Brian (University of Maine)

[196] *The R.S. Peabody Museum: Foundations of Northeast North American Archaeology*

The Robert S. Peabody Museum was a major center for sustained and organized research on Northeastern archaeology throughout much of the 20th century, alongside extensive research projects across the Americas. Recent theoretical developments demonstrate the cumulative and critical nature of the Peabody's early research, including regional surveys, pioneering multidisciplinary research and the excavation of irreplaceable cultural resources. The legacy of maintaining copious documentation and collections is a service to Native American cultural studies, as it is a responsibility and financial challenge with changing missions of the museum. Highlights of Northeastern studies and recent research are presented.

[265] *see Surprenant, Ann K.*

Robinson, David (University of Central Lancashire)

[48] *A Land of Boundaries*

At the western boundary of North America and the Pacific, California is a land defined as a boundary. California provides an interface between coast and interior, maritime and desert, sea to Sierran peak. Within this physical bounded space, the rich tapestry of Indigenous California provides a complex mosaic of linguistic boundaries; in historical times, boundaries existed between indigenous and European ethnic groups. In this contribution, while discussing these physical and cultural boundaries, I traverse theoretical boundaries defining our research to see if blurring the line might be better than towing it. After all, boundaries are meant to be crossed.

Robinson, Eugenia and Gregory Borgstede (U.S. State Department)

[67] *Complexity and Regionalization in the Late Classic Maya Highlands*

The Late Classic period in the Maya highlands has been overshadowed by significant and long-standing research on the Preclassic and Postclassic periods. Recent investigations in two different highland areas, however, have underscored the regional complexity of the archaeological record during the Late Classic. In this paper the authors question highland homogeneity during this period by examining categories of material culture across the region. They hypothesize that the region displays great sub-regional heterogeneity rather than an overarching sociocultural uniformity as often implied by external perspectives.

Robles Castellanos, Fernando (Centro INAH Yucatán)

[14] *Discussant*

Robles Garcia, Nelly (Instituto Nacional de Antropología e Historia)

[95] *Atzompa en la definición urbanística y espacial de la antigua ciudad de Monte Albán*

El proyecto arqueológico Conjunto Monumental de Atzompa, en cuatro años ha recuperado datos de los diferentes aspectos de este componente de Monte Albán. Representante de la tradicional arqueología mexicana, este proyecto explora al sitio, lo interpreta, y lo restaura para ponerlo en valor. Constituye un ejemplo de la relación entre arqueología y desarrollo comunitario moderno. Los hallazgos ofrecen respuestas a preguntas que ya no había sido posible hacerle a la arquitectura anteriormente restaurada de Monte Albán. Estudios de la cerámica nos muestran diseños y elementos propios de este sitio, que en ocasiones contrastan con hallazgos realizados durante el proyecto original.

[95] *Second Organizer*

Rocek, Thomas (University of Delaware)

[53] *Housing on the Periphery: Pithouse Change and Variation in Late Prehistoric Southeastern New Mexico*

When John Speth decided to pursue research in the United States Southwest, he settled himself squarely on its geographic and environmental fringes in Southeastern New Mexico. There, he has documented striking, rapidly changing economic diversity. Having followed him into the wilderness, I explore one aspect of this diversity: the range and rapid shifts in architecture in the area. I examine the distribution and variation of pithouses across space, time and environment, considering the implication of these patterns for contrasting and shifting ecological and social adaptations, as well as for variation within these systems.

Rochette, Erick (Penn State University)

[116] *Out of control?: Rethinking assumptions about wealth goods production and the Classic Maya*

Objects crafted from jade played a prominent role in prehispanic Mesoamerica from at least the Middle Formative period (ca. 1000-400 B.C.). Based primarily on the consumption of jade artifacts by ancient Maya elites, scholars have argued that their production was under the direct control of elite members of society. Recent research in the Middle Motagua Valley and elsewhere suggest that the production of wealth goods varied much more widely than previously assumed. This paper brings together this recent evidence and cross-cultural

ethnographic data to propose new ways of conceptualizing the role of elite in Classic Maya wealth goods production.

Rock, Carolyn [81] *see* Prilliman, Keith L.

Rockman, Marcy (US EPA-NHSRC & AAAS/UCLA), Paul Pettitt (University of Sheffield) and Simon Chenery (British Geological Survey)

[142] *The Cretaceous and the Creswellian: New LA-ICP-MS Analysis of the Use and Movement of Flint during the Early Occupation of Late Glacial Britain*

Research is underway to reconstruct flint transport patterns and related landscape learning processes for hunter-gatherer groups who resettled Britain 14-15,000 years ago. A 2003 ICP-MS pilot study of Cretaceous Chalk flint suggested that flint exposures can be characterized into regions and that flint artifacts from five widely distributed late glacial sites appear to have been made from material most similar to flint from southwestern England. Results presented here include reanalysis of pilot study samples along with source material from 14 new exposures, artifacts from 13 late glacial sites, including recently excavated artifacts from sites at Creswell Crags.

Rodd, Ben [154] *see* Glidden, Catherine L.

Roddick, Andrew [267] *see* Klarich, Elizabeth A.

Rodman, Julie-anna

[195] *Boom and bust in White Pine County, Nevada*

In 1868 "Going to White Pine" became the rallying cry of miners throughout the west. Within two years the White Pine district grew to become the second largest population center in Nevada. The mining boom was short lived and by the early 1870s most settlements were abandoned as miners left for the next bonanza. The district died a quiet death when the last town was abandoned in 1885. The White Pine experience is an example of the dramatic rise and fall of mining communities and illustrates the rapid changes wrought by mining in the west.

Rodrigues, Teresa (Gila River Indian Community), Hoski Schaafsma and Alan Sinclair (Bureau of Indian Affairs, Pima Agency)

[192] *Landscape Ecology and Anthropogenic Fire in the Sonoran Desert: Hohokam and O'odham Management Strategies*

The Sonoran Desert offers an opportunity to study anthropogenic fire as a landscape management tool. Evidence for anthropogenic fire in the prehistoric Hohokam archaeological record has been documented and ethnographic data from the O'odham people informs us that there is a history of landscape management employing fire. The Gila River Indian Community Fire Archaeology Program, as part of ongoing research, combines ecological, archaeological, and ethnographic data to help construct an understanding of fire management in Central and Southern Arizona over the past several millennia.

Rodriguez, David (Pontificia Universidad Católica del Perú - PUCP), Reynaldo Bustinza Bustinza (Instituto Nacional de Cultura), Fredy Zegar Zegar

(Instituto Nacional de Cultura), Lucio De la Rosa (Instituto Nacional de Cultura) and Norfelinda Cornejo Cornejo (Instituto Nacional de Cultura)
[269] *Rediscovering Saqsaywaman: The Qochapata Sector*

Although located in the heart of Saqsaywaman Archaeological Park, the very existence of Qochapata remained unknown until very recently. Excavations since 2005 have revealed classical Inca-style buildings directly associated with a huaca situated alongside the Inca trail that leads to the Contisuyo. To understand the role and importance of the site, the Proyecto de Restauración y Puesta en Valor, Sector Qochapata had focused on spatial analysis relating the site's findings and architecture to the other sectors of Saqsaywaman Park. The first results of this research are shown in this contribution.

Rodriguez, Erin (University of California, Berkeley) and Kathryn G. Barca (George Washington University)

[55] *Haudenosaunee Women and Power in the Domestic Context: an archaeological case study*

Power systems and everyday household routines are not independent parts of societies but are highly interconnected. For the Haudenosaunee of eastern North America women, as well as households, were central to the regulation of power. In this study, ceramic and lithic attribute analyses are employed to show how activity areas can be used to study power systems by revealing patterns of household organization. The use of these analyses shows the importance of considering all available artifactual data, not only diagnostic pieces. This paper uses such information to propose how Haudenosaunee households maintained egalitarianism by dividing power among women.

Rodriguez, Monica (Centro Inah Yucatan)

[14] *"Identifying early movement population Among the Preclassic Maya"*

The excavations in the Preclassic period site of Candel, Yucatan, have led to the recent discovery of 11 individuals from middle preclassic and late preclassic. Using stable isotopes we evaluate evidence with the purpose of determine the place of origin of these individuals. This paper analyzes the biographical and associated ceramics data of the findings. We discuss if there was a ethnic shift between middle and late Preclassic times in the osteological sample gather at Candel in terms of the relevance of this population movement as indicator of early trade or contacts between mesoamerican population.

Rodríguez López, Miguel [204] *see* Pestle, William J.

Rodríguez Ramos, Reniel [204] *see* Pestle, William J.

Rogers, Alan R. [126] *see* Broughton, Jack M.

Rogers, Alexander (Maturango Museum) and Anna Steffen (Valles Caldera Trust)

[97] *How in the world does obsidian hydration work?*

Despite early reports of the demise of traditional optical obsidian hydration dating (OHD), today there are signs of rejuvenation. This paper takes a sober look at the current state of OHD methodology because the success of this

chronometer for nuanced questioning about prehistoric societies depends on soundness of method. We assess obstacles facing the technique by examining several sources of uncertainty and error—ranging broadly from measurement accuracy to modeling of the hydration process. Factors that need to be better understood include intrinsic variability (obsidian elemental composition and water content), environmental factors, and taphonomy (burial history: duration, disturbances, and depth).

Rogers, J. (Smithsonian Institution)

[54] *Settlements and Community in the Dynamics of Inner Asian Empires*

By 200 B.C. Inner Asia saw the development of expansive and complex political systems. At the heart of these polities was a concept of community that cross-cut important dimensions of residence, kinship, ethnicity, and political affiliation. For Inner Asia, community was linked to issues of mobility, scale, extra-local interactions, non-fixed property, dispersed control hierarchies, and the economics of multi-resource pastoralism. Based on a sample of 15 polities several patterns emerge that highlight how political processes altered and incorporated community and place in the building of fortified settlements, palaces, monasteries, and other constructions on the landscape.

[229] *Discussant*

Rogers, Julie [146] *see* Warden, Robert B.

Rogers, Michael (Ithaca College), Perri Gerard-Little (Cornell University), Kurt Jordan (Cornell University) and Kevin Hurley (Ithaca College)

[55] *Understanding the Built Environment at the Seneca Iroquois White Springs Site using Large-scale, Multi-instrument Archaeogeophysical Surveys.*

A landscape-scale conception of the Seneca at the White Springs site is important for understanding their built environment during a period of residential upheaval. During such periods, expedience in construction and interactions with multiple cultural traditions can lead to changes in settlement patterning and architecture. This paper reports on approximately five hectares of high-resolution, multi-instrument archaeogeophysical surveys. We will discuss the benefits of our mixed method approach (excavation, surface survey, historic research, and archaeogeophysics) and how the resulting expanded access to the site allowed engagement with layered, temporal contexts and the gathering of otherwise inaccessible information.

Rogers, Richard (USDA-NRCS) and Bruce Rothschild (Biodiversity Research Institute, University of Kansas Museum of Natural History)

[87] *Bejel on the West Coast of North America: Evidence for Pre-Columbian Trans-Pacific Asian Contact*

The spread of the disease, bejel, is blocked by cold winter regions. Its Pre-Columbian presence on the West Coast of North America (by 2000 to 4000 B.P.) indicates that it entered the New World by a route other than through the Bering Strait region. The "North Pacific Drift Hypothesis" proposes that bejel reached the New World via Asian vessels caught in the current of the North Pacific Drift. Evidence for this includes the strong geographic correlation between the ancient distribution of

bejel in the New World, the coastal region of North America brushed by the North Pacific Drift, and the distribution of wrecked junks documented by early European contact.

Rogoff, David (University of Pennsylvania)

[31] *Social Capital Exchange in the Classic Period El Paraiso Valley, Honduras*

Commodities are more than merely objects of economic transfer. Goods often carry value that stems from the context of their production or exchange. In instances when these other types of value are visible archaeologically we may be granted a window into how societies stratify not merely in vertical, but also horizontal ways. Following Bourdieu's concepts of social and cultural capital, voluntary group affiliations are examined at the Late Classic sites El Paraiso and El Cafetal, Honduras with the aim of determining how certain identities lead individuals to differentially value certain types of goods and specific exchange partners.

Rojas, Juan Martín [147] *see* Porcayo, Antonio

Rojas, Martin [224] *see* Eckhardt, William

Rojas Vega, Carol [241] *see* VanValkenburgh, Nathaniel P.

Roland, Jennifer (University of Pittsburgh) and Randi Gladwell (Vanderbilt University)

[70] *Domestic Use of Camelids in the 7.C9 Structure of Khonkho Wankane*

This paper will examine the camelid remains of an individual residential structure (Structure 7.C9) at the site of Khonkho Wankane, a Formative Period (1-400 AD) archaeological site located in the Southern Lake Titicaca Basin. This close up of a residential component of the broader Khonkho Wankane cultural center reflects the non-ritual utilization of large mammals. Domestic consumption patterns of this socio-politically incorporated structure can offer insight into the daily integration and interaction of households within the community.

Romano, Francisco (University of Pittsburgh) and Carlos Sanchez (Universidad Nacional de Colombia)

[93] *Kinship, Land, and Food Production. Socio-economic interactions in pre-Hispanic Alto Magdalena (Colombia) and Oaxaca (Mexico)*

The study of kinship has been a seminal element for the explanation of economic relations of production distribution and transmission of goods and services, of political integration of even larger communities, and ideological definitions. The study of kinship social relations is a fact of singular importance to understand the emergence and subsequent development of political economies, the institutionalization of leadership, and the establishment of social inequalities. This article explores the relationship among kinship, access to land, and food production as variables that influenced social interactions and transformations in the ancient societies of the Alto Magdalena (Colombia) and Oaxaca (Mexico).

Romano-Pacheco, Arturo [237] *see* Tiesler, Vera G.

Rondeau, Michael (Rondeau Archeological)

[120] *Fluted Point Studies in the Far West*

The study of fluted points in the Far West has been largely discouraged by the lack of Paleoindian sites with primary context, associated Pleistocene fauna and materials suitable for radiocarbon dating. As a result, the recognition of non-Clovis fluted point types in the Far West has lagged behind some other regions of North America. The CalFLUTED research project has studied 523 bifaces of which 458 are fluted. These specimens are mainly from California, Oregon and Nevada. Preliminary findings and lessons learned from these on-going studies are presented.

Roney, John [199] *see Hard, Robert J.*

Roney, John R. [244] *see MacWilliams, Arthur C.*

Roos, Christopher (Southern Methodist University) [192] *Discussant*

Roos, Christopher [199] *see Sullivan, Alan P.*

Root, Matthew [120] *see Reid, Kenneth C.*

Rorabaugh, Adam (Washington State University) [232] *Exploring Variation in Sociocultural Transmission Between Blade and Hafting Elements of Chipped Stone and Ground Slate Points in the Salish Sea, Northwest North America.*

On the Northwest Coast, archaeologists have documented clear shifts in social organization occurring over the past 3,000 years. The implications of this transition for social learning have been less explored. Cultural transmission models suggest that factors such as the growing importance of prestige may be reflected in material culture (biased transmission). Formed lithics from the Salish Sea were examined to determine whether learning followed models of neutral evolution (increasing variation) or directed change (promoting consistency), suggesting an increasing importance of prestige. These data suggest neutral evolution pointing towards a mosaic of factors contributing to the lithic technologies of the region.

Rosales Tham, Teresa [156] *see Gaither, Catherine*

Roscoe, James [239] *Discussant*

Rosen, Arlene (Institute of Archaeology (University College London)) [133] *Geoarchaeological Research in the Lands of Qufu*
Geoarchaeological research was undertaken around the historic center of Qufu in Shandong Province, China during the first field season of the "Landscape of Confucius" Project. This project seeks to understand the spiritual, historic, economic and political significance of this region surrounding the birthplace of Confucius. Geoarchaeological sections and cores show a number of Holocene geomorphological episodes. These were related to both environmental and human-induced landscape changes in the region. Preliminary results suggest one of the most significant landscape impacts was caused by major deforestation during the later Zhou or the Early Han period (first millennium BCE).
[133] *First Chair*

Rosen, Steven (Ben-Gurion University), Aaron

Shugar (Buffalo State College) and Jacob Vardi (Ben-Gurion University)

[22] *Wear, Attributes, and Types in Sickie Segment Analysis: Odellian Perspectives*

Analyses of glossy blades from Tell Jemmeh in southwestern Israel (5th through 2nd millennium BC) using techniques covering a range of scales and approaches confirms their primary function as sickle segments, and offers insights into such issues as relative use-life, value, and specialization. In particular, increased use-life is reflected both in heavier gloss, clearly a function of abrasion. There is a significant correlation between heavier gloss and increased edge retouch. These probably reflect increased value; both are correlated with greater production specialization. Use-life, value, and specialization all increase in time, reflecting a trajectory increasing economic complexity.

Rosenfeld, Silvana (Stanford University)

[70] *Foodways and Socio-politics in the Wari Empire: examples from the core and the province (Ayacucho and Cuzco, Peru AD 600-900).*

In Andean archaeology, the social meanings of food have been mainly examined through the analysis of culinary equipment- ceramic types and styles. However, our current understanding of Andean foodways can be improved by the addition of a zooarchaeological perspective. Examination of actual food refuse can reveal the factors that produce variation in the use of animals in daily and ritual consumption. In this paper I examine the ritual and quotidian animal use through the faunal analysis of three archaeological sites (Conchopata, Cotocotuyoc, and Chokepukio) to generate new information about how the Wari presence impacted the local communities in the province

Rosenstein, Dana (University of Arizona), Robert T. Downs (University of Arizona) and Pamela Vandiver (University of Arizona)

[5] *Structure and function: mineralogical analyses of tempers in Late Iron Age ceramics from southern Africa using optical petrography, x-ray diffraction and raman spectrometry*

Mineralogical analyses of ceramics from the Late Iron Age of southern Africa show that lustrous, platy and fibrous mineral tempers were commonly added to clay by the late 18th century CE. One indigenous response to colonialism was large-scale centralization. Settlement aggregation had significant effects on the scale of production at these new centers. Craft standardization is one solution for providing for the needs of a large population. These mineral inclusions changed not only the aesthetic properties of the pot, but also the mechanical and thermodynamic properties of the clay, decreasing crack propagation and thus potentially increasing vessel yield.

Rosenstock, Eva [26] *see Biehl, Peter F.*

Rosenthal, Jeffrey [256] *see Meyer, Jack A.*

Rossi, Stefano [218] *see Riel-Salvatore, Julien*

Rossillon, Mitzi [83] *see Huang, Jennifer K.*

Rost, Stephanie (Stony Brook University), David

Wright (Gila River Indian Community Cultural Resource Management Program) and M.K. Woodson (Gila River Indian Community Cultural Resource Management Program)

[115] *Application of Remote Sensing Technologies for Understanding Buried Canals on the Gila River Indian Community, Arizona*

This paper summarizes pilot research on the potential of remote sensing methods and data in detecting prehistoric canals in the Middle Gila River Valley, Arizona. Different types of widely available remote sensing imagery were researched for their efficacy as a methods-based solution to resolving broader themes of prehistoric settlement.

The results suggest that the resolution of the imagery is the most important factor in detecting prehistoric canals, but modern ground disturbances and ages of canals were also significant considerations. This study shows that the regional view provided by remote sensing enhances the chances of detecting buried prehistoric irrigation features.

Roth, Barbara (UNLV)

[94] *Foragers, Farmers, and In Between: Variability in the Late Archaic of Southern Arizona*

Recent decades have witnessed substantial changes in our interpretations of the Late Archaic of southern Arizona, as large-scale excavations of deeply buried sites have exposed settlements with unforeseen levels of agricultural production. Debate continues over whether these groups were foragers who farmed, dedicated irrigation agriculturalists, or something in between. Here I explore the data base from across southern Arizona, including both floodplain and upland settings, to illustrate that variability existed over time and space during the Late Archaic. The level of flexibility observed in these groups indicates that they were sometimes foragers, sometimes farmers, and sometimes both.

Rothenberg, Kara (University of South Florida)

[165] *Multi-elemental Chemical Analysis of Anthropogenic Soils from the North Plaza, Palmarejo, Honduras*

Plazas were important spaces for expressing power and social identity in prehispanic Mesoamerica. However, plazas can be analytically problematic, because they were often kept clean of material debris. Previous geoarchaeological studies of anthropogenic soils and sediments have shown that specific activities leave characteristic chemical signatures on prepared earthen surfaces. The research presented here uses soil chemical residue analysis and excavation data to examine use patterns in the North Plaza of Palmarejo, Honduras during the Late Classic period. The results indicate that activities in the northern half of the plaza were distinct from those that occurred in the southern half.

Rothschild, Bruce [87] see Rogers, Richard Anson

Rousseau, Mike (Antiquus Archaeological Consultants Ltd.)

[160] *Primary and Secondary Toolstone Sources and Pre-Contact Period Quarrying Behaviour in the Thompson River Drainage of South-Central British Columbia*

Several "primary" and numerous "secondary" tool stone quarries with fair to excellent quality silicates were exploited by First Nations people for the last 7000 years in the Thompson River drainage of south-central British Columbia. Many sources have stone with distinctive "signature" colours and textures that allow easy visual identification in archaeological assemblages. Descriptions of these sources, and the physical nature of stone type(s) found at them, are presented for future comparative and reference purposes. Models for local post-quarrying behaviour and inter-regional cultural dispersal of various distinctive lithic raw material types are also presented and discussed.

Rowan, Yorke [254] see Kersel, Morag M.

Rowe, Robert (Picketwire Research)

[201] *The Pit Cremation to Palette Ratios along Hohokam Canal 7 System*

During the summer of 2005, excavations within a portion of the Hohokam village of Las Canoas resulted in the recovery of 278 pit cremations. Associated with some of the cremations were palettes and the question was raised of why some and not all? During analysis, a ratio was determined between the number of pit cremations and the palettes. This same type of numerical analysis was conducted at other village sites along the same canal system resulting in basically the same ratio. Research suggests that the resulting ratio was based on status and clan associations of the individuals.

Rowe, Sarah (University of Illinois)

[73] *Excavations at Buen Suceso: Community and Tradition in Valdivia Society.*

The Valdivia phase of Formative Period coastal Ecuador consists of a remarkable suite of characteristics that persist over a broad span of time and space. This paper presents the results of excavations at Buen Suceso, a Middle to Late Valdivia (2400- 1600 B.C.) site in Manglaralto River valley, which provides new information on small village life during this time. Through comparison of materials recovered at Buen Suceso and other Valdivia sites in the area, I present an outline for understanding the dynamic maintenance of tradition within Valdivia society.

Roy, Natasha (Centre d'études nordiques, Université Laval), Najat Bhiry (Centre d'études nordiques, Université Laval) and James Woollett (Centre d'études nordiques, Université Laval)

[25] *Environmental changes along the northern Labrador coast*

In order to document the human/environment relationship along the northern Labrador coast (Canada), dendro-chronological investigations of archaeological wood and fossil wood were undertaken at the Oakes Bay 1 site. The site consists of seven semi-subterranean sod houses located on the north shore of Oakes Bay at Dog Island that were occupied by Thule and Inuit. The principal goal of this study is to document the impact of human land use on the environment during the last centuries. The hypothesis is that Thule and Inuit activity and the Little Ice Age triggered the opening of the forest in the area.

Rozo, Jennifer (University of Chicago)

[124] *Transforming Landscapes, Transforming Lives: A Political Ecology of Plants, People, and Pueblos in Spanish Colonial New Mexico*

When Spanish colonists arrived in New Mexico, they brought more than men and colonial ambitions; they carried with them a host of weeds, seeds, diseases, and animals that dramatically impacted the social and physical worlds of the Pueblo peoples they encountered. Relying on political ecology and landscape theory more broadly, this paper explores the theoretical foundations necessary for interpreting the role of ecology in human affairs in a dynamic and meaningful way, while still privileging human agency. The argument is illustrated using specific examples from pollen samples collected from seventeenth-century field contexts associated with the Pueblo village of Paako.

Rubin, Julio Cezar [68] *see Silva, Rosicler T.*

Rubin de la Borbolla, Sol (Sol Rubin de la Borbolla)

[21] *El árbol de las maravillas en la cultura otomí*

El aprovechamiento del maguey forma parte del conjunto de saberes provenientes de la tradición mesoamericana. A pesar de la pérdida de plantas y de sus muchos usos en la vida familiar y laboral, aún persisten localidades, en diferentes estados de la República, especialmente los ocupados por otomíes, en los que todavía se producen objetos artesanales y alimenticios para consumo interno y venta en el mercado. Los procesos y técnicas de explotación de la materia prima y de la elaboración de estos productos implican una larga tradición de conocimientos y saberes que es importante documentar como parte del patrimonio cultural.

Ruiz, Joaquin [135] *see Thibodeau, Alyson M.*

Runggaldier, Astrid (Boston University)

[165] *The domestic landscape of San Bartolo, Guatemala: Social memory Mechanisms in Contexts of Abandonment and Resettlement*

Culturally shared links to the past create social cohesion and a sense of community that shapes group identity. These concepts are materialized in public monumental landscapes, but the domestic sphere is no less instrumental in forging people's identity through daily practice. Extant evidence suggests that San Bartolo was abandoned in the Late Preclassic and resettled after four centuries of abandonment. Life histories of locales, particularly of the gradual changes in households on either side of the temporal spectrum, pre- and post-abandonment, embody the relationships of people with each other and with the memory of the inhabitants of the ancient settlement.

[165] *First Chair*

Runnells, Sarah [178] *see Flanigan, Kelli B.*

Rush, Laurie (US Army, Fort Drum)

[154] *Heritage Forward Lessons Learned*

Author will discuss military lessons learned in Iraq and Afghanistan with emphasis on current efforts in education for military personnel and support for heritage planning during global operations.

[185] *Discussant*

Russell, Ian (Brown University)

[254] *The ethics of oblivion and forgetting: Against archaeology's hypermodern heritage*

At the core of modern archaeology is a commitment to document and preserve evidence of the past, struggling against the tidal wave of modern progress. However, blind faith in the inherent good of generating social-scientific data simultaneously perpetuates the progress paradigm, constraining human understanding within linear, progress-based rationales inevitably leading to exclusion and oppression. Do all pasts need to be known or preserved? Should some pasts be forgotten? What are the pasts and heritages of archaeology itself that have been conveniently forgotten, and what insight do they bring to the behaviors, motives and implications of archaeological practice?

Russell, Matthew (University of California, Berkeley)

[153] *[An Archaeological History of Historical Archaeology: Using Real-Time Kinematic GPS for Site Mapping to Locate Previous Excavations]*

This paper highlights use of real-time kinematic GPS survey for archaeological site mapping to locate units excavated in the 1940s-1960s. It focuses on a current project at Point Reyes National Seashore in Marin County, California, which is exploring sixteenth-century intercultural engagements between California Indians and European explorers, to demonstrate how "old" archaeological projects can be reconstructed in a Geographic Information System (GIS) to evaluate earlier results and address new questions. The first step in digitally reconstructing prior excavations is to accurately position the previous units, and a detailed topographic map of a site may reveal their presence.

[48] *see Schneider, Tsim D*

Russell, Will (Arizona State University)

[36] *The Terminal Hohokam Classic Period as a Revitalization Movement*

Traditional inquiries into Hohokam societal "collapse" focus on environmental transformation and human inabilities to respond. Reconsidering social actors as active participants rather than unwitting victims may shed light on the Terminal Classic period and whether this was necessarily tragic for all those involved. I examine historic revitalization movements in small scale societies and develop a cross-cultural template that can assist in identifying similar phenomena in the archaeological record. By integrating this template with indigenous histories, I argue that the Hohokam "collapse" may be better thought of as "reorganization" initiated by a single man and supported by a disadvantaged subaltern.

[36] *First Chair [36] Second Organizer*

Ruuska, Alex (Northern Michigan University)

[60] *Intersubjectivity and the Act of Re-Membering Ancestral Drawings in Owens Valley, California*

Among the Numic peoples of the Great Basin and Colorado Plateau, animism has always served as an ontological foundation and organizing principal of people and places. This paper investigates how methodological processes rooted in Cartesian dualism potentially shape the epistemological frameworks through which scientific modes of inquiry commence. Exploring rock art sites from Owens Valley utilized in the 1890s Ghost Dance, I demonstrate natural mimetic acts of authorship employed by producers of rock art alongside analytical modes of

methodological alterity that potentially distance scholars from these originating acts.

Ruzicka, Denise (University of Nevada, Las Vegas)

[201] *Architecture and the Cosmos in the Mimbres Valley*

This study of a Late Pithouse Period Mimbres-Mogollon site in the American Southwest, the Harris Site in the upper Mimbres Valley in southwestern New Mexico, evaluates whether Mimbres pithouse groups observed astronomical phenomena and used such phenomena to guide the construction of their structures. The methods used in this investigation include evaluating whether the orientation and alignment of structures/houses as well as the presence of cultural features on surrounding ridge tops are related to the direction of celestial events. The results found an association between architecture and astronomy, as well as the landscape, at the Harris Site.

Ryan, Beth

[55] *An Archaeological Analysis of Haudenosaunee Responses to Settler Colonialism in Post-Revolutionary New York State, ca 1784-1826.*

A comparison of the material remains and spatial organization of Tonawanda, Canawaugus and Ohadi reveals a variety of subsistence practices, craft production and interaction with surrounding markets, while still indicating connections between these Haudenosaunee communities across reservation boundaries. Coupled with a reevaluation of the rates of Euro-American settlement around each community and technologies of colonization deployed by local settlers, the comparison of the material record constructs a picture of locally contingent responses to various degrees and types of settler colonialism, a picture vastly more complex than the "slums in the wilderness" often described in the secondary historic and ethnohistoric literature.

Ryan, Kevin (Missoula Fire Sciences Lab, RMRS, USFS)

[192] *Effects of fire in an archaeological context*

Fire, man's first tool, was used to improve hunting, gathering, and grazing forage; clear, sites for agriculture; provide community-protection buffers, and for cooking, heating, tool-making and a variety of other cultural purposes. Fire affects vegetation dynamics at the site and landscape levels and has feedbacks to the climate system. Fire also affects cultural materials, a number of artifact/site dating techniques, and site formation and degradation processes. Thus, dynamic interactions between fire, vegetation, climate, and archaeology/anthropology are complex. This paper provides an overview of vegetation-fire dynamics, the effects of fire on archaeological materials and methods, and potential for confounded interpretation.

Ryan, Kimberley (EcoPlan Associates, Inc. / Northern Arizona Univ) and Reese Cook (EcoPlan Associates, Inc./Northern Arizona University)

[135] *The Shortest Distance: New Evidence Suggesting Prehistoric Line-of-Sight Relationships among the Phoenix Basin Hohokam*

Ongoing research of the Hohokam "northern periphery" presents the opportunity to explore several long-standing questions regarding ground stone exchange. This poster depicts recent survey findings where a series of

prehistoric features denote a northwest-southeast trail alignment. Various routes may have been followed south to the Salt River Valley, however, this alignment presents an intriguing possibility: by further projecting the trail to the southeast, it leads directly to the Classic Period site of Pueblo Grande. Perhaps a fanciful notion, but the idea that "northern periphery" inhabitants included ground stone manufacturing specialists who may have supplied the irrigated valley is not.

Ryan, Stacy [52] see Clark, Jeffery J.

Ryan, Susan (Crow Canyon Arch. Center and University of Arizona)

[117] *Syntagms, Paradigms, and Practice: A Semiotic Approach to Kiva Architecture during the Chaco-to-Post-Chaco Transition in the Northern San Juan Region*

Architecture is socially produced, resulting in a built environment that expresses ideologies through its design, construction, and intended use. The reproduction of social structure depends on the repetition of behavior through time and architecture promotes the repetition of ideologies by fixing them in space and providing a context for practice. This paper will explore ancestral Pueblo society during the Chaco-to-post-Chaco transition with the goal of identifying patterns of continuity and change in social practices, specifically those manifested in great house kiva architecture in the central Mesa Verde region. A theoretical application rooted in semiotics and practice will be used.

[117] First Chair

Ryzewski, Krysta [163] see Pecoraro, Luke J.

Sabloff, Jeremy (Santa Fe Institute) [18] *Discussant* [225] *Discussant*

Sabo, III, George [204] see Horton, Elizabeth T.

Sabol, Donald [163] see Buck, Paul

Safi, Kristin (Washington State University)

[257] *Examining Processes of Migration and Friction Routes to Explain the Depopulation of the Mesa Verde Region*

During the Pueblo III period, populations shifted from Mesa Verde into the Rio Grande. Overall timing and sizes of group movement out of Mesa Verde are unresolved, due in part to a distinct shift in material culture between the regions during this time. This analysis calculates potential routes of movement across the two regions to determine the extent to which the physical landscape influenced how and where migrants moved. These routes are used to predict the locations of "intermediate" migration sites to evaluate the potential timing and size of group movement and identify remnants of the transition in material culture.

Saha, Kakoli [85] see Stockton, Trent

Saitta, Dean (University of Denver)

[198] *Surplus, Class, and Causality*

The concept of surplus raises questions about the relationships by which the fruits of human labor are produced, distributed, and consumed in society. These "class" relationships are obscured by theoretical

approaches that employ traditional evolutionary types, as well as continuous variation anti-types, to compare and contrast ancient social formations. Ideas about how people are differentially-positioned within class relations of surplus flow and the non-class political, economic, and cultural processes that sustain such relationships—ideas first explored by Marx and refined by subsequent generations of historical anthropologists—offer better frameworks for theorizing past organizational variation and change.

Sakai, Sachiko (UC Santa Barbara)

[62] *Applications of Optically Stimulated Luminescence (OSL) Dating in the Study of Change in Clay Source of Olivine-tempered Ceramics in the Arizona Strip and Adjacent Areas in the American Southwest*
Olivine-tempered ceramics are widely distributed in the Arizona Strip and adjacent areas between A.D. 100 and 1300. The source of olivine is thought to be at Mt. Trumbull and Tuweep in the Arizona Strip. LA-ICP-MS and INAA suggest that at least six clay sources were involved in the production of olivine-tempered ceramics found in the Mt. Trumbull and lowland Virgin areas 100 km west of Mt. Trumbull. In this paper, I will particularly examine how this production and distribution pattern changed over time. Optically stimulated luminescence dating is used to determine the age of the sherds from each compositional group.

Salas, Miriam [243] *see Shiratori, Yuko*

Salazar, Diego (Universidad de Chile), Hernán Salinas, José Berenguer and Diego Morata

[267] *The organization of copper mining during the Late Period in the Loa River (northern Chile)*
Inka expansionism into northern Chile has been traditionally interpreted as a consequence of the state's interest in controlling copper mining production. In this paper we will evaluate this claim by presenting results on two research projects in the Upper Loa River, where evidence of pre-Inka and Inka mining and metallurgy have been studied. We will concentrate on the continuities and transformations seen in mining technology and organization prior to and after Inka rule. Research funded by Proyecto Fondecyt 1100905 and Proyecto Arqueológico El Abra.

Salazar, Diego [224] *see Salinas, Hernan P.*

Saldana, Melanie (California State University Los Angeles)

[266] *Tools at Midnight Terror Cave: A Search for Function and Meaning*

Artifact analyses are too often descriptive exercises that contribute little to our understanding of sites. A fairly elaborate assemblage of tool forms was recovered from Midnight Terror Cave, Belize. An analysis of the context and distribution of these artifacts offers insights into activities in the cave. For instance, distribution of grinding stones suggests that these implements were used in a rather restricted area. Patterns of breakage raise interesting questions that remain to be answered. Finally, beyond function, the meaning of certain artifacts, such as bifaces, requires closer consideration.

Saldaña, Fausto [156] *see Perez, JoEllen M.*

Salgán, Laura [62] *see Gil, Adolfo*

Salinas, Hernan (universidad de chile), Diego Salazar (Universidad de Chile), Jean-Louis Guendon (Université de Provence), Valentina Figueroa (Université de Paris 1 Panthéon-Sorbonne) and Donald Jackson (Universidad de Chile)

[224] *Hunter-Gatherer-Fisher Mining during the Archaic Period in Coastal Northern Chile*

We present evidence of an iron oxide mine in Taltal, in the arid coast of northern Chile, exploited by local hunter-gatherers during the Early Archaic (ca. 11,000 B.P.) and then during the Late Archaic (ca. 4000 B.P.) periods in order to extract pigments (hematite and goethite) used mainly for symbolic purposes. We explore the socioeconomic organization of this early maritime adaptations and the role played by iron oxide mining in local settlement systems. Research Funded by Proyecto Fondecyt 1080666.

Salinas, Hernán [267] *see Salazar, Diego*

Sall, Candace (University of Missouri)

[62] *Pigments and Pastes: Polychrome Ceramics from the 76 Draw Site, New Mexico*

The black and red paints on Ramos and Gila Polychrome sherds were sampled using LA-ICP-MS to compare their elemental concentrations. INAA was used on these same sherds' pastes to compare their chemical fingerprints. The 76 Draw site is a Medio Period (A.D. 1200-1450) Casas Grandes site in Luna County, New Mexico.

Salomon, Frank (University of Wisconsin-Madison) [15] *Discussant*

Salwen, Stephanie (University of California, Los Angeles)

[106] *Asphaltum Exchange and Emergent Complexity in California*

This poster considers role of asphaltum trade in the emergence of complexity in Chumash society. The Chumash, sedentary complex hunter-gatherers in Southern California, underwent a rapid social re-organization (1150-1300 AD) leading to institutional hierarchy and formal craft specialization. This study considers a material basis for this change, based in part on changing access to high-quality, naturally-occurring asphaltum (bitumen). High-quality asphaltum (1) was a fundamental part of plank boat production, leading to improved trade capabilities and the demonstration the social status of boat owners, and (2) was itself a limited, naturally circumscribed resource distributed via exchange networks.

[123] *see Arnold, Jeanne E.*

Sammons, D. [59] *see Lohse, Skip*

Sampson, Christina (University of Michigan) and Lisa Young (University of Michigan)

[135] *Flooding and Ritual Closure at a Small Pueblo in Northeastern Arizona*

Communities cope with the effects of natural disasters on both practical and spiritual terms. This research explores the response to the destruction of a ceremonial structure (kiva) by flooding at Creswell Pueblo, a late 12th and

13th c. A.D. village in the Homol'ovi area of northeastern Arizona. Based on analysis of the kiva fill and associated faunal remains, we discuss the evidence for ritual closure of the structure. A comparison with other kivas at this site and later Homol'ovi pueblos illustrates how the destruction by flooding contributed to ritual treatment of the structure.

San Roman, Manuel [231] *see* *Martin, Fabiana M.*

Sanchez, Carlos [93] *see* *Romano, Francisco E.*

Sanchez, Guadalupe [147] *see* *Carpenter, John P.*

Sanchez Fortoul, Carmen (University of Leicester) [243] *Mayapán Pottery Materials: A Petrographic Analysis*

This research employed petrographic analysis and x-ray diffraction to investigate ceramic production strategies, number of compositional groups, and characteristics of the tempering materials at Mayapán, the last Maya capital. The research found: (1) few tempering minerals – calcite and some dolomite; (2) multiple clear-cut compositional groups based on the different textural varieties of calcite/dolomite – micrite, sparite, monocrystalline, and discrete elements (peloids, micro-fossils); (3) association composition and ware-varieties; and, (4) multiple pottery producers selecting different calcite varieties for different wares. The results also suggest that the Late Postclassic shift to limestone-only temper was technologically advantageous but required greater skill.

Sanchez Miranda, Guadalupe (Museo de Sonora INAH), John Carpenter (INAH Sonora) and Vance Holliday (University of Arizona)

[120] *Sonoran Clovis Groups: Lithic technological Organization and Land Use*

Clovis groups inhabited the Llanos de Hermosillo and surrounding areas of north-central Sonora, Mexico 13,000 years ago. Water, lithic sources and prey animals are the most important commodities for hunter and gather groups. Clovis groups encounter in Sonora a pristine landscape with very little competition, including all the important commodities for survivable; they were able to acquire an extensive knowledge of the landscape and exploit an extensive territory of approximately 25,000 square kilometers. Base upon lithic organization and land use patterns we present some interpretations about the regional integration and interaction of the Sonoran Clovis groups.

[147] *First Chair [147] First Moderator*

Sánchez Mosquera, Amelia [103] *see* *Damp, Jonathan E.*

Sanders, Donald (Institute for the Visualization of History, Inc.)

[146] *Real-Time 3D Modeling for Archaeological Excavation, Analysis, and Publication using the REVEAL Documentation and Display System*

Excavations must be recorded accurately and completely; these are time-consuming necessities. Making sense of strata and architecture, and knowing where to dig next are overwhelming tasks. REVEAL coordinates all datatypes processed during and after

excavations. REVEAL includes semi-automated tools to document sites, trenches, and objects, to record excavation progress, to analyze of evidence, and to create 3D models and virtual worlds--all of which occur as the excavations unfold. Testing hypotheses against the excavated material happens in real time, in 3D. This presentation will demonstrate some of the new applications available in REVEAL designed specifically for archaeological fieldwork.

Sandor, Jonathan (Agronomy Department, Iowa State University) and Jeffrey Homburg (Statistical Research, Inc.)

[199] *Agricultural Soils of the Prehistoric Southwest: Known Unknowns...*

Soils form the foundation of agriculture, including the diverse farming systems of the prehistoric Southwest. Yet many questions about them remain unanswered. Were certain natural soils sought out, and if so, why? How were soils and landscapes deliberately altered and managed for agriculture? Can prehistoric soil productivity be estimated? How did prehistoric farming impact soil resources? Although headway has been made in addressing these questions, there is much more to learn. Quantitative studies and advancements needed on a host of soils-related questions about Southwest prehistoric agriculture, and their relevance to current arid land agriculture, are presented to spur further work.

[223] *Discussant*

Sandor, Jonathan [223] *see* *Homburg, Jeffrey A.*

Sands, Ashley [158] *see* *Dodd, Lynn S.*

Santarone, Paul (University of Wyoming), E.S. Lohse (Idaho State University) and Coral Moser (Idaho State University)

[262] *The Role of Non-Bifacial Tools and Marginal Tool-Stone in Paleoindian Retooling: Insights from the Buried Beach Site*

Excavations at the Buried Beach Site, near Castle Rock, Idaho provided an opportunity to examine Paleoindian non-biface tool production on the periphery of the Great Basin. Cobbles with marginal flaking characteristics were systemically reduced to produce durable, short-use tools. Using traditional lithic analytical procedures and use-wear analysis we show that tool-stone selection among Paleoindians was more complex than selecting for ultra-high quality materials. "Marginal" tool-stone likely played an important role in the retooling of the Paleoindian tool-kit. This aspect of Paleoindian archaeology is often overlooked. Sites may go unrecognized due to the archaeologist's conception of Paleoindian tool-stone selection and use.

Sapp, William (US Forest Service)

[125] *Finding the Palace of a Lambayeque Lord*

In 1999 a team of Peruvian and American archaeologists excavated an adobe and stone structure in the Jequetepeque Valley on the North Coast of Peru that was found to be a country palace associated with the Lambayeque culture. The palace was built around AD 1050-1100 and continued to be occupied by a Lambayeque lord throughout the Chimú and Inka occupations of the valley. The architectural form of the palace is identical to the main compounds at Pacatnamú

suggesting that Pacatnamú was a palace complex maintained for indigenous Lambayeque royalty and not a ritual center as was once posited.

Sargent, Heather (University of Idaho)

[175] *Bullets, Buttons and Beads: the History and Archaeology of Fort Spokane, Washington.*

The US military created Fort Spokane in 1880. Located in Northeastern Washington, the fort has served many purposes, including military occupation, an Indian boarding school, headquarters for the Colville Indian Agency, a tuberculosis sanatorium and a hospital. This paper discusses the complex history of Fort Spokane from 1880 to 1929. In addition, it presents a summary of past archaeological work done at the fort and an overview of the 2010 excavations. The recent work focused on the Indian boarding school period, a period that has not been extensively studied but is an important chapter in the history of the region.

Sarjoughian, Hessam [36] *see Bergin, Sean M.*

Sarmiento, James (Native American Studies, UC Davis)

[145] *A Grapheme Inventory for Maya Hieroglyphic Database*

Thompson's 1962 catalog was for decades the standard for transcribing Maya texts. Advances in decipherment and the appearance of many new texts required an improved sign list. The New Catalog of Maya Hieroglyphs developed by Macri with Looper and Vail is a new method of coding graphemes, mitigating ambiguities and omissions in earlier coding systems. This presentation describes the complex interrelationship between the New Catalog and the Maya Hieroglyphic Database, and discusses the importance of the database and the improved sign list for further archaeological and linguistic research.

Sasaki, Ken-ichi (Meiji University)

[149] *Autonomous Role of Peripheral Polities in the Process of State Formation in Japan*

A widespread distribution of highly-standardized keyhole-shaped burial mounds in Japan may indicate the appearance of inter-regional alliances among polities in the late third century A.D. under the central polity in the Kinai region. However, in northern Kyushu, the Kinai-type pottery was imitated with the local pottery production technique. The Kinai-type pottery made locally in northern Kyushu was further exported to Iki island on the way to the Korean peninsula and the Korean peninsula. This indicates that polities in northern Kyushu were probably independent from the central polity in Kinai, and remained autonomous in terms of pottery production.

[149] *First Chair*

Sassaman, Kenneth (Univ of FL - Anthropology) [232] *Discussant*

Sattenspiel, Lisa [124] *see O'Brien, Meghann C.*

Sauer, Jacob (Vanderbilt University)

[241] *Resistance and Resilience in Indigenous Social Systems: The Araucanian Example from South-Central Chile*

Resilience theory states that the resiliency of a system is

seen in the ability to "absorb disturbance and reorganize while undergoing change so as to still retain...the same function" (Walker 2004). The colonization of the Americas tested the ability of most indigenous cultures to absorb change without creating a different or hybridized social system. The Araucanians of southern Chile, the only indigenous group in the Americas to reject the Spanish and maintain extant cultural organization for more than 300 years, are in the unique position to demonstrate the utility of resilience theory in explaining cultural continuity while confronting outside pressure.

[241] *First Chair*

Savelle, James (McGill University) and Arthur Dyke (Geological Survey of Canada)

[126] *Paleontological and zooarchaeological evidence for Thule Inuit as bowhead whale hunters*

In attempting to interpret the role of the bowhead whale in Canadian Thule Inuit subsistence economies, many archaeologists are cautious when dealing with the question of hunting versus scavenging. The argument is usually made that it is difficult, if not impossible, to distinguish between whale bones derived from beached carcasses and bones derived from active hunting. This paper examines stranding rates, associated taphonomic processes and mortality profiles of naturally-stranded Holocene bowheads in the Canadian Arctic. It is concluded that whale bone assemblages at the vast majority of Thule sites can only be explained through active hunting.

Savelle, James [159] *see Johnson, Donald S.*

Sawchuk, Elizabeth (University of Alberta)

[109] *Analysis of Human Remains at the Mlambalasi Rock Shelter, Tanzania*

The Mlambalasi site in the Iringa region of Tanzania has a rich archaeological record that spans the historic period, Iron Age, and Later Stone Age. Excavations in 2002, 2006, and 2010 yielded commingled fragmentary human remains from a minimum of three individuals. The archaeological context of the remains and preliminary radiocarbon dates on shell suggest at least two of the skeletons could be Pleistocene Later Stone Age in origin. This poster presents the results of my MA research which focuses on the excavation and osteological analysis of the remains as well as interpretation of their context within the rock shelter.

Sayre, Matthew (Stanford University) [45] *Discussant*

Scaglione, Richard [73] *see Cordero, Maria-Auxiliadora*

Scarborough, Vernon (University of Cincinnati), Liwu Grazioso Grazioso (University of San Carlos), Brian Lane (University of Hawaii), Christopher Carr (University of Cincinnati) and Eric Weaver (University of Cincinnati)

[119] *The Wet and the Dry: Water Management and the Built Environment at Tikal*

Water management studies provide a highly productive assessment of landscape modification at Tikal—a water system based on seasonal rainfall collection rather than riverine canal diversion. Although the ancient Maya utilization of their water resources differs from most well-reported systems associated with the archaic state from

either semiarid or temperate locations, it does provide a well-designed adaptation to the neotropics. Recent survey and excavation suggest that early colonizing efforts were precipitated, in part, by natural seeps at the summit of the present-day ridge top at Tikal, though subsequent Classic constructions sealed the spring-like activity to accommodate an increasing population.

[119] *Third Organizer*

Scarborough, Vernon [119] *see Tankersley, Kenneth B.*
[119] *see Weaver, Eric M.* **[119]** *see Carr, Christopher*
[119] *see Coronel, Eric G* **[119]** *see Lane, Brian G.*

Schaafsma, Hoski [192] *see Rodrigues, Teresa Lee*

Schaafsma, Polly (Research Associate, MIAAC)

[18] *Rock Art's Century and More: Discovery and Research in the Great Basin and Northern Southwest*
 This essay reviews the development of rock art research in the Great Basin and on the Colorado Plateau. Rock art documentation in these areas has evolved from articles inspired by the curiosity of canyon explorers, to efforts by archaeologists to describe and classify what initially appeared to be chaotic data. Now with a grip on cultural categories and time frames, hypotheses and methods have been developed to address the meaning and functions latent in these sites. In conjunction with other archaeological remains, rock art addresses the cognitive dimension of past cultures, posing new questions for the future.

Schach, Emily (Arizona State University)

[141] *A multi-regional analysis of Ohio Hopewell gender*
 This study approaches difference in gender relations between sites in the Scioto river valley and the Miami drainages. Burials from the Scioto river valley had greater disparity between sexed burials, with males buried more often with artifacts and possessing a greater average number of artifact classes. The Miami drainages had less disparity although the pattern there has more artifacts with female burials. Few artifact classes were buried exclusively with one sex. Gendered difference is emphasized in the Scioto river valley, but not in the Miami drainages, which may be a reflection of greater fluidity in gender in the Miami region.

Schachner, Gregson (UCLA), Wesley Bernardini (University of Redlands), Kellam Throgmorton (University of Colorado-Boulder) and Matthew Peeples (Arizona State University)

[134] *Revisiting Twin Butte: Early Pueblo Period Archaeology in the Petrified Forest of Arizona*
 Some of the first large-scale investigations of early Pueblo (A.D. 600-900) period archaeology in the northern Southwest occurred in the Petrified Forest and Puerco River Valley of eastern Arizona, yet the results of these studies have been overshadowed by research in the northern San Juan and Chaco regions. Recent collaborative efforts by archaeologists from multiple institutions have provided an opportunity to reinvestigate early Pueblo period settlement structure and patterns in the Puerco area. In this poster, we report mapping and surface recording efforts at Twin Butte, one of the largest early Pueblo villages in eastern Arizona.

[134] *Second Chair* **[134]** *Second Organizer*

Schachner, Gregson [134] *see Theuer, Jason G.*

Schaepe, David (Sto:lo Nation), Michael Blake (University of British Columbia), Sue Formosa (Views / Sto:lo Research & Resource Management Centre), Dana Lepofsky (Simon Fraser University) and Anthony Graesch (Connecticut College / UCLA Cotsen Institute)

[232] *Exploring Xelhálh as a Place of Centralized Power among the Sto:lo-Coast Salish*

Current theoretical perspectives of limited hierarchy and communalism in precontact Central Coast Salish society do not accommodate findings from Xelhálh, a Late Period fortified settlement in the Lower Fraser Canyon. Terra forming, massive rock walls and terraces, in- and above-ground houses, earthen burial mounds, and potential palisades demonstrate control of labour and concentrated power at a scale not previously documented in the Sto:lo-Coast Salish landscape. Employing a multi-scalar, community-settlement approach, regional comparison of Xelhálh with neighboring settlements suggests it was a place of centralized power, collectivity and hierarchy, contrary to expectations based on current models of Central Coast Salish political-economy.

Schaepe, David [232] *see Graesch, Anthony P.*

Scharffenberg, Melissa (Georgia State University)

[195] *Investigation of the Lacy Hotel Site: A 19th Century rural dwelling in Kennesaw, GA*

The Lacy Hotel was a part of the "Great Locomotive Chase", a significant historical event in Kennesaw, Georgia during the Civil War (1861-1864), yet little is known of this site. The Lacy Hotel was a boarding house that operated for roughly six years until General William Tecumseh Sherman burned it in 1864, leaving speculation to its exact location. This research centers on investigating the historical records along with the archaeological fieldwork in order to provide a more detailed analysis of civilian life associated with hotels during the Civil War period in Georgia.

Scheel-Ybert, Rita [253] *see Bianchini, Gina F.*

Scheiber, Laura (Indiana University) and Judson Byrd Finley (University of Memphis)

[57] *The periphery of several, center of none? High-altitude archaeology in the Absaroka Mountain range, Wyoming*

The Rocky Mountain ranges of Wyoming are often considered part of the far western periphery of the Northwestern Plains, a formidable boundary prohibiting or at least constraining cultural interaction. This area is likewise described as the far eastern periphery by scholars working in the Great Basin and California, the distant limit of the Numic expansion some (debatable) time ago. We here present the results of five field seasons of archaeological research within 8,500 acres of the Greater Yellowstone area, primarily focused on late period occupation of the high country by small groups of Mountain Shoshone and their neighbors.

[84] *Discussant*

Scheinsohn, Vivian (INAPL-CONICET/ University of Buenos Aires), Sabrina Leonardt (University of

Buenos Aires) and Florencia Rizzo (INAPL)**[60] *Rock Art in NW Patagonia***

The conspicuous presence of rock art in Andean NW Patagonia, a region where archaeological visibility is an outstanding problem given the density of forest cover, has put us to study rock art in an intensive way. For the study area, some authors had argued that in Late Holocene times, rock art is actually reflecting the arising of territorial circumscription and ethnicity demarcation. But we had also considered other kind of information transmitted by means of this evidence. In this paper we will discuss and evaluate these hypotheses by means of cladistics and endemism analysis and bring new results obtained.

Schieppati, Frank [60] *see Hayward, Michele H.*

Schiffer, Michael (University of Arizona)**[10] *Saltations in Technological Change***

This paper focuses on how we might explain long-term trends in an aggregate technology's use-related performance characteristics. It is suggested that sustaining any such trend over long periods requires episodic saltations in component technologies. Beyond invoking saltations as the immediate cause of a technological trend, a complete explanation identifies contextual--often social--factors that drive the process. This mode of explanation is illustrated by fast ocean liners of the 19th and 20th centuries.

Schilling, Timothy [246] *see Hildebrand, Elisabeth A.*

Schindler, Bill [61] *see Cunnar, Geoffrey E.*

Schlanger, Sarah (NM Bureau of Land Management)**[50] *Developing and Applying Consistent Management Practices for National Historic Trails***

The Department of Interior Bureau of Land Management (BLM) administers three National Historic Trails and manages 5,342 miles of national historic trail routes on the public lands. These trails commemorate significant developments and events in American history and they contain unique, irreplaceable resources. Because these trails have heritage, recreation, and archaeological values, historic routes and their associated resources are challenging to deal with using conventional cultural resource management tools. BLM is using ARRA funding and staff resources to develop and apply new management tools that include consistent standards for trail resource documentation, protection, use, and preservation.

Schleher, Kari [264] *see Snow, David H*

Schmader, Matthew (City of Albuquerque)

[241] *Coronado in the Tiguex Province: Assemblage and Tactics of a 16th Century Spanish Entrada Site*
Investigations conducted at Piedras Marcadas Pueblo, a large pre-Contact village in the middle Rio Grande valley, have yielded results with major implications for researching the 1540-1541 expedition led by Francisco Vázquez de Coronado. The Coronado expedition spent two winters along the Rio Grande while searching for new civilizations. Piedras Marcadas contains the largest number of artifacts found at any Coronado expeditionary site. The 16th century assemblage of metal items and

possible associated stone tools will be examined in relation to subsurface adobe architecture. Tactical organization of the largest land-based exploration launched by Spain in the American west will be detailed.

Schmidt Dias, Adriana**[101] *Hunter-gatherer occupation of South Brazilian Atlantic Forest: archaeology and paleoenvironment***

The archaeological studies in South Brazil indicate a long term adaptive relation between hunter-gatherers societies and the Atlantic Forest, which presence since Pleistocene-Holocene transition contributed to the initial settlement of this region. Throughout the Holocene, most of the captured taxons of vertebrates belong to forest habitat. On the other hand, lithic industries' characteristics points to a stabilized pattern of technological organization and comparative analyses indicate an analogous technological style, suggesting a model of social organization characterized by a high degree of intergroup interaction, regulated by strategies of frequent residential mobility in a large regional territory
[101] *First Chair*

Schmitt, Dave (Desert Research Institute) and Karen Lupo (Washington State University)

[126] *On Early and Middle Holocene Environmental Change in the Eastern Great Basin: Some Additional Small-Mammal Data from Bonneville Estates Rockshelter*
Excavations at Bonneville Estates Rockshelter, Elko County, Nevada recovered rodent remains from stratified deposits spanning some 12,000 14C years. Specimens from the late Pleistocene-early Holocene include a number of species adapted to moist and cool environs containing grasses and sagebrush. Shortly after 9000 14C BP these mammals became locally extinct, or nearly so, taxonomic diversity declined, and the region became dominated by species adapted to xeric habitats. The Bonneville Estates early small-mammal record is similar to the records reported at Homestead and Camels Back caves and provides corroborative data on regional environmental change and mammalian responses to middle Holocene desertification.

Schmitt, David [180] *see Rhode, David*

Schneider, Adam (University of California-San Diego)**[258] *Divine Kingship, Crisis, and the Locus of Political Agency in Ancient Mesopotamia***

Divine kingship was an anomalous and short-lived form of rulership in ancient Mesopotamia associated with the rise of the earliest empires in that region. This study explores the reasons behind the apotheosis of certain Mesopotamian kings by contextualizing that process within specific historical moments of political crisis. I argue that the sacralization of rulers in Mesopotamia was a strategic political exercise in crisis management, in which royal propaganda was used to reorient the locus of political agency away from the gods and focus that agency on embattled kings as a means to bolster their eroding political positions.

Schneider, Joan (California State Parks, Colorado Desert District)

[224] *Making Milling Equipment: Division of Labor inferred from the Archaeological and Ethnographic Records*

Human behavioral patterns related to the division of labor at quarries and workshops can be teased from archaeological data, ethnographic reports, and historical accounts. This paper uses these sources to infer and explain how activities related to the procurement and use of milling equipment can enrich understanding of social structure across cultures and time periods.

Schneider, Seth (University of Wisconsin-Milwaukee) and John D. Richards (University of Wisconsin-Milwaukee)

[104] *The Schlage Site Ceramic Assemblage: A Comparative Perspective on a New Oneota Variant in Eastern Wisconsin*

The Schlage site in Fond du Lac County, Wisconsin is a Developmental Horizon Oneota site dating from calibrated A.D. 1250 – 1380. The pottery assemblage is dominated by shell-tempered, round-shouldered globular jars with decoration limited to various forms of crimping on the interior and exterior rim margins. This decoration is atypical for eastern Wisconsin Oneota and suggests that these groups may include more distinct regional variants than previously thought. This poster provides a morphological and compositional characterization of the Schlage site pottery in the context of other Eastern Oneota ceramic assemblages.

Schneider, Tsim (UC Berkeley), Sara Gonzalez (Vassar College), Kent Lightfoot (UC Berkeley), Lee Panich (Santa Clara University) and Matthew Russell (UC Berkeley)

[48] *A Land of Cultural Pluralism: Case Studies from California's Colonial Frontiers*

Culture contact and colonial encounters in California unfolded within a variety of pluralistic social settings between an array of agents with different material traditions and agendas. Case studies in this paper range from sixteenth-century encounters on the California coast to later, more permanent colonial contexts and showcase cultural diversity before and after colonial settlement. In addition to a long-term perspective, a unifying theme for each case study is expanding the spatial dimensions of these interactions. To this end, we address social innovations and diverse consequences of culture contact and colonialism both at and away from loci of encounter.

Schneyder, Stacy (ICF Jones & Stokes), Kevin Bartoy (Washington State Department of Transportation), J. Tait Elder (ICF Jones & Stokes), Melissa Goodman-Elgar (Washington State University) and Melissa Cascella (ICF Jones & Stokes)

[3] *At the Interface of Interpretations: The Use of the Single Context Recording System and Micromorphology in Urban Archaeology*

Interpretations of site formation processes are typically dependent upon detailed macroscopic observations of archaeological stratigraphy. For urban historical sites, the single context recording system provides a framework to record, characterize, and interpret the events that create stratified deposits. Additional data can be gained from historical research and micromorphological analysis. The use of single context recording in concert with historic research and micromorphological analysis has allowed for a more robust interpretation of a late nineteenth-century site in Seattle, Washington. This poster

examines the complimentary use of these techniques for interpreting a dynamic urban historic landscape.

Schnitger, Frederik W. [115] *see Kappers, Michiel*

Schoeninger, Margaret (UC-San Diego), Melanie Beasley (UC-San Diego), Andrew Froehle (UC-San Diego) and Corina Kellner (Arizona State University)
[255] *Diet reconstruction using carbon stable isotope in bone collagen and apatite*

Recent analyses of bone collagen of animals (rats, mice, & pigs) consuming varied experimental diets show strong correlations between the carbon stable isotope ratios in bone apatite and collagen. When the diet protein source is controlled, animals eating C3 protein fall on a line parallel to and separate from animals eating C4 protein. Comparing human data to these patterns identifies human diet protein. In contrast, new data for free-ranging animals do not compare favorably with these patterns and we discuss the implications of these findings for reconstructing human diet.

[255] *First Chair*

Schoeninger, Margaret [233] *see Somerville, Andrew D. [233]* *see Kellner, Corina M.*

Schofield, John

[254] *The persistence of place, beyond preservation*

It is an interesting contradiction that archaeologists who once led the way in promoting preservation of cultural heritage are now developing ways of 'managing change', ways that enable the persistence of place (its form or character) without necessarily resorting to formal means of heritage protection. This is a comparatively recent change, corresponding to a perceived decline in state authority, at least in the UK and arguably across larger parts of the developed world. This contribution will assess these new approaches and consider what they tell us about contemporary society and the heritage sector in particular.

Schollmeyer, Karen (Simon Fraser University/Arizona State University) and Jonathan C. Driver (Simon Fraser University)

[126] *Settlement Patterns, Source-Sink Dynamics, and Artiodactyl Hunting in the Prehistoric U.S. Southwest*

A number of studies in the U.S. Southwest suggest artiodactyl populations in areas of dense human settlement experienced periods of resource depression. Most assemblages from prehistoric villages in this region are dominated by lagomorphs and sciurids, with relatively few artiodactyls. However, some sites and geographic areas show greater artiodactyl relative abundance. We examine factors influencing this variability, including the effects of human population size, settlement patterns, and the locations of less heavily hunted "reserve" areas. We relate the results to conservation biology studies on the effects of source-sink dynamics on the long term sustainability of large versus small mammal hunting.

Scholnick, Jonathan (University of Arizona)

[235] *Spatial Patterning and Stylistic Diffusion in New England Gravestones*

A recent study of New England gravestones examines the social processes that underpin the diffusion of innovative decorative styles. This classic archaeological

example of diffusion illustrates the spatial and temporal patterning of styles. This study uses new survey data that documents gravestones in eastern Massachusetts cemeteries, which expands Deetz and Dethlefsen's database. The spatial and temporal patterns of different decorative motifs are used to evaluate models of innovation diffusion, particularly the social contagion of stylistic preferences.

Schon, Robert (University of Arizona) and Emma Blake (University of Arizona)

[89] *The Marsala Hinterland Survey: Report of the 2008-2010 Seasons*

The Marsala Hinterland Survey is a diachronic project investigating the terrain adjacent to the coastal town of Marsala in Sicily. The region has a complex past, changing hands between multiple foreign powers and experiencing waves of migration from throughout the Mediterranean. Limited work has been done in the area and burgeoning development places the archeological record there in jeopardy. Our survey monitors long-term demographic change by revealing shifting settlement patterns and local responses to external stimuli. This paper summarizes our findings from the Paleolithic through Early Modern periods with added emphasis on the Iron Age and Roman occupations.

Schöne, Bernd [205] *see Burchell, Meghan*

Schou, C. [59] *see Lohse, Skip*

Schoville, Benjamin (Arizona State University)

[59] *Taphonomic and Behavioral Formation of Edge Damage on Middle Stone Age Points from Pinnacle Point 13B and Die Kelders cave 1*

Identifying taphonomic and behavioral processes on patterns of lithic edge wear is complicated by potential equifinality in edge damage morphology. Comparing assemblage distributions of wear within an image referenced GIS is one method for estimating the probability of assemblage patterns resulting from behavioral and taphonomic processes. Here I compare the frequency and distribution of edge damage from two MSA assemblages of lithic points from South Africa. Patterns referable to use as cutting tools rather than a taphonomic origin seems to be predominant. Bringing tool wear observations into a uniform spatial structure is one avenue for standardization of lithic use-wear analysis.

[108] *see Oestmo, Simen*

Schreiber, Katharina [229] *see Edwards, Matt*

Schreiner, Amanda (CUNY Graduate Center), John Steinberg (University of Massachusetts), Douglas Bolender (University of Massachusetts) and Thomas McGovern (University Center and Graduate School, CUNY)

[42] *Zooarchaeology of the Viking Age and Later in Skagafjörður*

An initial examination of the animal bones from a sample of the farmsteads investigated during the Skagafjörður Archaeological Settlement Survey suggests general continuity across the socio-economic spectrum of sites during the Viking Age. The presence of pig specimens at many of the farmsteads, even after 1300 AD, is quite remarkable. Also interesting is the paucity of older sheep

remains, which is in stark contrast to the Myvatn area.

Schroeder, Bryon (University of Wyoming), Richard Adams (OWSA) and Orrin Koenig

[101] *Are we There Yet? Numic Expansion Revisited in the Wyoming Region*

The archaeology of the Wind River Range has an untapped potential to contribute to the origins of the Numic. This talk will outline the current understanding of Numic expansion focusing on the timing of migration, archaeological identification, and subsistence strategies. It is my aim to show that current work done in the Wind River Range challenges conventional ideas of a Great Basin centered homeland for Numic groups, aids in a clearly understanding of the material manifestation of Numic groups, and reinforces historically recorded subsistence strategies.

Schroedl, Gerald (University of Tennessee)

[121] *Patterns of Inequality at the Brimstone Hill Fortress, St. Kitts West Indies*

Brimstone Hill Fortress (1690-1854) was a multiethnic community of British Infantry, Artillery, and Engineers Officers, enlisted soldiers, whites and blacks of the St. Kitts militia, black soldiers of the West India Regiments, and enslaved African workers owned by the British military or conscripted from plantations for maintenance and construction projects. Excavated contexts (1996-1999, 2004-2008) evidence the hierarchical and oppressive differences in material, subsistence, architectural, spatial, and social patterning among the forts occupants. Black militia and soldiers were afforded some advantages of British soldiers not available to enslaved African workers at Brimstone Hill.

[121] *First Chair [121] Second Organizer*

Schroedl, Gerald [121] *see Ahlman, Todd [121]* *see Braly, Bobby R.*

Schroedter, Tim (Dipl. Praehist.)

[25] *Charcoal analysis in SE Europe - human exploitation of wood resources*

The multi-disciplinary research-project "Tell in the woods? Anthracological investigations in SE Europe and Turkey" deals with the woodland-management of Neolithic and Chalcolithic societies. As part of this project charcoal samples from several sites from a settlement-chamber in Bosnia and Herzegovina are included. First results show an open landscape with manifold vegetation. The investigation of different sites allows the comparison of several charcoal-assemblages and thus reflects different habitats in a limited area. To estimate the degree of selection according to the natural composition of woody species off-site samples are analyzed.

Schuetz, Eric (UW-Milwaukee) and Eric Burant (University of Wisconsin-Milwaukee)

[104] *Analysis of Phytoliths from the Schlage Site in Fond du Lac County, Wisconsin*

Soil samples from seven pit features excavated at the Developmental Oneota Horizon Schlage site in Fond du Lac County, Wisconsin were processed to recover phytoliths. A total of 16 morphometric phytolith types were identified. Phytoliths present suggest the use of a variety of wild grasses, including a possible specimen of

wild rice, as well as cultigens including corn and beans. Together with evidence from the faunal assemblage and macro-botanical assemblage, the phytolith data suggests that the Schlage site Oneota subsisted on a broad spectrum, mixed diet of wild plants, cultigens, and animal foods.

Schuldenrein, Joseph (Geoarcheology Research Assoc), Michael Aiuvalasit (Geoarchaeology Research Associates) and James Pritchard (Brockington and Associates)

[80] *Prehistory and Geoarchaeological Investigations Along the Central Mississippi Valley: Recent Advances*
Integrated archaeological and geoarchaeological investigations were undertaken for Section 110 studies in the Central Mississippi Valley. The project was performed for the U.S. Army Corps of Engineers (St. Louis). These studies tested for rarely explored deeply buried surfaces. This work provided insights not only for project specific landscape histories, but also for the development of resource management policies and the regional archeological record. A major contribution of this integrated investigation is the reconstruction of alluvial sequences along the Wapanocca Bayou in Arkansas. These deposits archive a relict channel of the Mississippi River, directly related to Nodena Phase occupations.
[249] *Discussant*

Schulenburg, Marcus (University of Wisconsin-Milwaukee)

[187] *Ceramic Analysis in the Miami Valleys: Using Clay Sourcing to Determine Intraregional Contact within the Fort Ancient Tradition*
Fort Ancient (AD 1000-1670) cultural identity has traditionally been examined through ceramic materials. This paper will continue that tradition, utilizing a combination of XRF and XRD techniques to compare ceramic vessels to potential raw materials gathered from the Great and Little Miami Valley regions. This will be combined with the use-life, pre-existing stylistic analyses, and deposition events to illustrate the operational sequences associated with the Fort Ancient ceramic tradition. This will then be used to examine issues of trade, contact, movement and identity within the Anderson Phase of the Fort Ancient tradition.

Schultze, Carol (Historical Research Associates, Inc.)
[267] *Silver Mines of the Northern Lake Titicaca Basin, Peru*

This paper reports results of archaeological reconnaissance of silver mining districts in the Northern Lake Titicaca Basin, Southern Peru. Intensive precious metals mining in the basin is reported for the Inca and Colonial periods. However, archaeological evidence points to a much greater antiquity of metals exploitation. Further investigation of these mining districts can address questions of the origins of metallurgical technology; the timing and intensity of cultural interactions with metalworking zones of the north coast; the organization of production in later periods, as well as political and ideological aspects of precious metals in the pre-Hispanic Andean world.

Schurmans, Utsav [176] see Hicks, Tyler

Schurr, Mark (University of Notre Dame) and

Della Cook (Indiana University)

[226] *The Temporal and Cultural Contexts of the Enigmatic Cremation Burials from the Yokem Site, Illinois, USA*

The region near the confluence of the Mississippi and Illinois Rivers in southwestern Illinois, USA has produced evidence that fire was used in mortuary rituals for several thousand years, and that cremation was employed in different ways at different times. Burial attributes, radiocarbon dating, stable isotope analyses and electron spin resonance are all used to place a poorly understood cremation feature located between mounds 6 and 7 at the Yokem site within the regional temporal and cultural contexts. By considering the feature in context, we can better understand the changing role of fire in mortuary ritual through time.

Schurr, Mark [35] see Alonzi, Elise E.

Schwake, Sonja (Kenyon College) and Gyles Iannone (Trent University)

[191] *Destruction Events and Political Truncation at the Little Kingdom of Minanha, Belize.*

Sometime in the early 8th century A.D., the little Kingdom of Minanha emerged in the frontier between the competing great kingdoms of Naranjo and Caracol. After roughly a century of success, Minanha's royal residential courtyard was in-filled with rubble, and some key facades and stela monuments were destroyed. Although elite building programs also came to a halt, a significant population did continue to live in the vicinity for a century or more after the fall of the kings. The implications of this data set are discussed, with particular emphasis on what it tells us about the infamous Maya "collapse."

Schwartz, Steven [123] see Guttenberg, Richard B.

Schwartz, Glenn (Johns Hopkins University)

[152] *Remembering and Forgetting the Dead in 3rd-2nd Millennium BC Syria: Umm el-Marra 2010 Results*
Recent excavation and analysis at Tell Umm el-Marra, Syria, provide evidence on a diversity of practices for memorializing as well as obliterating the memory of the Bronze Age dead. From an Early Bronze Age (third millennium BC) elite mortuary complex, bioarchaeological, faunal, and DNA analysis provide data on ancestor veneration and intentional desecration and on changes in their materialization through time. In the Middle Bronze Age (early 2nd millennium BC), continuity and discontinuity are both apparent in performances of commemorating and forgetting the dead, including new evidence of human sacrificial practices.

Schwendler, Rebecca (National Trust for Historic Preservation)

[154] *Using Backyard Archaeology to Foster Cultural Resource Preservation*

Archaeological resources are often overlooked in American towns. While a lack of attention can help protect them from damage, it can also lead to disinterest in the past and to the destruction of prehistoric and historic sites in the name of progress. Here I discuss my attempt to use people's fascination with archaeology to promote cultural resource preservation. By excavating and giving public talks about early 20th century privy deposits on my property in a former coal mining town in

Colorado, I try to engage community members in the past and create new advocates for archaeological and historic preservation.

Schwitalla, Al (Al W. Schwitalla Garcia and Associates, Inc.)

[194] *Sub-regional Patterns of Health Stress in Central California*

The pioneering osteological research by Peter Schulz (1981) and his subsequent collaboration with David Dickel and Henry McHenry in the seminal 1982 symposium Paleopathology at the Origins of Agriculture (Cohen and Armelagos 1984) have for many years served as the largest and only cumulative references of diachronic health patterns among hunter-gatherers from central California. This presentation introduces current bioarchaeological results of health stress based on 16,000 individuals that lived in the region from 3000 B.C. to A.D. 1899 and discusses what factors contributed to index prevalence variation given the sub-regional diversity found in central California.

Schwitalla, Al [11] see Jones, Terry L.

Scott, Ann (The University of Texas at Austin)

[266] *Some Preliminary Observations on the Midnight Terror Cave Ceramic Assemblage*

During three seasons of work at Midnight Terror Cave in Belize over 29,000 sherds were collected. While the assemblage is dominated by Late to Terminal Classic wares, Middle Preclassic sherds were identified and a substantial Early Classic component was documented. Ceramic densities are highest in areas of the cave where the density of human bone is lowest suggesting a clear differentiation in the utilization of space. A modified version of type-variety analysis was used to record both vessel form and surface finish. In addition, data were collected on post-production modifications that allow us to offer some insights into vessel use.

Scott, John (University of Bristol, Metcalf Archaeology)

[258] *From Trajan to T. E. Lawrence: 2000 Years of Conflict Stratigraphy in Wadi Yutm, Southern Jordan*
Archaeological reconnaissance of Wadi Yutm in southern Jordan in 2010 observed Trajan period Roman forts and modern defensive structures likely occupied during the Six-Day and Yom Kippur wars. Iron Age and Islamic Period fortifications may also be present, suggesting a 2000 year stratigraphy of conflict within the wadi. The reconnaissance was preparatory to a 9000 acre survey of Wadi Yutm to document the Ottoman strongholds of Kethera and Khadra attacked by Lawrence and the Arab guerrillas during WWI and other conflict sites.

Scott, Paul [46] see Holstad, Emily

Scott, Rachel (Arizona State University)

[16] *Farmer, Warrior, Cleric, King: Multiple Masculinities in Early Medieval Ireland*

While the study of gender has become well established in archaeology, the recent introduction of third-wave feminist theory challenges scholars to produce more nuanced interpretations of past gender identities. In this paper, I explore our ability to recognize difference within gender categories through an analysis of men and male

roles in early medieval Ireland (c. AD 400-1200).

Integrating the human skeletal data with the historical, archaeological, and iconographic evidence reveals the influence of age, status, and other social categories on masculine identity. A bioarchaeological approach thus allows discussion of multiple masculinities in early Irish society.

[217] *Discussant*

Scott, Randi (Forensic Archaeology Recovery)

[76] *Beyond the Crime Scene: Humanizing Forensic Archaeology*

The benefits of archaeologies' methods and technologies are increasingly becoming more important and valuable in crime scenes and criminology as a whole. Forensic Archaeology encompasses many different areas from scene recoveries to expert witnesses. One area of importance that cross all facets and tend to be overlooked is "involvement". This paper is intended to explore issues forensic archaeologists encounter with families and communities during and after a casualty has occurred. It will address whether it is necessary and part of forensic archaeologies responsibility to act as facilitators or contributors in the healing and/or closure process to the living.

Scott, Sarah (Wagner College)

[47] *Slave Labor: Uruk Cylinder Seal Imagery and Early Writing*

The emergence of cylinder seals in southern Mesopotamia in the fourth millennium BCE was a new technology vital to temple accounting. During the proto-literate period the type of information carried by the seals and their impressions changed; as this happened the first numerical and inscribed 'proto-writing' also emerged. Assyriologists have examined the development of the numerical systems and 'proto-writing,' while Art Historians and Archaeologists examine the meaning and function of seal imagery. This paper analyzes Uruk seal imagery in conjunction with numerical and 'proto-writing' technologies to reveal the interconnectedness of seal and inscription as a larger accounting system.

Scott-Ireton, Della (Florida Public Archaeology Network) [268] *Discussant*

Searcy, Michael (Brigham Young University)

[264] *Decorative Renascence: Tracing Early Ceramic Designs into the Late Prehistoric Period in the U.S. Southwest/Northwest Mexico*

Cordell (1997) has characterized the late prehistoric period (A.D 1200-1450) in the U.S. Southwest/Northwest Mexico as one of crystallization when "many specific forms, designs, symbols, or motifs can be traced to much earlier periods" but, "they came together in new ways." This paper traces the emergence of designs and motifs among earlier ceramic traditions, such as Mimbres and Ancestral Puebloan, and their later appearance on Salado and Casas Grandes pottery. I use design analysis to explore the spread of styles and symbols throughout time and space and show how these methods contribute to interpretations of interregional interaction and cultural continuity.

Seeley, Kent [19] see Stevens, Stanley M.

Seelinger, Evelyn [230] *see Wells, Helen*

Segre, Carlo [220] *see Friedman, Elizabeth S.*

Seinfeld, Daniel (Florida State University)

[157] *Maize Agriculture and the Origins of Sociopolitical Complexity at San Estevan, Belize*

This paper explores role of maize agriculture in the political economy of Formative period Mesoamerica. Molecular and paleoethnobotanical analyses demonstrated consistency in maize use throughout the Formative period at San Estevan, Belize. This work suggests that agricultural practices were largely unchanged by the emergence of sociopolitical complexity during the Late Formative period. Local hydrological conditions likely facilitated a consistent and decentralized agricultural system. Comparison of these findings to work in other areas of Mesoamerica shows that a variety of agricultural strategies were used to accommodate local environments. This diversity affected developmental trajectories of different sites and areas.

[157] *Second Organizer [157] Second Chair*

Seldin, Abigail (University of Oxford)

[196] *Open Doors: A Retrospective on the R.S. Peabody Museum of Archaeology*

As a student at Phillips Andover, my experiences at the Peabody Museum both crystallized my passion for anthropology and launched my academic career. Equipped with a foundation in archaeology and hands-on curatorial experience, I began co-curating an exhibition at the University of Pennsylvania Museum as an undergraduate. Now a three-year gallery exhibition, "Fulfilling a Prophecy" is the first show at the Museum to be co-curated by Native individuals. This work provided the basis for my successful Rhodes scholarship application and acceptance to Oxford's doctoral program. My paper will address the preparation I received at the Peabody for subsequent work.

Sellen, Adam (Universidad Nacional Autónoma de México)

[51] *Murky Waters. Revisiting the Looting of the Sacred Cenote of Chichén Itzá, Yucatán*

The U.S. Consul Edward H. Thompson's looting of the Sacred Cenote of Chichen Itza between 1904 and 1911 is well known to Mesoamerican scholars. Although its story has been told from many perspectives—including Thompson's own unapologetic imperialism and the understandable resentment of Mexicans outraged at the looting of their archaeological heritage—its outlines are widely accepted. Using archival sources, my study takes a fresh look at the case and analyzes the role of the Mexican government in the loss of the artifacts. I also provide new evidence for a long-standing question: Who owns Chichen Itza?

Semon, Anna (University of North Carolina)

[187] *Exploring Late Prehistoric Vessel Assemblages in the Coastal Southeastern US*

Ceramic vessel assemblages are best characterized by studying whole pots. But what happens when there are no whole pots to analyze? Rim sherds offer the next best dataset to assess vessel assemblages. By measuring partial orifice diameters and rim shapes we obtain information about vessel size and form. This paper

presents recent analysis of Late Prehistoric rim sherds, which characterize the Irene Period vessel assemblage from St. Catherines Island, Georgia. These results are compared with other Late Prehistoric coastal vessel assemblages and indicate few vessel forms, but a variety of sizes.

Senn, Matthew (The Ohio State University)

[13] *Early-Middle Holocene Political Economies on the Margins: Incense Kingdom Formation among Nomads in Southern Arabia*

Factors driving political economy formation are often assumed in models of emerging states, but cannot be accepted as implicit without rigorous testing on a variety of data sets. Mobility requires substantial consideration. This paper applies surface analysis in a Geographic Information System to a prevailing model of primary state formation with site data from Yemen and Oman. Nomads present a challenge to archaeologists, confounding attempts to describe and compare economic activities of societies characterized by high residential mobility. Nomads also present a challenge to rulers of emergent states experimenting with newer and more complex methods of administrative control.

Serafin, Stanley (Macquarie University) and Carlos Peraza Lope (Centro INAH - Yucatan)

[56] *Bioarchaeological Insights into the Population Structure of Mayapan*

This study integrates analysis of heritable dental metric traits and archaeological context to reconstruct the population structure of the Postclassic regional Maya capital of Mayapan. The hypothesized existence of a cosmopolitan society composed of biologically distinct social groups is evaluated through assessment of odontometric variation at the site, subgroup, and individual levels of analysis. Comparison is made to previous attempts to identify ethnohistorically known social groups based on architectural, artifactual and mortuary patterns. Implications of the present findings for reconstructions of Postclassic transformations of Maya society are discussed.

Sereno, Paul (University of Chicago), Lamy Khalidi (University of Chicago), Christopher M. Stojanowski (Arizona State University) and Hélène Jousse (Muséum national d'Histoire naturelle - UMR 7209-CNRS)

[133] *Human Succession under Environmental Stress at the Holocene Lake-Margin Site of Gobero, Republic of Niger (7600 – 2000 cal BC)*

Recent excavations at Gobero, an occupational and cemetery site complex in the Sahara Desert, provide a comprehensive record of human succession and cultural complexity during the early to mid Holocene. The site preserves intact burials with grave goods and well preserved faunal and material culture remains. Ninety absolute dates distinguish two successive occupation phases. Both produced pottery and were culturally distinct in terms of subsistence strategies, stone resource acquisition, tool production and consumption, and mortuary practices. Human population continuity across a severe arid episode is possible, although a more diverse community of peoples lived there during the mid Holocene.

Sergheraert, Maelle (ASU)

[58] *Architectural style evolution: Calixtlahuaca's monumental structures through ages.*

Prior to Mexica conquest in 1478, Calixtlahuaca was known as Matlatzinco, a powerful regional capital in the Toluca valley of Mexico. This paper will examine the architectural evolution of the site's monumental structures through time, highlighting the existence of four construction stages. Then, I will ask the question of continuities and changes in Calixtlahuaca's architectural style after Aztec Imperial conquest.

Serra Puche, Mari Carmen (IIA-UNAM)

[21] *Archaeological Otomi TLAXCALA*

The archaeological evidence founded in excavations of housing units-Cacaxtla Xochitécatl make us believe in the possibility that their inhabitants were Otomi. The use of agave for the production of mezcal, residential construction and weaving, as well as female figurines with embroidered clothing similar reasons to those currently used by Otomi women are archaeological indicators of this ethnic affiliation. The study of ethnohistory that mention the presence of Otomi groups in Tlaxcala and ethnoarchaeological work we are doing in some communities of speakers of Otomi help strengthen the hypothesis of ethnic identity-Cacaxtla Xochitécatl

[21] *Second Organizer*

Seymour, Elizabeth [177] see Jones, Emily Lena**Shackley, M. (UC, Berkeley)**

[97] *Obsidian Provenance Studies in the North American Southwest: Provenance Triumph and Archaeological Success*

For the last 30 years the North American Southwest has seen remarkable success in knowledge of archaeological obsidian sources from only a few in the early 1980s to over 60 source groups today. With this database, a number of archaeological problems come to the fore including social and gender organization among the Preclassic Hohokam, large scale Paleoarchaic procurement range reconstruction, understanding of Late Classic period migration and territoriality, and significant secondary deposit studies. This paper will be a summary of 30 years of geological and archaeological work on obsidian in the Southwest, and where we might go from here.

Shackley, Steven [52] see Clark, Jeffery J.**Shah, Sudha (University of Michigan/ Brockington and Associates), Inna Burns (Brockington and Associates, Inc.) and Damon Jackson (Brockington and Associates, Inc.)**

[81] *Fieldwork and Large Scale Predictive Modeling: Section 110 Survey for the Vicksburg District, USACE*
As part of an American Recovery and Reinvestment Act (ARRA) enacted by Congress in 2009, Brockington and Associates conducted intensive cultural resources survey of 6,762 acres at five Vicksburg District Corps reservoirs in Arkansas and Mississippi. The survey areas were located in the Caddo River Valley and the Loess Hills and North Central Hills of the Upper Yazoo Basin. We identified 31 archaeological sites that were not previously known, including a significant multi-component prehistoric midden near the Yocuna River. The project

also included a large scale diet-based archaeological predictive model for the entire Vicksburg District.

Shakour, Katherine

[162] *Perspectives On Community Identity: The Slate Quarries Peoples and Archaeology Heritage*

This project investigates archaeology heritage in the Slate Quarries region of Ireland. It examines the topics of heritage at different levels, meaning and its construction, and local perception of archaeology. This project explores archaeology as an heirloom for the people in the region and the dynamic nature of meanings, associated with archaeology. It explores the factors that contribute to site significance while delving into the multi-scalar nature of meaning, memory, and community identity for a unique area in Ireland. The goal is to understand how this particular community, given the individuality of the history and archaeology, relates to their archaeology.

Shakour, Katherine [107] see Conway, Meagan**Shan, Chen [218] see Gao, Xing****Shantry, Kate (Northwest Archaeological Associates) and Brandy Rinck (Northwest Archaeological Associates)**

[124] *Using Delta Geomorphology to Formulate a Working Model of Buried Archaeological Sites: A Case Study from the Puyallup Delta, Tacoma, Washington*
Geomorphic changes on the Puyallup River delta in Tacoma, WA, influenced the availability of resources for valley occupants during the middle to late Holocene. Geomorphic and archaeological data from three recently identified sites on the delta can be used to study site formation and subsistence strategies that focused on littoral resources within a fluid settlement system that included short-term and long-term residential bases and specialized seasonal sites. The history of deltaic progradation, non-seismic deltaic subsidence, and tectonic subsidence provides chronologic limitations for occupation, expectations for land use, and is a useful tool for interpreting archaeological sites in similar environments.

Shapiro, Lisa (Pacific Legacy, Inc.) and Shelly Tiley (Pacific Legacy, Inc.)

[83] *Carson Lake Archaeology & Ethnography*
This poster summarizes the Class III archaeological and ethnographic study of 30,000 acres within the Carson Lake and Pasture title transfer area in Churchill County, Nevada. The Bureau of Reclamation is transferring the lands to the State of Nevada for use as a State Wildlife Refuge. The study was conducted by private contractors Pacific Legacy, Inc., and North State Resources, Inc., on behalf of the Bureau of Reclamation, Mid Pacific Office. Documentary research and interviews with the Fallon Paiute-Shoshone Tribe enhance interpretation of the high archaeological site density in the project area.

Sharp, William (USDA-NRCS)

[87] *In the Footsteps of Rafinesque and Webb*
Working as an archaeologist for Kentucky NRCS it has been a privilege to visit or rather revisit archaeological sites that form the foundation for our current understanding of the state's past. This paper describes

site revisits and discusses limitations faced, then and now.

Sharratt, Brenton [257] *see* Noll, Christopher D.

Sharratt, Nicola (University of Illinois-Chicago)

[39] *Tiwanaku state fragmentation and domestic practice; collapse phase households in the Moquegua Valley, Peru*

During the collapse of the Tiwanaku state ca. AD 1000, populations in the Moquegua Valley abandoned colonial enclaves in the middle valley and established small, nucleated villages on the coast and in the upper valley. Existing funerary evidence indicates that post-collapse communities adhered to ancestral Tiwanaku rituals. This paper examines the impact of political fragmentation on daily life. Comparison of recently excavated household data from the upper valley with other collapse phase villages, as well as state period sites, suggest that although domestic practices were rooted in earlier customs, different diaspora populations responded to collapse in particular ways.

Shaw, Justine (College of the Redwoods) and Johan Normark

[67] *Settlement dispersion as a strategy to cope with recurrent droughts*

A fluctuating settlement pattern in the Coahuah region in the Northern Maya Lowlands indicates a possible long-term strategy to deal with recurrent droughts. Settlement aggregation near permanent water sources occurred during periods with few droughts (the Classic period). Dispersion of settlement occurred during periods with droughts, most notably during the Terminal Classic period. This pattern differs from the Colonial period when such dispersion did not take place locally, probably due to the Spanish reducción program. This suggests that a Prehispanic organizational strategy to cope with recurrent droughts existed and that the Spanish presence discouraged the use of this strategy.

Shea, John (Stony Brook University)

[22] *What Difference does 1.3 Million Years Make? Lithic Evidence for Behavioral Variability in the Jordan Valley*
Paleolithic archaeologists are increasingly trying to adopt explanatory models from behavioral and evolutionary ecology. In "retooling" lithic analysis for this task, we have to start thinking about the elementary costs and benefits involved in knapped stone technology. This paper compares cost/benefit variation in flake production strategies at two open-air sites in the Jordan Valley dating 1.3 million years apart from one another. Ubeidiya is an Lower Paleolithic site in Israel at which remains of *Homo erectus/ergaster* have been recovered. Ar Rasfa is a Middle Paleolithic site in Jordan attributable to either *Homo neanderthalensis* or early *Homo sapiens*.

Sheets, Payson (University of Colorado)

[8] *Seeking Durable Indicators of Manioc Processing: Obsidian Cutting Edges*

Analyses of sediments from the known manioc beds have produced few microbotanical indicators of manioc. An obsidian blade from a probable harvest processing area sustained an unusual "frosted" usewear from massive accumulation of linear striations parallel to the edge. Of all the usewear types in Lewenstein's replicative

study (1987), it is closest to her cutting of manioc husks (cortex). The planting bed soils at Ceren have small amounts of minerals that could cause striations. The results of an experimental study subjecting replicated obsidian edges to cutting manioc cortex with small amounts of that soil are reported here.

[119] *Discussant*

Shelton, China [111] *see* White, Chantel

Shelton, Rebecca (AR Consultants, Inc.) and Gabriel Wrobel (University of Mississippi)

[204] *Investigation of looted contexts at the Sapodilla Rockshelter, Caves Branch Valley, Belize*

As part of an ongoing regional research project, salvage operations at Sapodilla Rockshelter focused on identifying indicators of the site's use. Ceramic analysis of mortuary vessels and thin deposits of isolated sherds suggests that most activity occurred in the Protoclassic and Early Classic periods. Osteological analysis of disturbed human remains indicated a pattern similar to the nearby Caves Branch Rockshelter of repeated mortuary use in which primary burials were disturbed and scattered by later interments. Furthermore, the initial ceramic, osteological, and lithic analyses have identified differential uses of space within the rockshelter's dark and light zones.

Shen, Chen (Royal Ontario Museum), Xiaoling Zhang (The IVPP, Chinese Academy of Sciences) and Xing Gao (The IVPP, Chinese Academy of Sciences)

[22] *Middle Pleistocene Lithic Technology at the Zhoukoudian Locality 1 Peking Man site, China: New Insights from Stone Tools Use-Wear Studies*

The paper reports the results from use-wear study of lithic artifacts excavated previously from the famous Zhoukoudian Locality 1 cave where 40 individuals of *Homo erectus* fossils were discovered. The new study suggests that that Peking Man lithic technology was not simple as previously thought. The micro-wear evidence indicates many typed tools were made for specific tasks related to processing animal substances. Importantly, most pointed tools were probably hafted, and this provides arguably the earliest evidence for the composition tools in the Chinese Middle Pleistocene. East Asian hominids were not primitive in their use of lithic technology.

Shepard, Ben (UCLA)

[236] *Middle Holocene political economies in the Cis-Baikal, Russia: insights from mortuary data*

Studies of social dynamics in intermediate societies emphasize the importance of rituals such as funerals in structuring political economies in which they are embedded. I present results from an investigation of prehistoric political economy in the Cis-Baikal region of Siberia, Russia, based on mortuary data from Serovo (3800-3000 BC) and Glazkovo (3000-2000 BC) cemeteries. I demonstrate several changes in the relationships between demographic variables (age, sex, burial location) and types of treatment individuals received at death (grave architecture, grave goods). I then discuss the implications of changing burial practices for models of local social organization and political economy.

Shepherd, Carolyn (Retired) [230] *Discussant*

Sheppard, Paul [99] *see Elson, Mark D.*

Sheridan, Susan [152] *see Ullinger, Jaime*

Sherrod, Laura [115] *see Brashler, Janet G.*

Shields, Carl [64] *see Mink, Philip B.*

Shillito, Lisa-Marie (University of York) and Oliver Craig (University of York)

[42] *Feeding Stonehenge: provisioning henges and households in southern Britain in the 3rd millennium BC*
The henges of southern Britain are recognised as ceremonial sites for large-scale feasting by gatherings of people who probably came from far and wide. Excavations at Durrington Walls have uncovered a well-preserved Neolithic settlement with surviving house floors and middens identifiable to particular houses. These present an opportunity for a detailed economic study of the Stonehenge people from household to community. This paper presents preliminary results from pottery residue analysis, which aims to investigate consumption within and between households and ceremonial spaces. It is suggested that contents varied by vessel size, and were deposited differently in public and domestic areas.

Shimada, Izumi (Southern Illinois University) and Go Matsumoto (Southern Illinois University)

[71] *Water, Fire, and Huaca: Rituals of Regeneration and Ancestor Veneration in the Sicán Culture*
The Cupisnique practice of setting an intentional fire at the time of interment of the deceased and temples continued into the later Sicán period in the Lambayeque region of the north coast. We documented numerous episodes of extensive but ephemeral fire setting immediately after the deposition of each new alluvial layer around the Huaca Loro temple mound. These fires spanned 1000-1533 CE. Offerings of ceramics, ingots, textiles and even a whole puma were placed where water would have cascaded down the temple mound. We argue that these activities expressed ancestor veneration and interrelated concepts of transformation and regeneration.

[267] *Discussant*

Shimada, Izumi [156] *see Klaus, Haagen D.* **[260]** *see Cervantes, Gabriela* **[174]** *see Matsumoto, Go*

Shimelmitz, Ron [218] *see Kuhn, Steven L.*

Shirar, Scott [181] *see Gaines, Edmund P.*

Shiratori, Yuko (The Graduate Center, CUNY) and Miriam Salas (Centro Universitario de El Petén)

[243] *Ceramics of the Itza Maya in the Petén Lakes Region*

Recent archaeological researches in the Petén lakes region have provided ceramic information of the Itza in the west and southwestern side of Lake Petén Itza, Guatemala. In 2009 and 2010 Proyecto Arqueológico Tayasal yielded Postclassic ceramics diagnostic of the Itza Maya from the Itza site of Tayasal, which is located at 200m north of the Itza capital Nojpeten. This paper

presents the preliminary ceramic analysis of Proyecto Arqueológico Tayasal and compares these results to recently uncovered Postclassic ceramics from the Itza sites in the Petén lakes region.

Shock, Myrtle

[129] *Paleoethnobotanical study of central Brazilian rockshelters, 500 to 8000 BP.*

Analysis of plant remains from two rock shelters on the Brazilian savanna provides the context for discussing chronological shifts in plant resource utilization. Samples from strata dating between 8000 to 500 BP were analyzed. General patterns observed in measures of plant density and richness by strata were further assessed with ANOVA and chi-squared tests to distinguish the statistically significant patterns. Interpretations of chronological changes are based upon to the archaeological context and plant remains found therein.

[129] *First Chair*

Shockey, Paul (Arizona State University)

[36] *Having the Choice: Thermal Resistance and PIXE Analyses of Woodland Period Ceramics*

This study is an examination of ceramic choices at the Mound House Site (11GE7), Greene County, Illinois. The use of crushed limestone as a tempering agent is largely limited to the Lower Illinois Valley during the Middle Woodland Period (ca. 50 cal B.C. – cal A.D. 400). To determine whether this choice was based on raw material availability or culinary utility, thermal resistance was tested on limestone- and non-limestone-tempered ceramic sherds. Additionally, Proton Induced X-Ray Emission analysis compares the elemental variability of “ceremonial” wares (Hopewell and Baehr) with “utility” wares (Havana and Pike) to infer local or extralocal origin.

Sholts, Sabrina (University of California, Berkeley)

[146] *Three-dimensional modeling of the human skull: An outline-based analysis of prehistoric cranial morphology on the northern Channel Islands of California*

In this study, three-dimensional (3D) digital models were used to analyze morphological variation among human crania from archaeological sites on the northern California Channel Islands. Three different outlines were produced from cross-sectional geometry planes defined by standard craniometric landmarks in the midfacial, palatal, and vault components of each 3D model, and coordinate points along the outlines were transformed with elliptic Fourier analysis. Multivariate statistical analysis of the Fourier coefficients revealed two distinct patterns of midfacial and palatal morphology in the overall sample, consistent with osteological, archaeological, and linguistic evidence suggesting that more than one population may have colonized this region.

[146] *see Warmlander, Sebastian*

Shoocongdej, Rasmi (Silpakorn University Thailand)

[17] *Late Pleistocene Forager Mobility Organization in Tropical Highland Pang Mapha, a Borderland between Thailand and Myanmar*

It is generally assumed that the tropics are less seasonal than temperate environments, so that tropical foragers exhibit only residential mobility strategies. My research

shows pitfalls in disregarding the complexity and diversity of tropical ecosystems, demonstrating that mixed mobility strategies occurred in tropical environments. I present inter-disciplinary research on forager mobility in the seasonal tropical environment of Thailand using data from my excavations at Tham Lod and Ban Rai rockshelters, highland Pang Mapha, northwestern Thailand. I examine the variability and distribution of these Late Pleistocene assemblages, highlighting the processes of interaction between humans and their environments in tropical Southeast Asia.

Short, Laura (Texas A&M) [127] First Chair [127]
Second Organizer

Short, Laura [162] *see Kamiya, Masahiro*

Shortland, Andrew [5] *see Erb-Satullo, Nathaniel L.*

Shott, Michael (University of Akron) [22] First Chair

Shugar, Aaron [22] *see Rosen, Steven A.*

Sibold, Jason [192] *see LaBelle, Jason M.*

Sierra, Thelma [14] *see Ceballos Gallareta, Teresa Noemi*

Sierra Sosa, Thelma (Centro INAH Yucatán), Andrea Cucina (Universidad Autonoma de Yucatan), T Douglas Price (University of Wisconsin-Madison), James H Burton (University of Wisconsin-Madison) and Vera Tiesler (Universidad Autonoma de Yucatan) [116] *Production, Exchange and Population Mobility During the Classic Period. A View from the port of Xcambó, Yucatan, Mexico*
During the Classic, the coastal enclave of Xcambó functioned as a salt production center and port, maintaining long-reaching ties with other parts of the Maya world and with Veracruz. In this paper, we explore Xcambó's shifting exchange networks, using settlement, architectural and ceramic evidence. This information is complemented with direct insights on its settlers. From Xcambó's mortuary record, we reconstruct their biological profile, geographic provenience and artificial head shapes. Considered jointly, the bioarchaeological evidence traces cultural affiliations and the geographic mobility of Xcambó's merchants and provides new insights as to the settlement's swift abandonment shortly after 700 DC.

Sillar, Bill (Institute of Archaeology, UCL) [269] *Serving Suggestions: Characterising Pottery Use at an Inka Waqa*
Qochapata is an Inka site constructed round a natural rock outcrop, close to Qenqo within the Sacsayhuaman National Park, Cuzco, Peru. The well constructed enclosure was the location for elite Inka rituals. An analysis of the pottery assemblage excavated by the Instituto Nacional de Cultura offers the opportunity to evaluate ceramic use at the centre of the Inka Empire. The fabric, form and probable function of the pottery were assessed, and this presentation will consider the significance of the spatial patterning of pottery disposal within the site, as well as the prospect for future inter-site comparisons

Silva, Ana Maria [234] *see Waterman, Anna J.*

Silva, Rosicler (Instituto Goiano de Pré-História e Antropologia - Universidade Católica de Goiás), Julio Cezar Rubin (Instituto Goiano de Pré-História e Antropologia - Pontifícia Universidade Católica de Goiás) and Jairo Roberto Jimenez-Rueda (Universidade Estadual Paulista, Campus Rio Claro) [68] *Zonificación geoarqueológica aplicado a la gestión de recursos culturales : estudios de casos en Brasil Central*
El present trabajo tuvo como objetivo la elaboración de mapas de potencialidad arqueológica para cazadores-recolectores y agricultores ceramistas, utilizándose de los conocimientos de la geociencias. Para tal, fueron seleccionadas una área ubicada al sur-oeste de la provincia de Goiás y otra ubicada en el Distrito Federal. La metodología aplicada tiene apoyo en la utilización de datos cartográficos disponibles y a partir de esas, se elaboro el mapa de declividad, en el cual fueron lanzadas las demás características ambientales, resultando en el establecimiento de las áreas con característica propias, las cuales fueron analizadas bajo la óptica de la arqueología.
[68] *First Chair*

Silverman, Shari (HRA) [124] *Geoarchaeological Representation of Human-Altered Environments in the Pacific Northwest*
The Pacific Northwest features numerous human alterations to its geomorphology: prehistoric, historic, and modern. These include constructed items, such as dams, jetties and irrigation ditches; and by-products of living, such as shell middens and other refuse piles. Archaeological surveys and geotechnical data illustrate large scale consequences, including dams' effects downstream, while testing and data recovery also depict immediate, small-scale impacts, like an open hearth's burning of its adjacent soil. This presentation investigates the factors influencing the geoarchaeological record's portrayal of these human-altered environments.

Silverstein, Jay (JPAC/U of Hawaii), Robert Littman (University of Hawaii), Joshua Trampier (University of Chicago), Nicholas Hudson (University of North Carolina, Wilmington) and Daniel Jones (University College of London) [258] *Kilns, Harbors, and Temples: Excavations of the Ptolemaic Occupation on the Northern Edge of Tell Timai, Egypt*
The 2010 season of the University of Hawaii project at Tell Timai in the Nile Delta has yielded a wealth of data about the Ptolemaic occupation history of the northern portion of the tell. Magnetometry and excavation data have begun to illuminate the early ceramic industry and the phasing of the temple complex which followed. The latest discoveries including amphorae of imported clay, destruction and reconstruction levels, and religious icons are beginning to demonstrate how the nome capital articulated with the ideological, political and economic spheres of the Ptolemaic world.

Simborth Lozada, Erika [33] *see Burkholder, Jo Ellen*

Simmons, Alan (University of Nevada Las Vegas)

[89] *Pre-Neolithic Mediterranean Seafarers: the Evidence from Cyprus*

New studies over the past several years demonstrate that, contrary to conventional wisdom, the earliest occupants of at least some of the Mediterranean islands were pre-Neolithic peoples with considerable seafaring skills. This was clearly demonstrated in Cyprus at Akrotiri Aetokremnos (ca. 12,000 BP), which also is suggestive a human role in the extinction of endemic pygmy hippopotami. This paper presents results of re-excavation at Aetokremnos and the testing of possibly contemporary near-by sites. It concludes with a summary of claimed pre-Neolithic sites, including recent claims of great antiquity in Crete, and some of the issues involved in firmly documenting these.

Simmons, Alan [26] *see Mandel, Rolfe D.*

Simms, Stephanie (Boston University)

[40] *Rooms with a View: The Organization of Domestic Space on a Puuc Maya Hilltop*

Excavations at Escalera al Cielo, located in the Puuc region of Yucatan, Mexico, provide new evidence for residential hilltop occupation, a unique feature of the northern lowland Maya landscape. This paper synthesizes architectural, artifactual, and botanical data to explore an elite Terminal Classic household and the activities performed therein. A relatively rapid abandonment and lack of post-abandonment disturbance afford extraordinary contexts with abundant *de facto* refuse from both indoor and outdoor spaces. Ongoing, microscale analyses of these remains reveal the material patterns of daily life.

[221] *see Parker, Evan A.*

Simon, Arleyn [92] *see Hodgins, Greg W L*

Simpkins, Robert (San Jose State University)

[258] *Affiliation and rivalry in the architecture of India's Golconda kingdom*

During research conducted in India, I documented numerous structures from the Golconda kingdom (1518-1687), principally mosques and associated structures. Many of these have little or no historical information. They can best be understood through a combination of this limited historical data, analogy, and their spatial and temporal distributions. Although I initially suspected an imperial-style expansion, a more likely explanation may be the desire of the nobility to build in the 'courtly style' in locations under their control reflecting social aspirations and tensions that link politics, social values, and material culture to geography and state evolution.

Sims, Marsha (Nat Resources Conserv Svc)

[87] *Paleoindian Cultural Material in Stream Corridors Used for Trails*

This research examines oval bifaces and stemmed projectiles of Paleoindians relating them to streams as trail corridors. Limitations and barriers are discussed. N. and S. America offer examples and the author presents discoveries from southeastern Colorado. Snakes are a key to the design and selection of material for tool kits in Plains settings and birds in mountain settings. Scales and feathers are elements incorporating snake forms that have perished. A central place is Meso America where the feathered serpent joins these elements in symbolism

and where archeologists recently discovered three Paleoindian skeletons in submerged tunnels with one in flexed burial.

[87] *First Chair*

Sinclair, Alan [192] *see Rodrigues, Teresa Lee*

Singleton, Courtney (University of Maryland College Park) and Larry Zimmerman (Indiana University Purdue University Indianapolis)

[197] *Thinking Outside the Excavation Unit: An*

Archaeology of Contemporary Homelessness

Activist Archaeology goes beyond public education or ideological critique, demanding collective, sometimes radical, social action against structural inequalities in contemporary society. This paper discusses the material landscape of homelessness, attempting to establish connections between homelessness and the greater economic and political networks in which it functions. Expertise in material culture, the construction and presentation of unpopular narratives, and the process of historic preservation are unique contributions and strengths that archaeologists can utilize to effect change in contemporary power relationships, which can aid in creation or transformation of activist politics.

Singleton, Theresa (Syracuse University)

[121] *[Paradise or Hell? Archaeological implications for Contrasting Views of Cuban Coffee Landscapes]*

Archaeological studies of plantations have more often emphasized the creation rather than the consumption of landscapes. Cuban coffee planters designed their plantations to facilitate coffee production and to control slave movement, but also to establish showplaces. Many Cuban coffee plantations became world renown for their beautiful gardens, tree-lined avenues, and commanding vistas of the surrounding area. This paper examines archaeological insights gained from the study of two contrasting audiences or consumers of these landscapes—enslaved laborers and foreign visitors—for locating, identifying, and interpreting plantation spaces at the coffee plantation Santa Ana de Biajacas.

Sinton, John [261] *see Mills, Peter R.*

Sisk, Matthew [176] *see Villeneuve, Suzanne [176]* *see Hicks, Tyler*

Skidmore, Maeve (Southern Methodist University)

[227] *Examining Wari domestic occupations in the Cusco region: preliminary results from Hatun Cotuyoc*

Wari occupation of the Cusco region centered on two settlements: Pikillacta and Huaró. Recent research at Hatun Cotuyoc in Huaró sheds light on the daily life of residents of this Wari province. At Hatun Cotuyoc excavations have located structures similar to Middle Horizon domestic architecture in Ayacucho, with trash assemblages containing material culture of mixed Wari and local traditions. Comparison of these assemblages to those recovered from the center of Pikillacta brings new perspective on administrative relationships in the province, as well as differences between the two principal Wari centers in the region.

[227] *First Chair [227] Second Organizer*

Skinner, A.R. [2] *see Zhou, Cathy XY [218]* *see*

Blackwell, Bonnie A. B.

Skinner, Anne (Williams College), Pamela Willoughby (University of Alberta) and Clarissa Andre (Williams College)

[109] *ESR Dating of Mollusc Shells from the Iringa Region, Tanzania*

Middle Stone Age tools have been recovered from Magubike and Mlambalasi rockshelters. The ages of these sites would be expected to exceed the limits of ¹⁴C dating. Therefore several shells, sp. Acatina, were selected for ESR dating. The one from Mlambalasi gave an age within the Holocene and therefore suggests reworking within the site. From Magubike, a sample collected above the level where hominin teeth were found dated to ~150 ka. One from the lower level was saturated and therefore could not be dated. Further samples should be tested to investigate the possibility of reworking in this site.

Skinner, Anne [3] see Loewen, Natalia

Skinner, Craig [160] see Connolly, Tom [160] see Baxter, Paul

Slater, Donald (Robert S. Peabody Museum & Brandeis University) and Nathan Hamilton (University of Southern Maine)

[196] *In the Footsteps of the Founders: Current Archaeological Research at the Robert S. Peabody Museum of Archaeology*

Although the Peabody Museum's primary focus has shifted towards education during the past decade, this does not preclude the institution from supporting archaeological research. In fact, the Museum sees great value in continuing its distinguished program of research and recognizes that archaeological fieldwork and the reanalysis of museum collections with modern techniques present rich opportunities to engage students in experiential learning. This paper highlights recent work with existing Peabody collections, as well as new research conducted through the Rebecca Nurse Homestead Archaeological Project, the Central Yucatan Archaeological Cave Project and the Bilingual Archaeological Learning Adventure in Mesoamerica (B.A.L.A.M.).

Slater, Philip (University of Illinois Urbana-Champaign)

[74] *Results of Experimental Obsidian Microwear Analyses using a Scanning Electron Microscope*

Traditional lithic microwear studies use light microscopy to determine chert and flint artifact functions. Applying this technique to obsidian is problematic because light reflects off its glassy surface hindering observation. Because obsidian is too reflective for light microscopy and its brittleness generates different damage patterns than flint and chert, it requires a different set of analytical methods. Scanning electron microscopy (SEM) negates light reflection and permits clear, high magnification imaging of edge damage. I will present results of experiments showing that use-actions on several materials can produce diagnostic usewear patterns on obsidian artifacts that are observable with a SEM.

[12] see Ambrose, Stanley H.

Slaughter, Mark (Bureau of Reclamation), James Kangas (Bureau of Reclamation), Pat Hicks (Bureau of Reclamation) and William Heidner (U. S. Army, Yuma Proving Ground)

[83] *Preparing for Operation Overlord: a Testing Facility on the Colorado River*

In preparing for Operation Overlord (the Invasion of Normandy) in World War II, the U.S. Army established a bridge testing facility at the base of Imperial Dam, north of Yuma, Arizona. This facility allowed engineers to test bridges against a variety of stream velocities to see if these would survive while being crossed by tanks and other equipment. Recent fires in the area has cleared these lands and exposed where the buildings and features are located. This poster documents the historical use of this facility and provides an example of regional World War II era archaeology on the Lower Colorado River.

Slessman, Scott [215] *Discussant*

Sload, Rebecca

[266] *The Case for Specialized Activity Areas in the Cave under the Pyramid of the Sun, Teotihuacan*

This paper continues reporting on analysis of the 1978 Teotihuacan Mapping Project test excavations in the cave under the Pyramid of the Sun. Prior analysis showed that the vast majority of ceramics consist of only three forms, virtually all utilitarian. A more thorough analysis that includes context, radiocarbon dates, and non-ceramic artifacts indicates the presence of different activity areas, ritual in nature, as would be expected based on the location of the cave. Hypothesized activities and their implications are explored, including the important one that counters historical conclusions about cave assemblages indicating "habitation" when they consist of "utilitarian" items.

Smalldon, Sue, Tootsie Daniel (Traditional Owner) and Robyne Churnside (Traditional Owner)

[259] *Dummies Guide to Getting the Public Involved in Conservation of the Archaeological Record: an example of Traditional Owners; Archaeologists; Politicians and the Public working together for the Conservation of Burrup Peninsula (Murujuga) Rock Art in Western Australia.*

This paper presents a public campaign methodology adopted for the conservation of rock art on the Burrup Peninsula (Murujuga) in Western Australia, which is home to more than a million panels of rock art and is one of the world's most significant cultural heritage precincts. The 'Stand Up for the Burrup' campaign seeks to draw attention to the archaeological record and to urge its protection from industrial development. We will discuss how Traditional Owners; archaeologists; politicians and the public, can work together for heritage conservation and suggest the methodology can be applied for conservation of significant cultural heritage precincts in the Americas.

Smallwood, Ashley (Center for the Study of the First Americans Texas A&M University) and Thomas Jennings (Texas A&M University- Center for the Study of the First Americans)

[120] *Introduction to Clovis: Current Perspectives on Technology, Chronology, and Adaptations*

This paper introduces the symposium Clovis: Current

Perspectives on Technology, Chronology, and Adaptations. The earliest Clovis archaeological sites were discovered in the Plains and the West. These early finds have shaped our understanding of the cultural complex and established standards for Clovis technology, chronology and adaptations. The addition of new sites helps reaffirm some universal characteristics, but also highlights nuances of variation within Clovis. This variation raises the question, what is Clovis, and the papers in this symposium provide the most current evidence of Clovis technology, chronology, and adaptations.

[120] *First Chair*

Smallwood, Ashley [155] *see Jennings, Thomas A.*

[155] *see Smith, Heather L.*

Smiley, Francis [134] *see Wandler, Cole B.*

Smith, Alexander (Brown University Joukowsky Institute) and Danielle Raad (Harvard University)
[62] *The Metallurgy of Iron Mine Hill: The Economic Implications of the Use of Cumberlandite in Colonial Era Iron Artifacts from Rhode Island*

Cumberlandite is an iron ore located primarily in Cumberland, Rhode Island. During the Colonial era, the ore became a significant source of raw iron in New England. Rich in titanium, cumberlandite presents a unique opportunity to source excavated ore samples, byproducts, and artifacts. Using both XRF and SEM-EDS analyses, we have established a basic fingerprint of cumberlandite to analyze a set of samples from two early iron manufacturing sites in Rhode Island. Due to the singular concentration of the ore in Cumberland, these analyses may highlight patterns of iron distribution within Rhode Island, and with future application, throughout New England.

Smith, Alexia (University of Connecticut)

[111] *The Use of Multivariate Statistics within Archaeobotany*

Over the past decade, the use of multivariate statistics to examine archaeobotanical data has become more commonplace, enabling a rigorous approach to data exploration. This paper reviews the use of multivariate statistics within archaeobotany to examine questions at both the site and regional level. It concludes with a discussion of the potential for correspondence analysis to integrate archaeobotanical and zooarchaeological data in order to examine ancient food production in a more quantitative and holistic manner.

[45] *Discussant*

Smith, Beth (Nevada Department of Transportation)

[6] *Great Basin and California Crescents: Determining Function Through the Manufacturing Continuum*
Crescents are usually found in pre-Archaic lithic assemblages in the Great Basin and California, but understanding of their function has been limited by a lack of stratified contexts and definitive use-wear results. Through the examination of their manufacturing processes, sourcing data and of Great Basin geography, a better understanding as to what conditions (time, location, and subsistence strategies) favored the use of crescents can also provide clues as to their eventual disappearance from the early hunter-gatherer's toolkit.

[163] *see Creger, Cliff*

Smith, Bruce (Smithsonian Institution)

[111] *Recognizing Human Niche Construction in the Archaeological Record*

Small-scale pre-industrial societies enhance their local environments in a variety of different ways in order to increase the availability of those wild plant and animal species they rely on for food and other raw materials. A series of general categories of human niche construction involving wild components of biotic communities are briefly described, and the difficulties encountered in recognizing them in the archaeological record are considered.

Smith, Christy [150] *see Gray, Amie*

Smith, Craig (University of California, Santa Barbara)

[229] *Second Chair* [229] *Second Organizer* [229] *see Edwards, Matt*

Smith, Craig and Lance McNees (ENTrix, Inc.)

[168] *Persistent Use of the Landscape and the Mid-Holocene Housepits of Wyoming*

The stability of mobility patterns as reflected by the persistent landscape use in a redundant manner over decades and centuries is an important dimension of hunter-gatherer residential mobility strategies that is typically not considered. Investigating mobility patterns over the long term contributes to the understanding of the complexities of hunter-gatherer settlement systems. The mid-Holocene Wyoming housepit dataset provides an opportunity to explore these long term stable mobility patterns, exemplifying the usefulness of archaeological data in delineating persistent landscape use. The Wyoming housepit dataset evidences persistent landscape use over at least two thousand years at three scales of spatial congruence.

Smith, Donna (Indiana University of Pennsylvania)

[65] *Comparing the Effectiveness of Ground Penetrating Radar in Identifying Stockade Features in Late Prehistoric and Historic Sites*

The proposed poster presentation will focus on a study of the effectiveness of Ground Penetrating Radar in locating stockade features in late prehistoric and historic archaeological sites. The use of GPR in identifying features is becoming more popular in the archaeological community, yet its ability to identify late prehistoric features may be questionable. The research will include GPR surveys and ground-truthing of two sites – Ft. Shirley in Shirleysburg, Pennsylvania and Mary Rinn in Indiana, Pennsylvania. The research will include a GPR survey, ground-truthing of anomalies suspected to be stockade features, and an analysis of the effectiveness of the GPR survey.

[65] *First Chair* [138] *see Chiarulli, Beverly A.*

Smith, Erica (University of West Florida)

[89] *Spanish and Mexican Indian Artifacts from the Emanuel Point Shipwrecks*

In this paper, I will discuss the provenance of selected artifacts from the 1559 Tristán de Luna shipwrecks through chemical characterization and historical research. Excavation and laboratory analysis of the two ships (Emanuel Point I and II) have identified a number

of artifacts from the Emanuel Point Shipwrecks that are believed to have been made in Mexico and Spain. By employing Instrumental Neutron Activation Analysis and Mass Spectrometry it may be possible to source these artifacts to either Spain or Mexico based on chemical composition and determine if these methods are suitable for characterizing 452-year-old waterlogged artifacts.

Smith, Fred [218] *see Karavanic, Ivor*

Smith, Geoffrey (University of Nevada, Reno) and Jennifer Kielhofer (University of Nevada, Reno)

[262] *Late For Dinner: A First Look at the Stemmed Points and Bifaces from Last Supper Cave*

Located in northwest Nevada, Last Supper Cave was excavated between 1968 and 1974 by Tom Layton and Jonathan Davis. Although work there revealed a rich record of human occupation including a substantial Paleoindian component dating to as early as 10,300 14C B.P., materials from the site were never fully analyzed. In this paper, we present the results of our technological and source provenance analyses of stemmed points and bifaces from the Paleoindian component at Last Supper Cave and compare them to the results of similar analyses of the bifaces from the Parman Localities, a series of nearby open-air Paleoindian sites.

[262] *First Chair*

Smith, Grant [87] *see Spencer, Alan C.*

Smith, Heather (Center for the Study of the First Americans) and Ashley Smallwood (Center for the Study of the First Americans, Texas A&M University)

[155] *Variability in Clovis Point Shape in North America Using Geometric Morphometrics*

In this paper we present the results of a shape analysis of Clovis fluted points from sites across North America representing the Southwest, Northern Plateau and Rockies, Plains, Northeast, and Southeast regions. With use of geometric morphometrics, the entire geometry of the artifacts is preserved throughout analysis, providing a more robust statistical expression of shape for use in comparative morphological explorations than standard morphometric variables. Our analysis expands a previous investigation of major factors of variability in Clovis point shape in North America to include specimens representing the American Southeast with a specific objective of addressing patterns of geographic variability.

Smith, Heather [181] *see Younie, Angela M.*

Smith, J.R. [218] *see Blackwell, Bonnie A. B.*

Smith, Jennifer [26] *see Hritz, Carrie*

Smith, Karen, Sara Bon-Harper (Monticello) and Fraser Neiman (Monticello)

[207] *Site Structure and Slavery at Monticello Plantation in the Late 18th Century*

This poster explores how the analysis of archaeological site structure can advance our understanding of changing economic and social strategies pursued by enslaved field laborers at Monticello plantation during the late 18th century. We use Bayesian spatial smoothing and correspondence analysis of chronologically sensitive

ceramic type frequencies in plowzone quadrats to separate synchronic differences from patterns of change among households. Comparing the results with variation among assemblages from subsurface features and variation in the features themselves yields new insights into change in storage and costly signaling practices.

Smith, Kevin (Haffenreffer Museum, Brown University), Michele Smith (Haffenreffer Museum, Brown University) and Thomas Urban (Brown University)

[42] *Deep in the Glaciermen's Domain: archaeological investigations by the Haffenreffer Museum at Gilsbakki, western Iceland, 2008-2010*

The site of Gilsbakki was, according to documentary records, the seat of a Viking Age chieftainship, a medieval ecclesiastic estate, and an early modern parish center. By another reading, Gilsbakki's history reflects a thousand year struggle for dominance with a rival elite center at Reykholt, 15 km away. Excavations, geophysical prospection, and collections analyses by Brown University researchers from 2008-2010, documented a 2.4 meter deep, stratified, artifact-rich record at Gilsbakki suggesting complementary, material narratives about early medieval elite power, changing responses to six centuries of colonial rule, and the emergence of "modernity" in the 18th century North Atlantic.

Smith, Michael (Arizona State University)

[214] *Can Archaeological Blogs be used for Serious Scholarship?*

Most archaeological blogs are aimed at the dissemination of information to a non-professional audience, with a few blogs focused on communication of professional information among archaeologists. I explore the possibilities for expanding blogging beyond a teaching-service-entertainment orientation into a more serious intellectual realm. Why are there no archaeological blogs for serious intellectual conversation (like the anthropology blog, "Savage Minds"). Might archaeological blogs be used for the production of intellectual content through collaboration among professionals? I discuss some of the roadblocks and potential benefits to expanding archaeological blogging in the direction of intellectual and scientific production.

[58] *Discussant*

Smith, Michael [90] *see Isendahl, Christian*

Smith, Michele (Research Associate Haffenreffer Museum of Anthro)

[42] *Time Warp: Women, weaving, and wool in Iceland 900-1800 AD*

Collections of archaeological textiles from the Viking Age through the 19th century are abundant in Iceland. Despite their potential to reveal information about their makers – women – they remain poorly understood. This paper presents preliminary data from 12 sites –and particularly Gilsbakki, an elite site in western Iceland – and reports initial findings from a 3-year NSF Arctic Social Science project examining women's roles through time in the preparation and production of textiles that served both in the political economy (as currency and payment of tribute) and as household products (clothing etc).

Smith, Michele [42] *see* Smith, Kevin P.

Smith, Nicole [168] *see* Orchard, Trevor J.

Smith, Sam [150] *see* Guthrie, Brady H.

Smith, Scott (Franklin & Marshall College)

[93] *Ceremonialism and the Social Relations of Production during the Late Formative Period (200 BC – AD 500) in the Southern Lake Titicaca Basin, Bolivia*
The Late Formative was a dynamic time in the southern Lake Titicaca Basin. A series of multi-community polities are argued to have controlled the region, although the precise organization and influence of these polities remains poorly understood. In this paper I trace the history of one multi-community polity centered at Khonkho Wankane in the Desagüadero Valley. In particular, I consider how ceremony and belief articulated with the social relationships surrounding economic production. I conclude by hypothesizing ways in which ceremony and ideology were manipulated to underwrite the political and economic centralization of the nearby Tiwanaku state around AD 500.

Smith, Stuart (UC Santa Barbara) and Michele Buzon (Purdue University)

[152] *Identity, Commemoration and Remembrance in Colonial Encounters: Burials at Tombos during the Egyptian New Kingdom Nubian empire and its aftermath.*
Commemoration of individuals through burial provides a critical arena for the negotiation of identities in colonial encounters. Burials at Tombos, an Egyptian colonial community in Sudanese Nubia founded in c. 1400 BC, reflect remembrances that vary by sex, class and chronology. While most individuals commemorated their Egyptian identities, some women at Tombos identified as Nubians in their burials. In addition, various types of burials reveal social class differences. They also reflect the cultural entanglements common to colonial encounters that blended elements of both cultures and eventually led to the emergence of a new, hybrid identity in the empires aftermath.

[229] *Discussant*

Smith, Stuart [246] *see* Herbst, George

Smith, Susan and Karen R. Adams

[20] *The Perishable Side of Archaeology: Plant Remains and Prehistoric Subsistence in the Grand Canyon*
Archaeobotanical studies in the Grand Canyon have been rare. Recent Museum of Northern Arizona excavations are the first to integrate systematic studies of both micro and macro botanical remains from multiple archaeological sites along the Colorado River. Here we summarize pollen and flotation records from Pueblo period residential sites in the eastern Grand Canyon. Results show that by ca. 1000 AD, Grand Canyon farmers grew maize, cotton, and squash. In addition, they harvested wild plant resources including mesquite, cacti, and grasses. Charcoal from thermal features represent a variety of local and higher elevation woods, some probably harvested as driftwood.

Smits, Nicholas (AINW, Inc)

[160] *A View from Craig Mountain: New Perspectives on*

the Stockhoff Basalt Quarry in Northeastern Oregon
The Stockhoff Basalt Quarry (35UN52), one of the largest and best-known archaeological sites in Oregon, encompasses over 3,400 acres of Craig Mountain in the northeastern part of the state. Native people have quarried fine-grained volcanic material from this area for thousands of years. Recent surveys resulted in the identification of numerous artifact concentrations at 35UN52 and the recordation of more than 230 additional pre-contact archaeological resources—including lithic scatter sites, rock features, quarry sites, and isolated finds—in adjacent areas of Craig Mountain. This paper investigates the relationships among these newly recorded sites, the Stockhoff Basalt Quarry, and local geology.

Smyth, Michael (Foundation for Americas Research/Rollins College), David Ortégón Zapata (Universidad Autónoma de Yucatán), Nicholas Dunning (University of Cincinnati) and Eric Weaver (University of Cincinnati)

[266] *The Xcoch Grotto, Yucatan: Paleo-Climate Change and Maya Cultural Responses*

Xcoch is a deep water cave in the Puuc region located beneath a large center of the same name beginning in the Middle Preclassic period. Under investigation since 2006, cave mapping, ceramic analysis, and soil-speleothem sampling now provide data to show that the Xcoch site suffered from repeated cycles of drought. The ancient Maya responded to severe climate change by engineering systems of water management and storage but also collected water from the cave and performed rain ceremonies among other ritual activities. Preliminary results of the cave work are presented particularly as they relate to surface architecture at Xcoch.

Snead, James (George Mason University) and J. Jefferson Reid (University of Arizona)

[18] *From Hewett to Haury: Thoughts on Change and Continuity in Southwestern Archaeology in the 1930s*
Don Fowler's history—A Laboratory for Anthropology: Science and Romanticism in the American Southwest, 1846-1930—labels the 1930 end date of his narrative as a "time of transition." According to Fowler, "Hewett finally was able to rule Chaco Canyon", "there was a Harvard presence throughout the 1930s", and "with the exception of Paul Martin's forty year archaeology program out of the Chicago Field Museum...., subsequent Southwestern archaeology was conducted by regional institutions...." We discuss this "time of transition" from our complementary historical perspective on people, places, and institutions of New Mexico and Arizona.

[215] *Discussant* **[94]** *First Chair*

Snetsinger, Andrew (Trent University)

[75] *An intra-site analysis of the Mortuary assemblage at the ancient Maya center of Minanha, Belize*

This paper presents the preliminary results of an intra-site analysis of the mortuary assemblage at the ancient Maya center of Minanha, Belize. The data set includes various grave types, associated offerings, and human remains. The assemblage itself spans the Terminal Preclassic to Early Postclassic periods, and is representative of the entire socio-economic and socio-political spectrum of the broader Minanha community. Using a temporal-spatial framework, the paper highlights

some of the key trends in mortuary practices over roughly a millennium of occupation.

Snow, David (Cross-Cultural Research Systems) and Kari Schleher (University of New Mexico)

[264] *Read Their Lips: function and habitus in early Rio Grande glazeware bowl rims*

Modeling of Rio Grande Glazeware bowl rims during the early stages of its production (ca. A.D. 1315-1450) encompasses Mera's types A through C. Traditionally believed to express chronological relationships based on seriation studies by N. C. Nelson and H. P. Mera, the continued focus on the perceived chronological sequence of these early bowl rim varieties ignores possible reasons underlying variation in bowl rim forms. Here we propose possible factors to account for the appearance of modified bowl rims on early glazeware bowls.

Snow, Dean (Pennsylvania State University) [118]
Discussant [55] Discussant

Snow, Meradeth (UC Davis)

[219] *Further Analysis of mtDNA from the Tommy and Mine Canyon Sites*

Ancient mitochondrial DNA analysis of samples from the Chaco outlier Tommy and Mine Canyon Sites (PII and PII sites located near Farmington, New Mexico) originally revealed a distinct difference between the sites in terms of their haplogroup frequencies. Additional samples from both sites have allowed for investigating whether original difference was due to drift or sampling error. The sites were compared with those from both modern and prehistoric populations in the desert Southwest, including samples from the Mimbres and Casas Grandes (Paquime), to better understand the regional context of the inhabitants, as well as inter-regional relationships.

Sobel, Elizabeth (Missouri State University)

[160] *The Expansion Model of Post-Contact Change in NW Coast Exchange Systems: An Archaeological Test Using Obsidian Evidence from the Lower Columbia River*
Scholars widely assume that during the early decades of Euroamerican influence on the NW Coast of North America, the volume and geographic scope of long-distance exchange activity increased among Native communities. However, this Exchange Expansion Model (EEM) is based on ethnohistory and remains untested by archaeology. I address this problem with an archaeological test involving pre-contact and post-contact obsidian artifact data from three Lower Columbia River sites - Cathlapotle, Clahclellah, and Meier. Results support the modeled increase in volume, but not the purported increase in geographic scope, in native exchange activity in the wake of Euroamerican arrival in the area.

Sobolik, Kristin [206] *see Belknap, Samuel L.*

Sobur, Marta (Harvard University)

[13] *A survey of theoretical approaches to the study of ancient Arabian economies.*

In 2011 Arabian archaeology is a well established and rapidly growing field of inquiry studying the emergence of social complexity in multi-disciplinary research programs in all corners of the Arabian Peninsula. Over two

decades since the publication of major synthesizing works (Tosi 1986, Potts 1991), the time is ripe to consider closely the prevalent theoretical frameworks in the study of ancient Arabian economies. This review of scholarly responses to the major theoretical debates concerning economic systems in Arabian prehistory aims at systematizing the prevalent models and identifying opportunities for revisiting the existing theoretical paradigms.

[13] *Second Chair*

Soderland, Hilary (Boalt Hall, UC-Berkeley) [110]
Discussant

Sofaer, Joanna (University of Southampton)

[16] *Touching the Body. Performing Sex and Gender in Osteoarchaeology*

The interaction between different kinds of bodies – the living and the dead, the fleshed and the skeletal – is the focus of this paper. It is explored through a discussion of the parallels and dissonances between performance art and human osteoarchaeology – two disciplines that share a distinctive focus on the interpretive possibilities generated through touching the human skeleton. In particular, osteoarchaeology can be understood as a performance-based experiential research process in which tactile engagement with the skeleton follows a script to (re)create the sex and gender of the human body.

Solar Valverde, Laura [237] *see Bauer-Clapp, Heidi J.*

Soler-Arechalde, Ana (UNAM)

[92] *Burned and Unburned stuccos employed to improve the paleosecular variation of the geomagnetic field since Prehispanic times*

The first secular variation curve of Mesoamerica from AD 1 to 1200 was done by Wolfman(1990) with burned stuccos. The inclusion of ground volcanic scoria in Central Mexico stuccos allowed us to propose the hypothesis of "unburned stuccos made with scoria could record the magnetic signal", many of the dates obtained from them were corroborated with radiocarbon dates. Since 1999 we have been intensively working and numerous ¹⁴C data become available from Central Mexico improving the stratigraphy and chronology. In light of these new radiometric and magnetic data we present an updated secular variation curve for the last two millennia.

Solis, Kristina (University of Texas at San Antonio)

[179] *Relations between south Texas Hunter-gatherers and complex Mesoamerican societies*

The hunter-gatherers that occupied the deep-south Texas coast from the Late Archaic to Late Prehistoric periods are not well known. These scattered hunter-gatherer societies subsisted on marine resources and had an impressive marine shell industry. Their marine shell artifacts have been found in sites of complex Mesoamerican cultures such as the Huastecs and Aztecs. Likewise, Mesoamerican artifacts, ceramics and jade, have been discovered in south Texas hunter-gatherer sites. This poster will investigate these artifacts as well as the available literature in order to build a more holistic picture of the relations between south Texas hunter-gatherers and distant complex Mesoamerican

societies.

Solis, Reyna [41] see *Melgar, Emiliano R.*

Solometo, Julie (James Madison University), Alison Rautman (Michigan State University) and Matthew Chamberlin (James Madison University)

[53] *Assumptions, Expectations, and the (Apparent) Reality of 12th and 13th Century Village Life in Central New Mexico*

The ethnohistoric record shows that the border pueblos had complex relationships with their Plains neighbors, who traveled west both to trade and raid. It seems commonplace to assume that these sorts of relationships have a long history. The first plaza-oriented pueblos in Salinas have been interpreted as potential fortresses, their upland locations affording defense and panoramic views of enemy territory to the east. Recent excavations at early Salinas pueblos complicate this interpretation. Architecture, evidence of burning, and settlement patterning point also to a concern with enemies to the west, where population movements coincide with aggregation in the Rio Abajo.

Solometo, Julie [136] see *Chamberlin, Matthew A.*

Somerville, Andrew (University of California, San Diego), Paul Goldstein (University of California, San Diego), Sarah Baitzel (University of California, San Diego) and Margaret Schoeninger (University of California, San Diego)

[233] *Paleodiet in the Tiwanaku Periphery: Carbon and Nitrogen Isotope Data from Rio Muerto, Moquegua, Peru*
As markers of individual and group identity, dietary practices convey valuable information on ethnicity, gender, and status-based differences within archaeological populations. Through analysis of bone carbon and nitrogen stable isotope ratios, we reconstruct the paleodiet of the Middle-Horizon Tiwanaku from Rio Muerto in the Moquegua Valley of Southern Peru. Our results are compared to previously generated data from the earlier Huaracane, succeeding Tumilaca and Chiribaya populations, and to highland Tiwanaku data to assess dietary changes in relation to political and demographic changes across the Tiwanaku core and peripheral regions. Additionally, we investigate gendered food behavior in this peripheral Tiwanaku colony.

Somerville, Andrew [233] see *Kellner, Corina M.*

Sommer, Caitlin (University of Colorado at Boulder)
[211] *Animacy, Symbolism, and Feathers from Mantle's Cave, Colorado*

This research asks to which native group or groups can the Mantle's Cave artifacts be attributed. The most spectacular artifacts recovered incorporated feathers. Feathers have great symbolic significance to many modern native groups, and so may afford archaeologists an exceptional view into the past. Analysis of feather bundles and feathered artifacts from the cave should assist in determining ethnicity. Moreover, this inquiry will explore agency of feathers and the symbolism of birds and feathers for modern Puebloan and Great Basin groups.

Sorensen, Tim Flohr (University of Cambridge)

[226] *A Sort of Homecoming: On the Role of Returning in Secondary Burials*

The act of returning remains an understudied yet important part of secondary burials. In seeking to explore the role of returning, the paper focuses on the social movements that circumscribe ashes, bones, urns, funerary pyres, crematoria and burial places. It compares contemporary cremation and cremation in the Early Bronze Age of Denmark, addressing the social and emotional impact of going back to the cremated remains. It is argued that acts of returning revolve around parting with the dead in a physically recognizable form. The paper introduces the concept of vagueness as a subtext and objective of secondary burials.

Soto, Gabriella (University of Bristol)

[124] *The Undocumented Landscape: Transience and Subsistence at the Border*

Every year, thousands of undocumented immigrants enter the United States by crossing its southwestern land border. This region has become a "contested landscape," created by the transit of "anonymous" human beings, and the material traces of their clandestine and ephemeral presence. Backpacks, water bottles and clothing are the markers of what in effect is a horizontal stratigraphy of a contemporary archaeological record. An interdisciplinary approach to landscape formation in contested space is adopted here, and aims to investigate the social, economic, and emotional dimensions of such activities.

Southon, John [88] see *Culleton, Brendan J.*

Souza, Joanne [43] see *Bingham, Paul M.*

Speer, Charles (University of Texas at San Antonio)

[61] *Using LA-ICP-MS to Characterize Clovis Artifacts at the Gault Site*

This experiment uses Laser Ablation-ICP-MS to determine if Clovis artifacts at the Gault Site in Central Texas can be correlated with local Edwards chert outcrops. The geologic samples for this experiment came from three different locations within a kilometer of the site and all were in primary contexts. A 100 km distant primary chert source was used as a null hypothesis to test against. Debitage and blade fragments from controlled excavations were tested for elemental composition and the degree of similarity between the geologic samples. This project represents a first step in attempting to clarify sourcing issues with Edwards chert.

Speller, Camilla [178] see *Stevenson, Alexander E.*

Spenard, Jon (University of California, Riverside)

[157] *Pioneering the Underworld: Mary Pohl's Contributions to the Origins of a Self-Conscious Cave Discipline*

I address the profound affect that Mary the scholar and Mary the adviser has had on the rise of the self-conscious discipline of ancient Maya cave archaeology. I will address how her research in the early 1980s helped to emphasize the significance of caves to Maya research. Furthermore, I highlight Mary's continued contributions to the discipline in her role as adviser to several students who were among the first generation of professionally trained Maya cave archaeologists. The second half of this paper reviews their work and provides an outlook for

the field and offers suggestions for future research.

Spence, Michael (University of Western Ontario), Christine White (University of Western Ontario), Patricia Fournier (Escuela Nacional de Antropología e Historia) and Fred Longstaffe (University of Western Ontario)

[21] *The Chapantongo Site: Oxygen Isotope Analysis and Epiclassic Population Mobility in the Valley of Mezquital*

The Valley of Mezquital played an important role in mediating interaction and the movement of people between the Bajío and the Basin of Mexico in the Epiclassic and Postclassic periods. To examine the level of mobility in the region oxygen isotope analysis was conducted on 72 bone and dental samples, representing 39 individuals, from the Epiclassic period Chapantongo site. The results, which suggest considerable mobility, will be compared to data from other Epiclassic sites in the region.

Spence, Michael [16] see White, Christine D.

Spencer, Alan, Andrew Williamson (Natural Resources Conservation Service) and Grant Smith (Natural Resources Conservation Service)

[87] *Twin Peaks Springs: A Study in Process*

In August 2008, the Natural Resources Conservation Service embarked on an ambitious water pipeline project in the desert outside of Millard County, Utah. Over the course of three years, the NRCS worked with the Utah SHPO, the Bureau of Land Management, the Advisory Council for Historic Preservation, the State of Utah, various tribes, and the land owner to bring the much-needed water pipeline to reality. When completed, the project was a study of human adaptation in arid environments, a balance of public and private interests, and a study of conservation and historic preservation.

Spencer, Kaylee (University of Wisconsin - River Falls)

[102] *Locating Palenque's Portraits: Space, Spectatorship, and Identity in Classic Maya Art*

This study examines the portrayal of personal identity in relation to space within Classic Maya sculptural programs. Using the rich corpus of Classic-period portraits from Palenque, and nearby sites, I consider how relationships between viewers and subjects inform the messages encoded in ancient artifacts. I suggest, drawing from archaeological evidence, iconography, and new readings of hieroglyphic texts, that artists fashioned highly prescribed viewing contexts, which endowed artworks with greater significance and power than western models allow. I propose that (re)inserting viewers into pictorial programs encourages a richer understanding of Maya art and opens arenas to discuss emic notions of space.

[102] *First Chair*

Spencer, Susan [35] see Alonzi, Elise E.

Spengler, Robert (Washington University in St. Louis)

[54] *Paleoethnobotanical Studies in Eastern Kazakhstan: the Bronze and Iron Age Interface*

The cultural dynamics and economies that underpin the

development of Eurasian societies of the steppe are thought to have undergone significant changes at the start of the Iron Age (ca.800 B.C.). An increase in size and quantity of burial mounds and occupation sites are argued to be indicators of a transition. I discuss paleoethnobotanical data from the pivotal time period of the early Iron Age, looking at three archaeological sites in Semirech'ye, Kazakhstan (Tuzusai, Begash, and Mukri). While agricultural products were used in the region during the Middle Bronze Age, agriculture was not a major economic pursuit until the Iron Age.

Spengler, Robert [111] see D'Alpoim Guedes, Jade

Spielmann, Katherine (Arizona State University)

[53] *Forager-Farmer Interaction in North America*

The relationship between foragers and farmers is a complex topic in North American prehistory because there were no populations that relied solely on domesticated plants and animals for their subsistence. Documenting prehistoric forager-farmer interaction is also complicated by the archaeological invisibility of many of the trade items. The Plains-Pueblo interactive system, on which John Speth has worked, remains the best documented of all the prehistoric forager-farmer systems in North America. Using this example as well as the Crow-Hidatsa and Iroquois-Algonquian systems, this paper discusses two pathways to forager-farmer relations: farmers interacting with ethnically distinct hunter-gatherers, and farmers becoming foragers.

[118] *Discussant*

Spivak, Deborah (University of California, Santa Barbara)

[229] *The Visual Frontier of Huaca del Loro*

The ceramic style of Huaca del Loro developed on the south coast of Peru during the cultural contact between the highland Wari Empire and the coastal Nasca peoples between approximately 600 and 800 CE. These objects were part of a system of communication that established group identity during a time of political upheaval. Requiring literacy of several visual systems, the Huaca del Loro ceramics are, in themselves, a middle ground. This object centered study activates the borderland through agencies of trade and circumstance-driven visibility.

Spivey, S. (Washington University in St. Louis)

[240] *All Our Relations: Elucidating Social Networks through an Analysis of Lithic Trade Networks Associated with the Poverty Point Site*

A paucity of lithic resources near the Poverty Point site in Louisiana affords researchers a unique opportunity to analyze trade and social networks associated with the site. By analyzing the diachronic changes in lithic material networks as well as synchronic intra-site variability of lithic assemblages through GIS mapping technologies, a lithic raw material network map of the region surrounding Poverty Point is produced. These data are used as a proxy with which to track changes in population composition at Poverty Point in an attempt to elucidate social structures and social and/or demographic particularities.

Spivey, S. Margaret [166] see Bolfig, Christopher B.

Sponheimer, Matt [236] *see Glasgow, Hillary J.*

Springer, Chris (Simon Fraser University), Megan Caldwell (University of Alberta), Dana Lepofsky (Simon Fraser University), Sarah Johnson (Simon Fraser University) and Michelle Washington (Tla'amin First Nation)

[232] *The Built Environment of the Northern Coast Salish: An Archaeological View from Desolation Sound, British Columbia*

Although poorly understood archaeologically, ancient Northern Coast Salish settlement and interaction patterns are generally thought to reflect those known for the southern Gulf of Georgia. Considering human-built environment relationships, we link spatial analysis and resource procurement studies to insights gained from regional ethnographic sources and local Indigenous knowledge to examine connections between the constructed landscapes of the Northern Coast Salish. Our analyses allow us to infer settlement patterning and resource use over time and across space, revealing wider socioeconomic links but also highlighting the distinctive nature of Northern Coast Salish archaeological signatures.

Springer, Corinne (Utah Museum of Natural History) and Ann Kelsey (Utah Museum of Natural History)

[91] *Smoke Signals: Smoke Signals: The positive effects of fire on the germination and growth of Nicotiana attenuata (coyote tobacco).*

Nicotiana attenuata is a post fire annual whose use by indigenous populations is documented ethnographically. This study, prompted by a two-hundred acre wildfire shortly after the recovery of a prehistorically cached bundle of tobacco, tracks the sort-lived florescence of the species and its distribution and density in the burned area for three years. Sharp declines in germination after the first growing season illustrate the necessity of frequent fire episodes. Dense patches associated with prehistoric features and possible farm plots are indicative of active encouragement of the species and possibly cultivation during the Fremont Period.

Sprowles, Michael (Indiana University of Pennsylvania)

[65] *Magnetometry and Electrical Resistivity surveys of the Allegheny Portage Railroad*

Some of the more recent technological advances in archaeology may be employed to better understand the history of the Allegheny Portage Railroad. By examining the engine house at the head of plane 9 with a combined approach utilizing Magnetometry, Electrical Resistivity, and mild ground-truthing a clear picture of its unique shape, boundaries, and preservation can be obtained, while causing minimal impact to the archaeological record. In addition, usage of these two specific geophysical technologies will allow for comparison and assessment of general effectiveness in the soils of the Allegheny Mountains.

Spry-Marques, Victoria (University of Cambridge)

[205] *Zooarchaeology and Seasonality throughout the Late Upper Palaeolithic: The Case of Vela Spila (Croatia)*
Determining season of occupation at Late Upper Palaeolithic sites is key for understanding settlement patterns at times of fluctuating climatic and

environmental conditions. This deepens our knowledge of hunting strategies as it is a well-established fact that humans' movements were in sync with animal populations' migrations. The Epigravettian site of Vela Spila in southern Croatia is used as an example of how zooarchaeology has the potential to address questions on seasonality in an innovative way, and how this information can subsequently be used to understand when and where people were moving to (or not!) at different times of year.

Spurr, Kimberly (Museum of Northern Arizona) and Ted Neff (Museum of Northern Arizona)

[20] *The Big Picture: An Introduction to Recent Archaeological and Geomorphic Research along the Colorado River in the Grand Canyon*

This paper will present a brief overview of recent archaeological and geomorphic research along the Colorado River corridor in the Grand Canyon, undertaken for both compliance and research purposes, and will introduce the symposium papers. We will offer a spatial orientation for the investigated sites and a brief history of the projects. We will also describe chronology and archaeological background pertinent to the symposium. The presentation will conclude with an introduction of the symposium paper topics and their collective contribution to cultural resource management, substantive archaeological and geomorphic research, public education, and Native American perspectives on the Grand Canyon.

Stack, Margaret (University of South Florida)

[241] *An Archaeological Appraisal of 18th and 19th Century "Spanish Indians" on the West Coast of Florida*
"Spanish Indian" is a generic term that has been used repeatedly in written documents over the past three centuries to describe a range of different social, ethnic, and economic groups in the southeastern United States. In this paper, comparative analysis of the material culture from Cuban fishing ranchos of the 18th and 19th centuries on the west coast of Florida addresses the ways in which specific "Spanish Indian" collections fit into the archaeological record. The presentation also provides suggestions for how historical archaeologists might contend with difficulties in determining and documenting identity at early historical sites in coastal Florida.

Stafford, Thomas [262] *see Jenkins, Dennis L.*

Stahl, Ann (University of Victoria)

[198] *Surplus production in a time of slavery and political dislocation. A West African case study*

Questions around surplus production were entertained in earlier literatures on processes of state formation, but they have not figured prominently in recent investigations of West Africa's historical entanglements with the Atlantic world despite interest in how the slave trade reconfigured relations between societies of varying scale. To reengage questions of surplus, this paper asks questions about how the slave trade and attendant political dislocation affected surplus production. Drawing on comparative data from the last thousand years in the Banda area, Ghana, I explore continuity and change in surplus production in relation to historical shifts in the region's political economy.

Staller, John (The Field Museum)

[15] *San Catequilla de Pichincha: Lightning Huacas, Ancient Astronomy, and Inca Expansion*
The hilltop lightning huaca (Illapa ushnu) San Catequilla de Pichincha is at 0°00" South Latitude in northern highland Ecuador. Ethnohistoric information on the cultural and historical significance and the rituals and beliefs surrounding lightning veneration are presented. Natural features, mountains, natural springs, etc., designated as 'Catequilla' or 'Catequil' were considered huacas (sacred places) associated with lightning veneration during the Colonial Period. Lightning was worshiped from Quito to Cuzco. Huacas along the equator were important to astronomical calculation. Astronomical function is demonstrated from the geometry of remaining Inca platform foundations. Preliminary survey of indicates extensive Inca presence during the Contact Period.

Stanton, Travis (Universidad de las Américas Puebla)

[85] *Ceramic Ethnoanalysis at Yaxuná, Yucatán*
Using archaeological ceramics from Yaxuná, Yucatán this paper explores the use of petrography in conjunction with the direct participation of indigenous potters in the analysis of ceramic technology. This approach is termed ethnoanalysis to distinguish it from ethnoarchaeology where potters are observed producing modern ceramics instead of participating in the analysis of ancient ceramics.

Stapleton, Charles (Northern Illinois University) and Maria Stapleton (Northern Illinois University)

[170] *Burning for the Gods: Ceramic Incensarios/Braseros as Indicators of Cultural Continuity and Disjunction in Postclassic Central Mexico*
Remains of ceramic incense burners and braseros at the Postclassic Central Mexican site of Calixtlahuaca occur in diverse forms and decoration. Some exhibit characteristics that suggest ties with earlier (Teotihuacan; Tula) and contemporary (Aztec) central Mexican ceramic traditions, while others imply the dominance of local/vernacular tradition. Our paper presents a new form-based typology for this largely untapped subset of ritual ceramic vessels which holds the potential to detect technological and aesthetic affinities or differences between cultures. More importantly, this typology provides an indicator of the degree of continuity in regional ritual practice and associated ideological systems.

Stapleton, Maria [170] see Stapleton, Charles R.

Starkey, Anna (AECOM)

[256] *[From Bulbs to Bolas - Baked Clay in Prehistoric Sites along the Sacramento River]*
Previous investigations have treated clay as a common constituent in prehistoric sites along the Sacramento River; however recent analysis has found that a substantial amount of data has been overlooked. By examining plant impressions and various formed clay artifacts, the data extracted provides new insights into resource exploitation, seasonality, and technological development during the last 5000 years. While some attributes indicate that usage appears to have been continuous other attributes provide evidence that

identifies changes in targeted resources and technology.

Starn, Orin [77] see Riffe, Jed

Starr, Sandra (Smithsonian National Museum of the American Indian)

[260] *Tracking the Birdman from the Ancient Andes to Mississippian North America: A Study of Art Historic Evidence*
Scholarship attests to a legendary creator-benefactor deity who walked ancient lands and then flew away or walked away on the sea promising to return, whose visual description bears remarkable similarity within most Pre-Columbian cultures in Latin America. A photographic analysis of over one thousand objects in pursuit of tangible evidence of this deity shows direct relationships in iconography that speak of this personage whose beneficent remembrance adorns not only the art of the ancient Andes, Mesoamerica and Mexico, but that of Adena and Etowah, thereby extending art historic material evidence from southern South America into Mississippian North America.

Stawski, Christopher J. [38] see Hirshman, Amy J.

Steadman, Dawnie (Binghamton University, SUNY)

[217] *Discussant* **[198]** see Cobb, Charles R.

Steelandt, Stéphanie (Laval University), Bhiry Najat (Laval University) and Marguerie Dominique (Archeosciences laboratory, Rennes)

[25] *Environmental change and exploitation of wood resources by Paleo and Neo-Eskimos in Nunavik (Low-Arctic of Quebec, Canada).*
Many woods and charcoals have been found in archaeological sites in Nunavik (northern Quebec, Canada). In fact, wood resources have had a special importance in the daily life of Paleo and Neo-Eskimos populations (e.g. for houses construction and heating). This study concerns the regions of Ivujivik, Inukjuak and Umiujaq located on the east shore of the Hudson Bay, respectively in the grass, shrub and forest tundra. The aims of the study is to find out the origin of present and fossil woods (driftwoods or local woods) and to document their use and exploitation by humans through dendrochronology, anthracology, geochemistry and ethno-archaeology.

Steelandt, Stéphanie [159] see Gendron, Daniel

Steele, James (University College London)

[213] *Using radiocarbon data to explore population dynamics in prehistory: discussion paper*
As the volume of accurately and precisely radiocarbon-dated archaeological material from the late Pleistocene and early Holocene increases, so too does the scope and ambition of the research questions which such dates are being used to address. In this paper I will outline some studies of human population dynamics in prehistory which deploy radiocarbon databases covering similar time and space scales to that proposed for a South American database in our symposium, and will suggest some research topics which analysis of such a database could open up.
[213] *Second Organizer*

Steele, Julia (Petersburg National Battlefield)**[173]** *Resolution and Scale: The Archaeology of Military Sites*

Armed conflict occurs on many scales and the archaeological record reflects this continuum. Studies at different levels of resolution are appropriate to answer different questions about military and related sites. This paper will look at recent work at the American Revolutionary War encampment at Valley Forge, Pennsylvania, and at features that were part of the Petersburg campaign during the Civil War and examine how methods appropriate to the scale of the resource provide the richest data for analysis and resource management.

Steele, Teresa [12] *see Texier, Jean-Pierre***Steere, Benjamin (University of Georgia)****[164]** *House segmentation and household economy in the native Southeast*

To better understand how house form varies across space and time in the prehistoric and early historic Southeastern United States, I constructed a database cataloging the architectural features of over 1000 houses from over 60 sites throughout the region. A broad-scale comparison of the houses shows that interior space becomes more segmented or partitioned over time. The division of interior space is far more visible in Late Mississippian houses than in houses from earlier periods. There are many reasons for this pattern, but I argue that it is explained by important changes in the organization of domestic production and consumption.

Steeves, Paulette (Binghamton University)**[173]** *Pebbles In A Pond; American Archaeology Needs A Landslide*

Heritage studies and Cultural Resource Management (CRM) constitute approximately 80 % of North American archaeology fieldwork. The majority of archaeologists employed in American heritage and CRM positions earn their degrees at American universities in programs that provide inadequate training for these positions. A lack of required courses in ethics, American indigenous history/area studies, and CRM contributes to this crisis in training. These inadequacies in Anthropological degree programs whether intentional or unintentional constitute an ontological violence and a continued pedagogy of oppression. Al Dekin's emphasis on ethical training in heritage studies and CRM provide a model for others to follow.

Steffen, Anna [97] *see Rogers, Alexander K.***Stehman, Kelly (National Park Service) and Lisa Baldwin (National Park Service)****[248]** *Investigating the Historic Navajo Occupation of Wupatki National Monument*

Little is known about the historic Navajo occupation of the area that is now Wupatki National Monument. Until recently, the 1985 pedestrian survey of the monument provided the only information about historic Navajo sites in the monument. During the 2010 field season, Park Archaeologists undertook an intensive documentation and archival research project in an effort to more fully understand the historic component of Wupatki NM. This paper presents the results of this important first step in

documenting the historic Navajo occupation and use of the Wupatki Basin.

Steinbach, Penny**[102]** *Reconsidering the Jester God, Part II*

The Classic Maya Jester God has three distinct variants (avian, anthropomorphic, and piscine) indicative of three distinct realms (celestial, terrestrial, and aquatic, respectively), and when three Jester Gods are arranged triadically, the triad's arrangement mimics the spatial alignment of the corresponding realm(s). Nonetheless, most Jester Gods are blends of two or more variants—why? It is my contention that the Jester God embodies not only the axis mundi (Taube 1998) but also embodies—in the blending of its distinct variants—the unity of realms and the unification of multidirectional space that the axis mundi provides.

Steinberg, John [42] *see Schreiner, Amanda Marie***Steinbrenner, Larry (Red Deer College)****[183]** *The Pacific Nicaragua Potting Tradition, AD 800-1350*

More than eighty years after Lothrop's watershed Pottery of Costa Rica and Nicaragua, archaeologists working in Greater Nicoya continue to struggle with problems of ceramic taxonomy. Decades of research have led to the identification of a bewildering array of ceramic types, but little discussion of the interrelationships between these types. This paper argues that most of the Sapoá Period polychrome types previously identified in Pacific Nicaragua—including those usually treated as markers of different immigrant Mesoamerican groups—are more alike than unlike, and are best understood as the products of a common potting tradition with a Central American origin.

Stelle, Lenville (Parkland College) [60] *First Chair***Stemp, William (Keene State College) and Steven Chung (Worcester Polytechnic Institute)****[59]** *The Quantification of Use-wear on Obsidian: LSCM and Fractal Analysis*

Previous work by Evans and Donahue (2008) using a Laser Scanning Confocal Microscope (LSCM) successfully demonstrated the quantitative documentation and discrimination of surfaces on experimental flint flakes used on different contact materials. Our experiments follow in their footsteps by testing the reliability of LSCM to quantitatively document surface roughness on obsidian flakes and discriminate the surfaces of these flakes used on different materials based on their wear histories. The wear patterns on the obsidian flake surfaces were discriminated using area-scale fractal analysis and the F-test was applied to determine confidence levels for the discriminations.

[59] *Second Chair***Stemp, William [190]** *see Oland, Maxine H.***Stephen, David (Pima Community College)****[137]** *Lost and Found: Camp Wood at the turn of the 20th Century*

Camp Wood, named for a U.S. Cavalry officer who bivouacked troops there in the late 19th century, is located roughly 50 miles from Prescott, Arizona on the

eastern edge of the Santa Maria Mountains within the Prescott National Forest. On modern maps Camp Wood is a place name disassociated from its historical context. Field and archival research have revealed that the original Camp Wood was located 7 miles further east and during the late 19th and early 20th century was a hub for mining, ranching and tourism. This poster summarizes the early history of Camp Wood and its vicinity.

[137] *First Chair*

Stephen, David [137] *see Watkins, Timothy K.*

Stephenson, Keith (USC Institute of Archaeology and Anthropology) and Adam King (South Carolina Institute of Archaeology and Anthropology)

[164] *Coastal Plain Chiefdoms of the Middle Savannah River Valley: Labor, History, and Hierarchy*

Our research focusing on the political economy of mound centers in the middle Savannah River valley has prompted a reevaluation of current interpretations regarding societal complexity. We conclude the clearest expression of classic Mississippian riverine-adaptation is evident at mound centers immediately below the Fall Line with their political ties to Etowah. By contrast, those centers on the interior Coastal Plain were politically autonomous with minimal signatures in social ranking. The scale of appropriated labor and resulting level of surplus production, necessitated by settlement in the Aiken Plateau, fostered social contradictions making communally-oriented and decentralized societies more sustainable than hierarchical forms.

Steponaitis, Vincas (UNC-Chapel Hill) [264]

Discussant [184] First Chair [184] Second Organizer

Sterling, Kathleen (Binghamton University) and Sebastien Lacombe (Binghamton University)

[153] *Mapping to See Beyond the Site*

So much of late Ice Age archaeology is focused on the scale of the individual site. Creating maps of individual sites is essential to analyzing those sites, but since we are investigating highly mobile people, we also need to create maps at broader scales to gain a fuller picture of Paleolithic life. We may not have the benefit of roads or other features of the built environment to aid us, but the creation of maps based on material culture and ideas is possible and can be a useful tool in our understanding of the individual site and of hunter-gatherer life.

Sterling, Kathleen [218] *see Lacombe, Sebastien*

Sterling, Sarah, Kristine M. Bovy (University of Rhode Island), Virginia Butler (Portland State University), Sarah K. Campbell (Western Washington University) and Mike Etnier (University of Washington)

[210] *Beyond The Palimpsest: Using High Resolution Excavation Techniques to Evaluate Household Scale Economic Strategies and Disaster Response on the Northwest Coast*

Differences in rank and economic specialization among precontact NW Coast households have been demonstrated using the spatial distribution of artifacts and subsistence resources within and between houses, but tracking the stability of social strategies for allocation of resources over time has proven difficult because of

palimpsest formation in long-lived house structures. High resolution excavation employed at Tse-whit-zen (45CA523) Washington state, isolated short-term cultural events (floor surface formation, construction and dumping events). Evidence for regionally-recognized seismic events over the past 2000 years was also found, allowing for review of changing social dynamics and resource allocation in response to extreme environmental change.

Stettler, Heather (SWCA) [215] *Discussant*

Stevens, Nathan (UC Davis)

[194] *The Middle to Late Holocene Transition in Central California*

To be presented in the session: Bioarchaeological and Archaeological Perspectives on Migration, Diet and Health in Prehistoric Central California [Richard Fitzgerald, organizer] The Middle/Late Holocene boundary in Central California can be thought of as the end of generalized, and often highly mobile lifeways and the beginning of more specialized and intensive California hunter-gatherer-fishers known from ethnographic times. The Marsh Creek Site (CA-CCO-548) spans this temporal boundary, and when compared to other regional assemblages, provides data important for understanding the character and motivations for these transitions.

Stevens, Stan [19] *see Venables, Barney J*

Stevens, Stanley (University of South Florida), Barney Venables (University of North Texas), Steve Wolverton (University of North Texas), Andrew Barker (University of North Texas) and Kent Seeley (University of South Florida)

[19] *Development of Mass Spectrometry-based Methods for Protein Residue Analysis*

Analysis of protein residue from archaeological materials has been limited by several factors including low protein extraction efficiency from the sample matrix as well as sensitivity of the downstream analytical detection method. Advances in mass spectrometry have facilitated protein identification and characterization from complex mixtures through improvements in detection specificity and sensitivity. We describe novel discovery-based and targeted methods including microwave-assisted enzymatic digestion followed by tandem mass spectrometry and multiple reaction monitoring (MRM) for the development of archaeological protein biomarkers using experimental cooking pottery for method validation. [19] *Discussant*

Stevenson, Alexander (Portland State University), Virginia Butler (Portland State University), Dongya Yang (Simon Fraser University), Camilla Speller (Simon Fraser University) and Jessica Miller (Oregon State University)

[178] *Evaluating the native status of anadromous salmonids in the Upper Klamath Basin, Oregon using mtDNA and geochemical analyses of archaeological fish remains*

Dam removal and salmon restoration in the Upper Klamath Basin, southwestern Oregon, hinge on the native status of anadromous salmon runs in the area. Current policy decisions rely on limited historic and

ethnographic documentation. Faunal assemblages from six previously excavated archaeological sites in the region provide approximately 7200 identified specimens from suckers (Catostomidae), minnows (Cyprinidae), and salmon and trout (Salmonidae). Sr/Ca ratios, mtDNA, and traditional morphological analyses are used to establish the native status of anadromous salmonids in the region over the past ~7500 years. Implications to current debates regarding water rights and dam removal are considered.

Stinchcomb, Gary [111] *see* Messner, Timothy C.

Stiner, Mary (University of Arizona) and Natalie D. Munro (University of Connecticut-Storrs)

[126] *Site formation processes and economic intensification from the Upper Paleolithic through Mesolithic at Franchthi Cave, Greece*

We examine the complex interplay of site formation processes, climate-driven landscape change and human hunting systems during the Upper Paleolithic through Mesolithic at Franchthi Cave. There is clear evidence of diet expansion and resource intensification with time in response to declining supplies of high-yield terrestrial resources. Foraging patterns were exclusively terrestrial during the early occupations but the meat diet shifted to a mixed marine-terrestrial mode, and ultimately to technologically costly fishing activities by the Mesolithic. Variation in the intensity of the occupations in the cave is an important corollary to the results on increasing dietary breadth and is examined through (a) comparisons of the relative accumulation rates of sediments and cultural materials, and (b) trends in prey diversity as a function of the time intervals represented by the lithostratigraphic layers. The site formation data show that the intensity of occupations of the cave increased in tandem with intensified use of animal and plant resources.

Stirn, Matt (Davidson College)

[115] *Alpine Estates: A GIS Predictive Model in Wyoming's Wind River Range*

GIS computer modeling is an invaluable tool for visual and spatial analysis in archaeology. The recent discovery of six high-altitude villages and their noticeably similar microenvironments suggest potential site location patterning in Wyoming's high mountains. Through the GIS analysis of topographical, arboreal, and spatial variables accompanied by two ground-truthing field surveys, this project marks an attempt to determine the predictability of undiscovered prehistoric cut-and-fill lodge villages above 10,000 ft. in Wyoming's Wind River Range.

Stockdell, Eric [221] *see* Ardren, Traci

Stockton, Trent (Tulane University), Mandy Munro-Stasiuk (Kent State University), Kakoli Saha (Kent State University), Rebecca Hill (Tulane University) and T. Kam Manahan (Kent State University)

[85] *Quantifying Paste Variability in Late and Terminal Classic Slateware Pottery*

We investigate patterns of ceramic paste variability between Cehpech and Sotuta sphere Slateware pottery recovered from archaeological contexts in the Northern Maya Lowlands. True color and polarized images captured from a petrographic microscope are merged

and co-referenced. Mineralogical composition of individual grains, voids and inclusions are quantified using multispectral image classification software, and precise percentages of each class are calculated. Segmentation of the classified images produces polygons from which morphometrics can be extracted and used to characterize ceramics. Preliminary results suggest the method is faster, more accurate and more easily reproducible than standard petrographic point counting.

Stodder, Ann (Field Museum)

[143] *Context as Key for Understanding Mesa Verde Mortuary Data at Local and Regional Scales*

Mortuary data from Pueblo I sites in the Dolores and Animas-La Plata Project areas suggest that the structural and nonstructural contexts of burials are critical to understanding mortuary practice in this pivotal era and in earlier and later Ancestral Pueblo groups. Extramural interment contexts and their spatial relationships to houses, surface structures, and stockades are worthy of systematic study. Pithouse burials on floors and benches, in ventilators and in fill, vary in temporal relation to structure and site abandonment. House burials in particular suggest a fruitful area of comparison with other SW groups and an important category for metadata development.

[237] *see* Osterholtz, Anna J.

Stoellner, Thomas [267] *see* Reindel, Markus

Stojanowski, Christopher M. [133] *see* Sereno, Paul C

Stokeld, Rachel (University of Idaho)

[175] *Chinese Ceramics of a Frontier Economy*

Ceramics of Chinese manufacture are well represented in the archaeological assemblages of frontier economy sites dating to the mid to late 19th century in Western North America. Although much site specific analysis of such ceramics has been completed, little comparative analysis data exists. In this paper I will attempt to synthesize the data on Chinese manufactured ceramics to explore diachronic changes within these frontier communities.

Stokes, Robert (Archaeological Consulting Services), Teresa Pinter (Archaeological Consulting Services, Ltd.), Margerie Green (Archaeological Consulting Services) and Susan Shaffer Nahmias (Independent Education Consultant)

[83] *U.S. Bureau of Reclamation's Long-Term Section 106 and 110 Survey and Public Outreach Efforts at Lake Pleasant Regional Park near Phoenix, Arizona: 26 Years of Research by Archaeological Consulting Services, Ltd.* Reclamation and ACS have collaborated on various projects over a 26 year period at Central Arizona Project's storage basin at Lake Pleasant, beginning with Section 106 survey for the new Waddell Dam, followed by Section 110 surveys of the lake basin and creation of a cultural resources management plan. Recently, we have worked together on redesigning the Lake Pleasant Visitor Center and conducting excavations at a rockshelter in a remote part of the park slated for increased visitation. As a result of these long-term investigation and research efforts, Reclamation has obtained a large-scale database and cultural/historical

overview of the park.

Stokes, Robert [83] *see Green, Margerie*

Stoll, Anne [151] *see Douglass, John G.*

Stoll, Marijke (University of Arizona) and Dante García Ríos (Zone Arqueologica de Monte Alban)

[182] *Empty Space, Active Place: Examining the Relationship Between Ball Courts and Plazas in Prehispanic Oaxaca*

Plazas and ball courts were focal points of public life for prehispanic Oaxacan communities. Survey data from the Central Valley and Mixteca regions of Oaxaca reveal that the construction and location of ball courts with respect to plazas changed over time from the Late Formative to the Postclassic eras. Based on this data, we suggest that the communal role of ball courts in Oaxacan political relationships shifted as well. Using GIS analysis, we examine how the social meaning of both ceremonial spaces may have changed through time and under different political regimes.

[127] *First Moderator*

Stoll, Marijke [237] *see Fields, Misty*

Stone, Andrea [60] *see Griffith, Cameron S.*

Stone, Elizabeth

[10] *Methods for recovering mud-brick architectural patterns from sub-meter satellite imagery: A case study from Iraq*

Today, high resolution satellite imagery makes possible the mapping of architectural patterns of entire Mesopotamian cities, towns and villages. These traces are only visible under conditions of high ground water resulting from irrigation or rainfall. This paper describes methods using medium resolution Modis imagery to determine both when and where it rained in Iraq over the past decade, and which areas were irrigated when, information which allows the selection for purchase of imagery most likely to preserve such traces. These methods should pertain to other arid areas with mud architecture, such as Egypt, the Indus, and the American Southwest.

Stone, Lester [161] *see McMahon, Catherine*

Stone, Pamela (Hampshire College)

[237] *Contextualizing Death and Trauma at Canyon de Muerto*

This poster explores how human taphonomy offers insight to understanding the structural violence that impacted the discovery, recovery, and analysis of human remains from sites within Canyon del Muerto, (400-1300AD). Also included in this analysis is a discussion of the temporal relationship of these sites juxtaposed with the rise and fall of the Mesa Verde and Chaco Canyon complexes focusing on the role of interpersonal violence, discussed through the analysis of death-related forces. These ideas are then presented within an examination of indirect forms of structural violence, which often mitigated the physical violence endured by this population.

Stone, Suzanne (HDR/e2M) and Judy Berryman (HDR/e2M)

[115] *The Las Flores Estancia (CA-SDI-812/H)- GPR Mapping, Site Definition and Lost Features*

The NRHP-listed Las Flores Estancia is on MCB, Camp Pendleton, Southern California. It is a Mission Period adobe compound (1820s-1860s) and is part of a larger complex containing an adobe ranch house and prehistoric loci. The Estancia's precise dimensions remain uncertain, given the lack of archival data and absence of clearly visible corners. Geophysical studies were conducted in 2003 to delineate the major structural components. The 2010 investigation addressed questions generated by the 2003 study. This included GPR, ground truthing, interviews, and a review of historic photos. This paper discusses new information regarding the building configuration and associated features.

Stone, Tammy (University of Colorado Denver)

[201] *An Architectural Biography of Point of Pines Pueblo*

Large communities in middle-range societies are dynamic entities in which the tensions between sub-group formation and village integration are played out daily through shifting political and social alliances through the creation and redefinition of history. Architecture, as a metaphor for social constructs in which individuals and groups live their everyday lives, can be used to interpret these social actions through the construction of a "biography" of architectural change. The theoretical underpinnings and associated methodology are presented and illustrated with data from Point of Pines Pueblo, a multi-ethnic pueblo in Central Arizona.

Stoner, Ed [61] *see Cunnar, Geoffrey E. [262]* *see Estes, Mark B.*

Stoner, Edward (Western Cultural Resource Management, Inc.) and Geoffrey Cunnar (Western Cultural Resource Management, Inc. (WCRM))

[262] *Fire Creek: A New Look at Old Dirt on Alluvial Fans in the Central Great Basin*

In 2010 WCRM conducted data recovery investigations on the Fire Creek National Register Archaeological District located in the Central Great Basin. Locus A/R, a single-component Western Stemmed Tradition site within the district, is located on a late Pleistocene alluvial fan and contains evidence of several distinct and astonishingly complete lithic reduction trajectories involving a locally available high quality basalt. General site context including discussions of lithic terrane, buried soils, and initial findings are reported for this significant Paleoamerican site which may in the future help provide answers to unresolved questions regarding the earliest peopling of the Great Basin.

Storey, Rebecca (University of Houston)

[56] *Gender, Status, and Sex in the Rural Maya Burials of Late Classic, Copan*

Classic Maya skeletal samples are dominated by elite and central residences. Nineteen females and sixteen males were recovered from modest residences in Copan's hinterland. The usual male advantage in mortuary treatment found among many Precolumbian Maya is not present in the rural mortuary pattern. Females have some of the most elaborate treatments, although no individual in this sample had more than four grave furnishings (this was a female). The context and grave characteristics of some female inhumations

suggest that hypogamy from higher status families might account for these patterns. The purpose was probably similar to elite practice, to foster alliances.

[237] *see Carroll, Rebecca L.*

Stosel, Victoria (University of Alaska, Fairbanks)

[240] *An Examination of Alaskan Shell Beads*

This paper reports on an analysis of the University of Alaska's Museum of the North's shell bead collection that focuses on determining the species utilized and characterizing manufacturing styles. While articles have discussed shell beads recovered from sites across Alaska, the discussions are often brief and lacking in detail. Information on species is vital to determine the raw materials available to Alaskan indigenous populations and their potential point of origin. Manufacturing styles are critical to assessing technical skill. Once completed this project should provide a comparative collection for researchers in both Asia and North America.

Stothert, Karen (Center for Archaeological Research-UTSA)

[15] *The Manteno-Guancavilca Accommodate the Inka State*

Recent excavations in sites occupied by Pacheco and Guancavilcas (whose archaeological remains are classified as Manteno-Guancavilca) have stimulated this interpretation of the relationship between the imperialist Inka State and the autonomous, late prehistoric ethnic groups of the coast of today's Ecuador. Evidence related to technologies of power (architecture, ceramics and metals) suggests how State agents extended symbolic hegemony over the culturally integrated but politically decentralized peoples of the equatorial coast.

Stottman, M. (Kentucky Archaeological Survey)

[197] *A Slow and Moving Target: The Reality of a Practice of an Activist Archaeology*

While the value of an activist archaeology has been widely discussed amongst archaeologists over the last several years, the realities of the practice of such an endeavor have not. In this paper I will propose a strategy for the practice of an activist archaeology and examine the reality of being an activist archaeologist. I will draw from my experience of conducting archaeological projects within an activist framework over the last ten years. Through this experience, I will examine the ethical and practical concerns of using archaeology to advocate for communities.

Stotts, Rhian (Arizona State University)

[164] *Storage Behavior in the Mediterranean: An Ethnoarchaeological Approach*

This study reviews ethnographically recorded storage practices in the Mediterranean in order to develop archaeological expectations for storage behavior. The region is constrained by the environment, which influences subsistence and storage practices. Research suggests that rather than look for large-scale storage facilities, archaeologists should examine changes in domestic storage, particularly at small-scale agricultural centers. Elites' ability to extract surplus in early complex societies was contingent on increased yield by producers and may be seen in increased storage capacity at the domestic level. This paper suggests ways archaeologists

can document resistance to elite control of agricultural surplus.

[164] *First Chair*

Stovel, Emily (IIAM-UCN and Ripon College)

[228] *pXRF on the South-Central Andean Ceramic Collections at the Field Museum in Chicago*

This paper outlines the preliminary results of portable X-Ray Fluorescence analysis on the South-Central Andean ceramic collection at the Field Museum of Natural History in Chicago. During the research period, just under 700 vessels from three countries were photographed and analysed. Initial results provide a series of caveats concerning archaeometric analysis including reflections on sample size, the origins of elemental variation, and regional applications of these methods. Future avenues of research and the potential for using the pXRF method for the definition of ceramic types and regional cultural models are evaluated.

Stratton, Susan (CA Office of Historic Preservation)

[172] *Remediating Toxic Behaviors*

Can we really change an all too pervasive behavior of federal agencies and others who are continually out of compliance with the National Historic Preservation Act? The setting for this presentation is the EPA's cleanup of the Sulfur Bank Mine at the Elem Indian Colony near Clear Lake, California. This paper explores the toxic behavior of one federal agency and the steps taken in consultation with the State Historic Preservation Officer for not only the remediation of the mercury and arsenic contaminants in the soil and groundwater, but also for the remediation, and future prevention, of its toxic behaviors.

[112] *First Chair* [166] *see Dutschke, Dwight A.*

Strawhacker, Colleen (Arizona State University)

[223] *Prehispanic Irrigated Agricultural Soils on the North Coast of Peru: Understanding the Effects of Long-Term Irrigation*

Little is known about the effects of long-term irrigation on agricultural soils, especially in archaeological contexts. The Pampa de Chaparri on the north coast of Peru is home to well-preserved prehispanic irrigated fields. These field systems provide an excellent opportunity to study the effects that long-term irrigation had on the soils during their use from AD 900 until Contact in AD 1532. This paper will present results from extensive sampling of agricultural soils on the Pampa and will address how long-term irrigation affects soil quality. Interpretations from this research will also address possible contemporary applications to irrigated systems used today.

[223] *First Chair* [223] *Second Organizer*

Strickland, Glenn [81] *see RabbySmith, Steve L.*

Striker, Sarah (Arizona State University)

[208] *Archaeological Approaches to Identifying Captivity in Iroquoian Communities*

During the seventeenth century, latent tensions between Native communities in the Northeast were exacerbated by the arrival of European groups contributing to extensive regional warfare. Throughout this period, many Iroquoian and non-Iroquoian peoples were brought into Iroquoian communities as captives, adoptees, refugees, and slaves. Utilizing captivity narratives, historical

accounts, and archaeological data, this study outlines some archaeological correlates of captivity, slavery, and adoption in Five Nations Iroquois communities. This work will provide an important framework for understanding the roles of these newcomers in the archaeological record, as well as contribute to the growing literature on archaeological approaches to captivity.

Striplen, Chuck (UC Berkeley/San Francisco Estuary Institute)

[222] *Fire and landscape change in Central Coastal California*

This research contributes to a number of gaps in knowledge pertaining to the nature and extent of pre-colonial, indigenous resource management in the Central Coastal region of California (USA). This paper summarizes progress on analyses of fire history and historical ecology data gathered in and around the newly created Quiroste Valley State Cultural Preserve, a first contact village site roughly 50 miles south of San Francisco, CA. We also contextualize the overall research effort in the landscape of publicly owned open space management, Indian policy, and interdisciplinary research.

[222] *Second Organizer*

Stroulia, Anna (University of Southern Indiana)

[164] *Unusual Disposal of Ground Stone Tools: The Case of Kremasti, Greece*

Subsurface pits have traditionally been assigned mundane functions like storage or garbage disposal. Studies in the last fifteen years, however, suggest that some pits in prehistoric Europe were dug and used for extra-utilitarian purposes. This seems to be the case with 462 pits excavated at the Neolithic site of Kremasti, northern Greece. These pits contain ca. 2500 fragmentary and intact ground stone tools along with sherds and complete pots, disarticulated animal/human bones as well as complete skeletons, building material, lithics, ornaments, and figurines. The paper discusses the different kinds of ground stone tools and the conditions of their disposal.

Strout, Nathan [139] *see Bernardini, Wesley*

Strudwick, Ivan (LSA Associates, Inc.)

[123] *Pimu, the Final Chapter: Historic Accounts concerning the Native Depopulation of Santa Catalina Island, California*

Human occupation of the California Channel islands has been proven by radiocarbon dating to exceed 10,000 years; on Santa Catalina island it exceeds 7,000 years. The native population of the Channel Islands rapidly declined after European occupation of California in 1769. Although the removal of the last natives is well-documented from San Nicolas Island, it is far less well-known for Catalina where recent research estimates a population of 3,000 was likely. Information documenting the final decline and ultimate fate of the native Santa Catalina Island population is presented.

Stueber, Daniel (Archaeological Investigations Northwest)

[160] *Glass Buttes Oregon: 14,000 Years of Continual Use*

Late Pleistocene Clovis flintknappers to present day

flintknappers have used Glass Buttes, one of the largest obsidian sources in Oregon, for toolstone procurement. This paper will discuss the nature, quality, and quantity of obsidian toolstone available at Glass Buttes, uses of this resource through time, archaeological work that has been done there, impact of the modern flintknappers, and the current Bureau of Land Management plan for allowing and controlling modern procurement of obsidian at Glass Buttes.

Sturm, Jennie (TAG Research) and Michele Koons (Harvard University)

[163] *Ground-Penetrating Radar Investigations at Licapa II, Peru*

In June 2010, ground-penetrating radar (GPR) surveys were conducted at the Moche center of Licapa II in the Chicama Valley, Peru, to test the hypothesis that domestic structures existed near the monumental center. Surface artifact scatters suggested there were structures in this area, though their spatial extent, orientation, and depths were unknown. Because of the three-dimensional mapping capabilities of the GPR method, all of these traits were identifiable through careful data processing and analysis. The information from these GPR maps has been used to study and understand the overall layout and composition of this site.

Stutz, Aaron (Oxford College of Emory University) and Jamie Clark (Southern Methodist University)

[17] *Continuity Through Transitions: A Biocultural Evolutionary Perspective on Population Dynamics and Technological Change in the Upper Pleistocene*

The notion of paleoanthropological "transition" often emphasizes punctuated social, technological, or demographic change. However, many late Middle and Upper Pleistocene transitions are most clearly defined by rapid regional changes in lithic technology, while associated animal exploitation and mobility strategies may shift more gradually. This type of trend highlights the mosaic nature of biocultural change during this period. Using two transitions (the southern Levantine MP-UP and the southern African Howieson's Poort-MSA) as a key comparison, we explore the multidimensional nature of long-term change during the Upper Pleistocene, suggesting that aspects of continuity must be considered when explaining biocultural evolutionary trends.

Stvan, Jeffrey (University of Chicago)

[174] *Building on Tradition: The Transmission of Architectural Knowledge Among the Late Moche*

Although data illuminating construction and remodeling processes - and the technical choices they entail - are typically recovered when excavating pre-Columbian architectural remains on the Peruvian North Coast, the potential of these data to inform a more sophisticated conception of architecture as practice and to facilitate an understanding of how architectural knowledge was communicated, has largely been unrealized. Using data drawn from a selection of Late Moche Period sites, this paper will begin to identify and evaluate the modes by which architectural knowledge - both morphological and technical - was transmitted between individuals, as well as across time and space.

[174] *First Chair*

Suasnavar, Jose and Arthur Demarest (Vanderbilt)

University)

[191] *Variability in the Violent Destruction of the Pasion Valley Cities and Cancuen: Implications for the Early Collapse of the West*

The cities of the Pasion trade route had the earliest and most violent collapses beginning before A.D. 740. Dos Pilas, Aguateca, other cities, hilltop fortresses, and even small villages were completely destroyed with minimal or no evidence of ritual. In contrast, the international port center of Cancuen, strategic head of navigation for the entire system, was completely "ritually terminated" with great care and respect including the mass execution of its royalty and nobles. Here we discuss the nature and possible reasons for variability in the violent demise of the western cities and implications for theories of the Classic Maya collapse.

Sublett, Jan [113] *see Merriot, Ivy*

Sugiura, Yoko (Instituto De Investigaciones Antropológicas, UNAM)

[21] *In search of genetic identity of the human group in the Upper Lerma wetland, Central Mexico*

At around 500AD, a considerable area of the wetland known as Chignahuapan, Central Mexico, was transformed into habitable space. In this paper, we discuss on the people who colonized it from genetic point of view.

Sulkosky, Rita [80] *see Natoli, Amelia M.*

Sullivan, Alan (University of Cincinnati), Christopher Roos (Southern Methodist University) and Philip Mink (University of Kentucky)

[199] *The Archaeology of Subsistence Agriculture in Coniferous Ecosystems*

Premised largely on pueblo ethnography or archaeological investigations of large agriculturally-dependent communities, inferences concerning the nature of ancient agricultural production in the vast coniferous hinterlands of the upland American Southwest are, at best, weakly confirmed. To understand this problematic situation, we first examine various lines of evidence – assemblages, features, and terrain transformations – upon which these conventional models of maize agriculture and their effects are based. Then, to remedy the situation, we present archaeological and paleoecological data from the Grand Canyon region to illustrate that a rejection of the "Corn Paradigm" as an explanatory framework unconstrains consideration of alternative paleoeconomic models and their socio-ecological consequences.

[20] *Discussant*

Sullivan, Elaine (UCLA)

[146] *3D modeling and the 4th dimension:*

Reconstructing place through time at Egyptian cult sites
In multi-layered archaeological sites, the earliest forms of the built landscape are often obscured by later structures, making investigation and presentation of these areas via traditional maps and plans inadequate. UCLA archaeologists have developed projects utilizing GIS and 3D modeling to represent multiple phases of past cultural landscapes. The "Digital Karnak Project" shows how the visualization of complex data, including factors of time and volume, can be displayed and

analyzed successfully using Virtual Reality modeling. In "3D Saqqara," we reconstruct the ancient landscape of Egypt's famous burial ground to investigate inter-visibility between the necropolis and the neighboring city of Memphis.

Sullivan, Lynne (University of Tennessee) and Bobby Braly (University of Tennessee)

[82] *Correspondence among Colleagues: WPA Archaeology in Letters*

The New Deal-era collections at the Frank H. McClung Museum are among the largest of their kind. Many scholars use the artifacts and field records, but few know about the related, large correspondence archive. These letters, exchanged between University of Tennessee staff and many other anthropologists, illustrate the close personal and professional connections of the still-young discipline. The letters discuss topics such as archaeological field and laboratory techniques, interpretations, staffing, and government relations. This correspondence, now available in digital format, provides insights to the personalities and ideas that shaped and continue to influence archaeology in the United States.

Sullivan, Michael [139] *see Herr, Sarah A.*

Sunseri, Jun (University of California)

[153] *Cartographies of the State: Landscape archaeology of a colonial frontier*

Archaeologists create maps while trying to interpret the spatial record of human behavior. However, in tacking back and forth between our contemporary geospatial standards, analytical practices, and paradigms, we may well be propagating discords which distance us from not only the understandings of cultural landscapes we wish to investigate, but also the descendant communities to whom we must answer. From the Spanish colonial endeavor to create a strategic frontier in an Indian landscape, to the repetitive transformations of Mexican then American land tenure, the historic site of Casitas Viejas has long been a locus of cartographic contestation.

Supak, Karen (BHE Environmental, Inc.)

[224] *Technological Stasis through Social Change: Understanding Motivations for Lithic Procurement Behavior at Clarksville Base, Ft. Campbell, Kentucky*

This paper examines behavioral implications of the prehistoric use of several lithic procurement areas within the former Clarksville Base facility at Fort Campbell, Kentucky. Patterns of raw material exploitation along Little West Fork Creek indicate that methods for and products of chert procurement have remained remarkably static over time, despite corresponding differences in prehistoric settlement patterning, social complexity, and relative group mobility. Results indicate that a number of motivating factors influenced prehistoric lithic exploitation in the Fort Campbell region, including chert quality, distance from the source, regional variation in lithic types, and ease of raw material procurement.

Supernant, Kisha (University of Alberta)

[232] *To Defend or not to Defend?: An evaluation of the defensibility of rock feature sites in the Lower Fraser River Canyon, BC*

A recent concern in the Salish Sea is the impact that

warfare and conflict had on defining and transforming pre-contact community identities. Defensive sites are a principal indicator of the presence of warfare in the past and have been used to argue for the presence of intra-village community organization and co-ordination. In this paper, I use the results of two quantitative analyses of the defensibility rock features in the Lower Fraser River Canyon to evaluate whether the construction of these features required community co-ordination and suggest that we need to examine the defensibility of the entire landscape, not just sites.

[232] *First Chair* [232] *Second Organizer*

Surette, Flannery (University of Western Ontario, London)

[49] *On Convents and Acllawasis—Spanish Analogies and the Policies of Imperial Assimilation*

Beginning in 1534, the Spanish recorded descriptions of the houses (acllawasi) of chosen woman (the acllacona) through which the Inca incorporated the daughters of conquered peoples into the empire. These houses were often described as analogous to Spanish Roman Catholic convents which were used to acculturate the daughters of Andean indigenous elite. I argue that the analogy between acllawasi and convento is not mere bias but indicative of an example of the policies of assimilation under Inca rule as seen through a Spanish lens who also actively employed similar tactics in their own consolidation of power.

Surovell, Todd [155] see Prasciunas, Mary M. [57] see Waguespack, Nicole M.

Surprenant, Ann, and Brian Robinson (University of Maine)

[265] *Intertidal Archaeology and Good Preservation: Low Tech Methods at the Seabrook Marsh Site, New Hampshire*

The Seabrook Marsh site is an estuarine intertidal site excavated in 1975. It was discovered by an avocational archaeologist and excavated through the University of New Hampshire with low-technology methods. Thirty years later it remains a unique window on coastal occupations of 4,000 years ago for the southern Gulf of Maine. A terrestrial occupation site was encroached upon by rising sea level in a low energy environment, preserved below salt marsh, and defended by bedrock outcrops. It has excellent preservation of bone and soils. The potential is high for both submerged terrestrial and primary wet sites at much greater depths.

Sutter, Richard (Indiana University-Purdue University Fort Wayne)

[233] *Dentally Derived Phenetic Relatedness Among the Moche (AD 200 – 750) of the North Coast of Perú: A Comparison of the Skeletal Populations from San José de Moro to those from the Moche Valley*
Biodistance comparisons of Middle (AD 500 – 650), Late (AD 650 – 750), and Transitional (AD 750 – 800) period skeletal samples from San José de Moro to both a previously reported Middle period sample from the nearby Lambayeque Valley site Pacatnamú and eight contemporaneous samples from the Moche Valley suggests that increased gene flow occurred from the southern Moche region into the Jequetepeque Valley during the collapse of the southern Moche polity. The

broader implications of these results for our understanding of the collapse of the Moche are discussed.

Sutton, Wendy [211] see Hegberg, Erin N.

Swanton, Kristin (Indiana University of Pennsylvania)
[154] *Public Archaeology and Landowner Support at the Battle of Mystic Fort*

Recent archaeological projects have shown that extensive public outreach and transparency in research questions and methods can create meaningful relationships between landowners and archaeologists. A case study to illustrate this relationship takes place at the Battle of Mystic Fort, a privately owned Pequot War battlefield site in southeastern Connecticut. Despite contemporary conflicts in the region, researchers from the Mashantucket Pequot Museum and Research Center were able to gain support from landowners to conduct fieldwork at the site. This paper will address some of these conflicts and how archaeologists were able to address landowner concerns and meet their research objectives.

Swartz Dodd, Lynn [220] see Friedman, Elizabeth S.

Sweeney, Alex (Brockington & Associates) and John O'Donnell (Brockington and Associates)

[81] *Settlement along the Savannah: Section 110 Survey for the Savannah District, USACE*

In 2010, Brockington and Associates conducted cultural resources survey through the American Recovery and Reinvestment Act program for the U.S. Army Corps of Engineers, Savannah District on several tracts of federal lands around Lake Hartwell and the Richard B. Russell Reservoir. Previous investigations prior to the construction of hydroelectric dams near these areas identified hundreds of prehistoric and historic sites, and our field investigation also identified numerous sites around each area. Large-scale examination of these sites allows observations of patterns and changes in settlement distribution over time in the region, and illuminates variables that contributed to site locations.

Swenson, Edward (University of Toronto)

[125] *The Search for Moche Thirdspace: The Politics of Place-Making in Andean Prehistory*

Dr. Mackey has made important contributions deciphering the political significance of built environments in the Andes, contending that Chimú monuments represented more than the symbolic by-product of sociopolitical forces. Instead, power was directly negotiated through the design, construction, and experience of authoritative architecture. Building on these insights, I explore Moche representations of space, arguing that conscious projects of place-making played a critical role in the formation of Moche political subjectivity. Ultimately, an examination of contradictions in the conceived, perceived, and lived dimensions of Jequetepeque ceremonial architecture permits an appreciation of the cultural particulars of Moche identity politics and ideological struggles.

Swygert, Amelia (Howard University)

[138] *The Configuration and Use of Structures at Fort Ojo Caliente*

In 2009-2010 the Gila Archaeological Project conducted limited exploration of Ojo Caliente, a fort used during the Apache Wars of the late 1800s. Investigations included ground-penetrating radar (GPR) and walkover surveys, and partial mapping of the adobe structures. This poster will analyze the information gathered, supplementing it with archival research, in order to better understand the fort's layout and the military's use of built and open space in fortifications. Of particular interest is predicting where an unmarked cemetery could fit into the fort's configuration, as its location has never been pinpointed, and suggesting areas for future GPR and surface survey.

Sykes, Becky (Phillips Academy) and Margaret Conkey (University of California Berkley)

[196] *Integrating Archaeology into a High School curriculum: the Andover Example*

In this paper we discuss the history of how Phillips Academy (Andover) and the R.S. Peabody Museum have worked together over the past seven years to create a model program for the integration of a museum and its resources into a high school curriculum. The presentation includes an examination of the critical administrative decisions that initiated the process and how program growth was managed, as well as how the Peabody Museum example can inform other institutions seeking to expand educational outreach.

Sykes, Becky [196] see Doheny, Marcelle A

Szczepanowska, Hanna (Smithsonian Institution, Museum Conservation Center) and Thomas Mathia (Thomas G. Senior Scientist, Center National de la Recherche Scientifique, (CNRS) Laboratoire de Tribologie et Dynamique des Systems, LTDS, Lyon, Fra)

[242] *Space Heritage, model of transmitting aerospace technology concepts to the public; a case study, Apollo heat shield.*

The authors merge engineering and scientific knowledge with humanistic studies of complex aerospace technology to develop a model of transmitting technical concepts to the public. This model is focused on human interaction with the environment of which space exploration is one aspect. The Apollo Program and atmospheric reentry technology serve as an example of how a complex aerospace technology can be transmitted to the public in a succinct manner. The space heritage collection at the National Air and Space Museum supplied specimens of heat shield from the Apollo Program testing vehicles AS 201 and AS 202 for this study.

Szirmay, Jenica (California State University, Stanislaus), Lauren Hall (California State University, Stanislaus), Jasmin Valenzuela (California State University, Stanislaus) and Cassandra R. Bill (M.A.R.I. / Tulane University)

[31] *This Old Thing?: The Use of Elite Material Culture in Strategies of Affiliation and Domination at Los Naranjitos, El Paraíso Valley, Western Honduras*

Portable objects can forge powerful ties among social actors, and are often employed to create and communicate identities, status, wealth, and affiliations. Portable material culture, particularly pottery, appears to have been used extensively in the creation and

communication of political affiliations within the elite residential group of Los Naranjitos, adjacent to the autochthonous Classic period center of El Cafetal, in the El Paraíso Valley, western Honduras. In this poster we examine the roles of both elite Copan pottery and locally manufactured wares in negotiations of power, wealth, and prestige on the edge of the Copan kingdom.

Szpak, Paul (University of Western Ontario), Jean-Francois Millaire (University of Western Ontario), Fred Longstaffe (University of Western Ontario) and Christine White (University of Western Ontario)

[35] *Effects of Seabird Guano Fertilization on the Stable Isotope Composition and Growth of Maize (Zea mays): Results from a Controlled Study*

Seabird guano from the arid western coast of South America was one of the most widely used fertilizers in the nineteenth century, although its importance in prehispanic agricultural systems has been difficult to determine. This paper presents data from a controlled study of maize fertilized with Peruvian seabird guano, outlining the effects of different fertilization regimes on maize growth and isotopic composition ($\delta^{13}\text{C}$ and $\delta^{15}\text{N}$). We discuss the implications of this study for the identification of guano fertilization through isotopic analysis of archaeological materials.

Tabares, A. Natasha [230] see Walsh, Michael R.

Tabor, Neil [3] see Loewen, Natalia

Tackett, Stephanie (Pima Community College) and Ashley D'Elia (Pima Community College)

[137] *Distribution of groundstone in relationship to the topography and vegetation of the Burro Creek/Pine Creek Archaeological Survey area*

The Burro Creek/Pine Creek Archaeological Survey area is best described as pinon-juniper woodlands. Colorado Pinon (*Pinus edulis*) is a common species there and is an important resource in the subsistence strategies of indigenous cultures due to the high nutritional value of its pine nuts. This poster describes the presence and absence of pinon as it relates to groundstone artifacts found at different sites within the survey area. It interprets geographic data regarding elevation, north vs. south facing slopes, water sources and precipitation necessary for pinon production and discusses site distribution and possible locations of processing stations based on artifact volume.

Tafilica, Zamir [27] see Galaty, Michael L.

Tafari, Maryanne [237] see Robb, John E.

Takamiya, Hiroto (Sapporo University)

[149] *The Evolution of Complex Societies on the Islands of Okinawa, Japan*

Prehistory of Okinawa exhibits several unique cultural phenomena in the context of island archaeology. One of these is that the archipelago witnessed the evolution of social organizations from a band to the state, known as the Ryukyu Kingdom. I will review the evolution of social organizations in Okinawa. In this case, available natural resources did not allow the evolution of chiefdoms. It was agriculture, which was introduced ca. 11th century AD, that enabled the evolution of chiefdoms. Furthermore, the

evolution of the state level society might have been explained by what Patrick Kirch (2000) has suggested as "the wet and dry".

Talbot, Richard [94] *see Janetski, Joel C.*

Talcott, Johanna (The Pennsylvania State University)

[129] *Paleoethnobotany of the Salt Springs Archaeological Site, Marion County, Florida*
Excavations at the Salt Springs Archaeological Site (8MR2322) in the Ocala National Forest, Florida, revealed a submerged, Middle Archaic (approx. 8000-5000 years BP) black earth midden with exceptional organic preservation. The initial paleoethnobotanical analyses have focused primarily on the significance and implications of two important economic plant taxa from the family Cucurbitaceae: the gourd/squash (*Cucurbita* sp.) and the bottle gourd (*Lagenaria* sp.). The materials from this site provide valuable insight into the biogeography of both gourd species as well as ancient pre- or non-agricultural management and manipulation of these and other wild plant resources.

Tanaka, Yutaka (Ibaraki University)

[149] *Contribution of the 'Burial Group of Chiefly Lineage' Approach to Japanese Archaeology and Issues Related to this Approach*

The 'burial group of chiefly lineage' concept assumes that a group of burial mounds clustered in a small area and built in chronologically successive stages was a result of generations of a single lineage of chiefs building their own graves. This concept is an important underlying assumption of an influential argument for the Kofun society as an early state. The problem is that, while this concept incorporates some vague assumption, the early state model has gone beyond this vagueness can tolerate. When we overcome this problem, this concept can make further contributions to Japanese studies of state formation.

Tankersley, Ken [124] *see Culver, Emily*

Tankersley, Kenneth (University of Cincinnati), Nicholas Dunning (University of Cincinnati) and Vernon Scarborough (University of Cincinnati)

[119] *Developing a Tephrochronology and Paleoenvironmental Record from Tikal's Anthropogenic Reservoirs*

AMS radiocarbon dating, X-ray powder diffraction (XRD), petrography, magnetic susceptibility, and particle size analysis of sediments from the reservoirs Corriental and Perdido reservoirs at Tikal indicate at least nine distinctive volcanic events during the early and late Holocene. Volcanic events are indicated by a high relative percent composition of smectite and volcanic quartz in the reservoir sediments. Sequences of volcanic minerals are correlative with magnetic susceptibility records and provide important new insights into the paleoenvironmental record of Tikal. Volcanic ash fall across the southern Maya Lowlands may have occasionally affected regional climate, but also provided an important economic resource.

Tatchell, Brittney (Binghamton University, SUNY)

[49] *Identifying the chosen women of the Inka: A biological profile of aclla crania from Pachacamac, Peru*

As an institution of the Inka state, the aclla reflected socio-religious values of the Empire and its influence on contemporaneous cultural groups. Analysis of aclla skeletal remains can provide unique information about the composition of this social class and its diverse roles within the Empire. Identification of aclla burial contexts relies in part upon the ability to discriminate physical traits representative of this group. However, a case study from Pachacamac, Peru highlights the tautological nature of assessing "aclla traits" from presumed aclla remains. Preliminary biological findings for this unusual sacrificial sample are also discussed.

Tate, Sarah (College of Wooster)

[161] *Stewards of Their Own Lands: An Examination of the Tribal Role in Historic Preservation*

American Indians' role in the preservation process is of major concern to tribes who strive to gain and maintain control over their cultural heritage. Historically, the federal government has retained authority over the fate of native cultural sites. However, over the past few decades, the government has taken action to increase the level of tribal participation in historic preservation. This research examines the effectiveness of federal action as well as the conditions that empower Native American tribes to act as stewards of their own archaeology and cultural identity.

Taube, Karl [41] *Discussant*

Taylor, Amanda (University of Washington)

[232] *Triangulating the Emergence of Territorial Circumscription in the San Juan Islands, Washington*
Ethnographers in the Gulf of Georgia emphasized territorial systems where access to land, water, and resources was negotiated through inter-village kin ties. The development of these systems during prehistoric times remains poorly understood. Following Alison Wylie's suggestion that strong evidential reasoning can be achieved by triangulating multiple lines of evidence, I test hypotheses on the emergence of territorial circumscription in the San Juan Islands by integrating three different approaches. I build on a traditional settlement pattern study by considering a human behavioral ecology approach to site distribution and a landscape archaeology approach to presence and abundance of defensive sites.

Taylor, Anthony (University of Nevada, Reno) and Robyn Crook (Saint Mary's University)

[35] *Assessing the Contribution and Ascribed Status of Floral Resource Collection to Paleo-diets in the Great Basin*

This poster examines subsistence strategies and possible gender roles of prehistoric peoples within the Great Basin. Floral assemblages from various type sites are examined in detail, as well as distributions of material items associated with food preparation. Local floral food staples are analyzed illustrating caloric values, protein and fat proportion, and nutrient contribution which are compared to foods more often considered high status or prestigious. This data is supplemented by reexamination of existent ethnographic literature. Using this multifaceted approach reveals surprising trends crucial for understanding the roles of individuals and task groups within the greater prehistoric social organization.

Taylor-Perryman, Rebecca [22] *see* McCall, Grant S.

Teeter, Wendy (Fowler Museum at UCLA), Desiree Martinez (Harvard University) and Karimah O. Kennedy Richardson (National University)
[123] *Human occupation and environmental interactions within the Southern Channel Islands*
 Much discussion has occurred about the societal complexity and resource exploitation of the northern Channel Islands. However, the southern Channel Islands have mostly been excluded from this discussion. This presentation will review and synthesize some of the Southern Channel Islands data to draw comparisons and contrasts with the northern Channel Islands in regards to long-term ecological use and human occupation.
[1] *Discussant*

Teeter, Wendy [105] *see* Posadas Vidales, Llylliam I.

Tenorio, Dolores [193] *see* Jaime-Riveron, Olaf

Teoh, Melissa, Sarah McClure (University of Oregon) and Emil Podrug (Museum of Šibenik)
[106] *Figulina on the Dalmatian Coast: Evidence for Trans-Adriatic Exchange*
 Figulina is a distinctive Middle Neolithic fine ware that is found on the Dalmatian coast of Croatia; it is associated with Danilo period villages (5500-5000 cal BC). There are clear differences in technology and materials utilized in the production of ordinary pottery and figulina. This poster presents preliminary petrographic and sourcing analyses of figulina from the Dalmatian sites of Danilo Bitinj, Pokrovnik, Smilicic, and Krivace. In order to determine the raw material source, figulina samples are compared against local daub samples. Production of figulina may provide evidence of trans-Adriatic exchange as it shows clear similarities to central Italian fine ware.

Terlep, Michael
[211] *Cultural Affiliation, Function, and Distribution of Pit and Groove Petroglyphs in the Arizona Strip*
 Rock art research in the United States commonly focuses on style and motif while cultural and environmental functions remain unevaluated. In the Arizona Strip of the American Southwest a particular rock art form known locally as "pit and groove petroglyphs" or "waterglyphs," may represent prehistoric navigational markers to water sources, territorial boundary markers, or ceremonial shrines. Pit and groove petroglyphs are located on horizontal surfaces along cliff edges and measure up to 1.50 m long by 5 cm deep. The author presents research regarding the cultural affiliation, function, and distribution of this unique type of rock art.

Terrasi, Filippo [92] *see* Lubritto, Carmine

Terry, Richard (Brigham Young University), Chris Balzotti (Brigham Young University), Jeff Findlay (Brigham Young University) and David Wright (Brigham Young University)
[225] *The Maize Agriculture Potential of Landforms at the ancient Maya sites of Ceibal and Aguatemala, Guatemala*
 Stable carbon isotope data and remote sensing data from Landsat and AIRSAR were used to create non-parametric multiplicative regression (NPMR) models of

maize agricultural potential for these important Classic Maya sites. The model is based on data derived from digital elevation models (DEM) and Landsat imagery when compared to the delta 13-C signatures of more than 150 soil profiles collected in and around these sites.

Terry, Richard [225] *see* Bair, Daniel A. **[119]** *see* Coronel, Eric G

Testard, Juliette (Paris 1 / UMR 8096 Archéologie des Amériques)

[98] *Personificadoras de Xochitecatl : las figurillas femeninas de la Pirámide de las Flores*
 Las investigaciones del Proyecto Xochitecatl INAH-UNAM han subrayado que el sitio está profundamente relacionado con cultos a la fertilidad en los cuales la imagen femenina es vectora. En las escaleras de la Pirámide de las Flores, entre 600 y 750 se depositaron 7 ofrendas compuestas por numerosas figurillas femeninas. Estas concentran en sí a través de un complejo juego de glifos, colores, atuendos, expresiones y posturas, conceptos fundamentales. Encarnaciones del poder político-religioso, aluden de forma repetitiva a la fertilidad ; personificadoras de unas proto Xochiquetzal o Tlazolteotl, constituyen las imágenes de las jóvenes sacrificadas durante las celebraciones a los cerros.

Texier, Jean-Pierre, Guillaume Porraz, Teresa Steele, Richard Klein and John Parkington

[12] *Human MSA exploitation of ostrich eggs at Diepkloof rock shelter*
 Thousands of ostrich egg shell fragments were collected from the 4m deep Diepkloof archaeosequence but no ostrich bone at all. According to the TL dates, Ante-Stillbay, Stillbay, Howiesons Poort and Post-Howiesons Poort complexes ranging from -130ka to -55ka are seen without noticeable gap on the present frontal and sagittal sections exposed in the central part of the site. About 340 engraved ostrich egg shell fragments were collected from a series of contiguous layers dating to about 60ka in the upper half of the HP complex. They appear to securely document a HP tradition of marking eggshell containers.

Thacker, Paul (Wake Forest University)
[133] *Landform Evolution and the Early Upper Paleolithic of Central Portugal*

Several open-air Upper Paleolithic archaeological sites within the Rio Maior drainage in Portugal remain controversial due to uncertain context, unusual lithic assemblage characteristics, and poor absolute dating results. The stratified archaeological deposits at Espadanal, investigated as part of an integrated landform geomorphology project, provide important new data useful for understanding regional geological processes during the Late Pleistocene. Terrace evolution and site formation at Espadanal can be correlated with depositional history at the nearby site of Gato Preto. This regional geoarchaeological approach provides environmental and chronological context for evaluating competing interpretations of the Early Upper Paleolithic archaeological record in central Portugal.
[5] *see* Day, Zachary R.

Thakar, HB (University of California, Santa Barbara)
[88] *If Floors Could Talk: Excavation of clay floors at the*

Tlacuachero shell mound

Recent research at the Tlacuachero shell mound investigated a series of deeply buried constructed clay floors positioned under the mound summit. This work confirmed the presence of as many as three superimposed floors each marked with postholes and other features. We exposed large areas of the two uppermost floors, mapped their features, and sampled their surfaces using random and non-random methods. This paper presents the field and laboratory methods used for the collection of samples from the constructed surfaces as well as the laboratory methods used to study the matrix color and fish bone density. Results of these two analyses reveal interesting and surprisingly similar patterns.

[88] *First Chair*

Theuer, Jason (National Park Service), Gregson Schachner (University of California, Los Angeles) and Wesley Bernardini (University of Redlands)

[134] *Pueblo IV Settlement Patterns in Petrified Forest National Park, AZ.*

The Pueblo IV period (A.D. 1275-1400) village cluster in the Petrified Forest of eastern Arizona is among the least well-known in the Southwest. For a variety of reasons, this cluster has not been the subject of intensive investigations equivalent to those that have occurred recently in nearby areas. Our collaborative mapping and surface collection efforts provide a new understanding of Pueblo IV period settlement patterns and demography in the Petrified Forest. These studies indicate that the Petrified Forest cluster was an independent social entity with distinct, locally-produced material culture and unique patterns of regional interaction.

[134] *First Chair*

Theuer, Jason [134] see Field Murray, Wendi [134] see White, AJ [134] see Wandler, Cole B.

Thibodeau, Alyson (University of Arizona), John Chesley (The University of Arizona) and Joaquin Ruiz (The University of Arizona)

[135] *Determining the source of turquoise at Pueblo Bonito, Chaco Canyon, New Mexico*

The geologic source (or sources) of turquoise found in the Great Houses of Chaco Canyon, New Mexico has been the subject of speculation for over a century. For the first time, high precision lead and strontium isotopic analyses have been applied to over 25 raw, partially worked, and finished turquoise objects recovered from the canyon's largest Great House, Pueblo Bonito. The data from these turquoise artifacts are compared to the lead and strontium isotopic signatures of 18 major areas of turquoise mineralization in New Mexico, Colorado, Arizona, California, and Nevada and the sources represented by these objects are revealed.

Thibodeau, Alyson [136] see Hedquist, Saul L.

Thies, Meagan (University of Iowa) and Joe Artz (University of Iowa Office of the State Archaeologist)

[234] *GIS, Taphonomy, and the Mortuary Rockshelter of Bolores, Torres Vedras, Portugal*

The Neolithic-Early Bronze Age mortuary rockshelter of Bolores continues to raise many questions for the interdisciplinary team of project archaeologists,

osteologists, and geologists. With GIS, artifacts, bones, stratigraphic levels, and rock fall have been recorded to determine how many people were buried at the site, how they were spatially distributed, and what kinds of burial practices were carried out. This poster employs GIS to address the taphonomic processes responsible for the high level of fragmentation of the bones.

Thomas, Ben (Archaeological Institute of America) and Meredith Anderson (Archaeological Institute of America)

[259] *Sustainable Site Preservation: Beyond Bricks and Mortar*

The future of archaeological sites goes beyond traditional conservation methods. The sustainability of preservation ultimately lies in a local community dedicated to the upkeep of a site. To this end, the Archaeological Institute of America redirected its Site Preservation Program to focus on outreach, education, and economic development with the belief that this approach would make a greater impact than funding expensive conservation work at only a few sites. Nearly two years later, this approach is reflected upon through data, case studies, and research. Ideas on simple methods to reach out to communities surrounding archaeological sites will also be presented.

Thomas, David (American Museum of Nat History)

[94] *Alta Toquima: Why Do People Choose to Live at 11,000 Feet?*

Only three significant alpine residential sites are known in North America, all of them inhabited by Numic speakers: Alta Toquima (central Nevada), White Mountains (southeastern California) and High Rise Village (Wind River Range, Wyoming). This paper presents the most recent evidence from Alta Toquima, exploring the question of why entire families elected to live in this remote alpine village over the past two millennia.

[57] *Discussant*

Thomas, David [230] see Thomas, Lorann Pendleton

Thomas, Jonathan (University of Iowa)

[122] *The Anthropologist as Writer*

Archaeologists are immersed in technical writing, grant writing, scholarly writing, and increasingly, public writing that must be both accurate and compelling. This paper discusses anthropological texts that provide creative but historically accurate narratives of the human past. It examines the epistemological validity of these 'alternative narratives' within the discipline and without, and the role of creative non-fiction in conveying historical and scientific knowledge of past and present human cultures. It concludes with a brief example, an essay about Franz Boas intended to illustrate the influence of his personal experience on the evolution of the concept of race in the US.

[61] *see Kendall, Bryan S. [22] see McCall, Grant S.*

Thomas, Lorann (American Museum Nat History) and David Thomas (American Museum of Natural History)

[230] *Grass Valley Billy: An Appreciation*

Leadership comes in many guises and this paper explores the unique leadership style of C. William Clewlow. We applaud his many contributions to the

archaeology of western North America and celebrate his individuality.

Thomas, Noah (Olivas Adobe Interpretive Center)

[154] *Making Archaeology Relevant for a Diverse Public: Exhibit Planning and Display at the Small Adobe Interpretive Center, Olivas Adobe, Ventura, California*
The Olivas Adobe State Monument, in Ventura, California, is a Rancho period two-story adobe built in the 1840s. Two archaeological excavations have taken place on the grounds, but despite this history of work, archaeological information is not well integrated within its interpretive scheme. With the completion of a seismic retrofit in 2010, the Small Adobe Interpretive Center was established to provide a venue for an interactive historical display. This paper documents the attempt at reintegrating the Olivas Adobe's archaeologically documented heritage within a display environment, linking archaeological data to visual, historical, and tactile displays aimed at engaging a diverse public.

Thomas, Scott [120] *see O'Grady, Patrick*

Thomas-Barnett, Lisa [105] *see Whistler, Emily L.*

Thompson, Abe [192] *see Todd, Lawrence C.*

Thompson, Amy (University of New Mexico), Keith Prufer (University of New Mexico) and Douglas Kennett (University of Oregon)

[9] *Political Dynamics Reflected in Settlement Patterns and Household Archaeology at Uxbenká, Belize.*
This paper examines variability within settlement groups and individual households at the Early to Late Classic Period (A.D 250-900) Maya polity of Uxbenká. Based on the AMS radiocarbon analysis and spatial distribution of artifacts from targeted excavations, specific building functions, duration of occupation, and temporal patterning across settlement groups are discussed. Settlement research at Uxbenká suggests periods of rapid growth punctuating what otherwise appear to be long stretches of relative equilibrium. These periods of growth likely correspond with regional demographic shifts and increasing visibility of highly networked elites.

Thompson, Jennifer [235] *see Anderson, Cheryl [237]*
see Crandall, John J.

Thompson, Kerry (Northern Arizona University)

[99] *The Navajo Built Environment and 19th Century Federal Indian Policy*
As a nexus of both ceremonial and secular activity the hogan comprises an important representation of Navajo worldview and landscape. Archaeologically, the hogan is often also the most durable, and thus the most visible, Navajo structure. I analyze Navajo architecture from late 19th century and early 20th century Navajo hogan sites in order to elucidate information about continuity and change in the Navajo built environment. Additionally, I use dendrochronological, ceramic, and site history data with broader historical narratives in order to identify those federal Indian policies that may have had the greatest impact on Navajo hogan households.
[130] *Discussant*

Thompson, Kim (University of Cincinnati Biological

Sciences), David Lentz (University of Cincinnati) and Theresa Culley (University of Cincinnati)

[119] *Ancient practices and diverse habitats: Impact on genetic structure of Manilkara zapota*
Manilkara zapota (L.) van Royen is a neotropical tree that has been a resource for ancient and contemporary Maya. We quantified levels of genetic variation in M. zapota from the Petén region of Guatemala, and described how that genetic variation is structured among sub-populations from diverse habitat types and histories. The hypothesis was that cultivation of M. zapota trees by the ancient Maya led to overall reduced levels of genetic diversity. Our results suggest instead that M. zapota sub-populations have high levels of diversity with low levels of genetic structuring among various habitats.

[119] *First Chair*

Thompson, Kim [119] *see Lentz, David L.*

Thompson, M (Arizona State University)

[143] *A Preliminary Database of Hohokam Mortuary Practices in the Salt River Valley, Phoenix Basin*
The large number of mortuary features identified in extensive excavations across the Phoenix Basin presents a unique opportunity and challenge for the creation of a regional data set. This paper presents a preliminary effort to construct a database of mortuary programs practiced at large Hohokam villages in the Salt River valley. It discusses the variables necessary to describe both Pre-Classic and Classic period mortuary remains documented at different settlements along separate canal systems. The data suggest complex patterns in body treatments, handling of remains, and spatial relationships of mortuary remains and architectural features.

[143] *First Chair*

Thompson, Robert (University of Minnesota)

[15] *Food Residues and Inca Lifeways at Palmitopamba, Ecuador*
The site of Palmitopamba, located Northwest of Quito in Pinchincha Province, Ecuador contains a long record of Yumbo occupation, followed by an Inca presence late in prehistory. Unlike the Inca conquest sites nearer the core of the empire, the Inca at Palmitopamba seemed to have adopted the Yumbo lifeways. Food residues from Inca pottery vessels recovered from Palmitopamba yielded phytolith assemblages sufficient to trace the lineages of maize present. Inca vessels contained maize similar to that grown by the Yumbo. This is consistent with a view of the Inca as being at the edge of their expansion, having a limited impact on previously established local lifeways.

Thompson, Victor (The Ohio State University)

[198] *Conduits of Complexity: Creating, Commemorating, and Materializing Surplus in Hunter-Gatherer Economies*
Recent discussions of hunter-gatherer complexity rely on aggrandizer arguments to explain among other things social inequality, monumentality, etc. Implicit in these models is the control and production of surplus by agents. While informative for some areas, such models provide little in the way of how traditions of surplus production are sustained over extended time frames or why the general populace might engage in such

activities. Here I examine surplus production from the perspective of hunter-gatherers who occupy highly productive environments. I argue that for surplus production to become a sustained tradition it must be commemorated and materialized in some form.

Thoms, Alston (Texas A&M University), Andrew R. Laurence (Texas A&M University), Masahiro Kamiya (Texas A&M University) and Vaughn M. Bryant, Jr (Texas A&M University)

[35] *Experimentally Tracking Geophyte Microfossils from Raw to Baked-Residue Status*

Conventional-oven baking experiments with underground storage organs (USOs) of false garlic, camas, onions, winecup, and rain lily from Texas assessed the potential of earth ovens to yield microfossils from wild geophytes baked therein. Identifiable starch grains, phytoliths, calcium oxalate crystals, and plant-food fibers were exuded from USOs during the baking process, primarily via water vapor, accumulated on the inside of cooking containers and leafy packing material, and survived prolonged baking (8-36 hrs). Accordingly, it is scientifically reasonable, provided adequate preservation conditions, to expect to find microfossil evidence of plant-foods within remains of ancient earth ovens wherein those foods were cooked.

[1] *Discussant*

Thoms, Alston [35] *see Laurence, Andrew R.*

Thornton, Christopher (George Mason University)

[13] *Indus-Mesopotamian Relations: The View from Southeastern Arabia*

Third millennium relations between Mesopotamia and the Indus Valley have been explored by scholars for almost a century. While the relationships between these two civilizations were once modeled as two "cores" interacting over a cultural wasteland, this was challenged by excavations in Southeastern Iran and later Southeastern Arabia. This research demonstrated how independent cultural groups served as "middlemen" in the relations between the two civilizations. Continued work in this frontier zone, particular on the Jiroft and Umm-an-Nar Cultures, has changed the picture once again. This paper presents a new model for economic and political interaction across this region.

[167] *see Massey, David*

Throgmorton, Kellam (University of Colorado, Boulder)

[43] *Practice Theory and the Study of Ground Stone*

Although subsistence and economy traditionally receive priority in ground stone studies, more nuanced interpretation is possible by recognizing that manos and metates represent a considerable labor investment. Applying practice theory to the study of ground stone allows archaeologists to better assess the relationships among critical subsistence tools and daily social experiences. Ethnographic evidence suggests that grinding tools are primarily the purview of women. This novel approach to an oft-overlooked artifact class will explore the ways in which ground stone can be used to understand gendered practices in the prehistoric American Southwest.

Throgmorton, Kellam [134] *see Schachner, Gregson*

Thurston, Tina (SUNY Buffalo)

[198] *Surplus from below: self organization of production in early historic Northern Europe*

Surplus production in many regions is traditionally linked to elite power, so that virtually any sign of increase is automatically attributed to elite organization or domination. This may or may not be the case elsewhere, but in Northern Europe, relationships between subjecthood and rulership -- ordinary people and leaders -- were not absolute. Social distances could be traversed through skill or luck. While rulers taxed and conscripted, farmers concealed, evaded taxes, and rebelled. Episodes of increased surplus production often appear linked to farmer agency rather than royal demands.

Tiballi, Anne (Binghamton University)

[49] *Expressions of Ethnic Identity Within an Inka State Institution: The Acllas of Pachacamac*

The Inka employed large-scale, state-mandated migration of subject groups to redistribute labor sources, quell uprisings, and populate institutions. One of these institutions was the Aclla, a highly specialized class of female artisans who produced textiles for the state. The majority of our knowledge of this group comes from colonial documents, which suggest that the Acllas' ties with their natal communities were ruptured upon their induction into the state apparatus. Archaeological materials from the Cemetery of the Sacrificed Women, Pachacamac, Peru, suggest that these ties, expressed in textiles, were maintained throughout the Acllas' lives, and continued after their death.

[49] *First Chair*

Tibbitts, Tawny (University of Texas at San Antonio)

[32] *Ground Stone Tools at San Estevan, Belize: A Petrographic and Distributional Analysis.*

This research explores the production and exchange of ground stone tools at the prehispanic Maya site of San Estevan, Belize. Petrographic and distributional analyses were used to examine the role played by households in these activities. It would appear that certain groups had greater access to non-local stone resources than others. This variation correlated with differences in household organizational strategies. The study also emphasizes the importance of using interdisciplinary approaches in materials analysis.

Tien, Joseph H. [72] *see Devault, Alison M.*

Tiesler, Vera (Universidad Autónoma de Yucatán), Arturo Romano-Pacheco (INAH) and Jorge Gómez-Valdés (INAH)

[237] *Re-evaluating the human remains of Ossuary 1 from El Zapotal, Veracruz*

Our work re-evaluates the human remains recovered in 1971 from a large ritual ossuary at the Late Classic Period site of El Zapotal in southern Veracruz. This context has been previously interpreted as a ritual deposit of women who died during parturition and whose bodies were dedicated to the Tlatzolteotl goddess. Here we provide new insights on the sex and age profile of the mostly female cohort, on the distribution of artificial head shapes. From a contextual and iconographic perspective, new insights are provided on the individuals potential human sacrifice and posthumous body treatments by

flaying.

[156] *Discussant*

Tiesler, Vera [56] *see* *Cucina, Andrea [116]* *see* *Sierra Sosa, Thelma*

Tiley, Shelly [83] *see* *Shapiro, Lisa A.*

Till, Jonathan (Abajo Archaeology) and Winston Hurst (Independent Contractor)

[46] *Geography, Society, and Cosmology in the Puebloan Northwest: Monumental Features on Cedar Mesa, Utah*

Systems of monumental features (including great houses, great kivas, shrines, and roads) are now apparent for the Northern San Juan region. This presentation calls attention to the "Et Al network" on Cedar Mesa, the westernmost known "system" of monumental features during the Pueblo II-III period. We examine the components of this network, including both natural and cultural features, and use the network as a point of departure to discuss other "great features" on Cedar Mesa. These features have a high potential to contribute to our understanding of social structure, identity, and deep history of the Northern San Juan region.

Timm, Mary Beth (University of Nevada, Las Vegas) and Debra Martin (University of Nevada, Las Vegas)

[171] *Arms of Sailors: Evidence of Fishing Behavior from a Bronze Age Tomb on the Arabian Peninsula*

The Bronze Age on the Arabian Peninsula (c.2200-2000 BC), referred to as the Umm an-Nar period, is not as well understood as other regions. Faunal and archaeological analyses suggest a coordinated work force produced a mixed economy of fish, cultigens, and domesticated sheep and goats. This study examined enthesopathies (musculo-skeletal stress markers) of the proximal ulnae on human skeletal remains from Tell Abraq, UAE. These markers indicated fishing net usage through evidence of extension, flexion, and supination of the lower arm. Males exhibited a higher prevalence and more pronounced muscle markings consistent with more frequent fishing activities.

Tito, Raul [206] *see* *Belknap, Samuel L.*

Todd, Brenda (University of Colorado, Boulder)

[117] *Chaco, Chimney Rock, and the Local Community*

Chimney Rock Great House was uniquely Chacoan. Survey and limited testing data has demonstrated that the Pueblo I and Pueblo III populations surrounding the stone pinnacles was nearly nonexistent, while the Pueblo II population coincident with the great house was large and concentrated almost exclusively within 1.5 km of Chimney Rock. The lived experiences of the inhabitants of the great house and the community were closely tied to the cycles of the moon and to the political center at Chaco. The implications of Chacoan influence and decline at Chimney Rock are explored here.

Todd, Lawrence (GRSLE), Burnett Paul (SWCA) and Abe Thompson (Colorado State University)

[192] *Venus in Flames: Archaeology on a burned landscape in Northwest Wyoming*

In 2006 the Little Venus Fire in NW Wyoming burned

through about 1400 ha. Large portions of this burn area had been previously surveyed and archaeological material recorded using non-collection, in-field documentation. The fire provided a natural experiment for multi-scale investigation of archaeological fire impacts. Since 2006, studies of artifact damage, changes in site characteristics, thermal alteration of sediments, and evaluation of management protocols have been undertaken. Given the potential for large-scale fires becoming more common and extensive, archaeological research designs that plan for fire-based research should be developed instead of reacting to fires on a case-by-case basis.

Todd, Lawrence [3] *see* *Loewen, Natalia*

Toll, H. (Museum of New Mexico OAS) and Nancy Akins (Museum of New Mexico Office of Archaeological Studies)

[237] *Violence against People, Bodies, or Bones: Lessons from La Plata New Mexico*

Situated between Chaco Canyon and the Mesa Verde, the Totah region has an equally long and complex history. Human remains were recovered from excavations at 17 sites in the La Plata Valley dating from Basketmaker through Pueblo III. Trauma to skeletal remains ranges from violence survived by women, to perimortem violence, to disturbance of the dead, to random pieces of burned and broken bone. This presentation will provide a close look at the contexts of these situations, with an emphasis on chronology and relationships to surrounding regions.

Toll, H. Wolcott [37] *see* *Blinman, Eric*

Tomasic, John and Steven Bozarth (University of Kansas)

[75] *New Data from a Preclassic Maya Tomb Burial at K'o, Peten, Guatemala*

In this paper, we report on the discovery, analysis, and interpretation of a Preclassic Maya tomb burial at K'o, Guatemala. Recently obtained radiocarbon dates suggest the burial dates to the 4th Century BC, making it one of the oldest burials of its kind in the Maya Lowlands. Furthermore, the early dating of the burial indicates that one of the tomb's vessels bears the earliest known representation of the Jester God headress in the Maya Lowlands. In addition, phytolith analysis has shed light upon previously unknown aspects of the burial assemblage and mortuary ritual associated with this elite burial.

Tomasto C., Elsa [71] *see* *Peters, Ann H.*

Tonoike, Yukiko (Yale University)

[63] *Portable XRF Analysis of Sources and Distribution of Obsidian in Iran and Syria*

Using a portable XRF (Bruker Tracer III-V), obsidian artifacts from various sites in Iran and Syria were analyzed to better understand the pattern of access to obsidian sources. Based on a pilot project carried out in the spring of 2010, samples were chosen from collections at the Department of Anthropology, Yale University with a focus on pursuing the question of difference in preferences of obsidian sources through both time and space. This project is also part of a larger

project in cooperation with McMaster University, which aims at comparing data across different laboratories and different analytical methods (EDXRF).

Topic, John (Trent University)

[125] *The Arcones at Chan Chan: Contexts and Contents*

The arcones at Chan Chan are the type of administrative architecture associated with the barrios, retainer areas and caravansaries. They are related to the audiencias, or bureaucratic architecture, of the elite areas of the site. I will discuss the contents and the location of the arcones in an effort to document the lower levels (mandones or foremen) of the bureaucracy.

[15] *see Topic, Theresa*

Topic, Theresa (Brescia University College) and John Topic (Trent University)

[15] *The Inca Diffusion of the Catequil Cult to Ecuador*

As part of their strategy for imperial expansion and administration, the Inca are known to have introduced religious cults into newly acquired territory. There are several lines of toponymic and ethnohistoric information that relate to the transplanting of the cult of the oracle-god Catequil from Huamachuco into northern Ecuador. This data is reviewed as are the changes in Catequil's cult and in his perceived areas of power and efficacy. The rationale for the spread of a regional (i.e., not Inca) huaca as part of Inca strategy is considered.

Topping, Peter (English Heritage)

[96] *The Ritualisation of European Prehistoric Extraction Sites.*

This paper will review the role of Neolithic, Chalcolithic and Early Bronze Age extraction sites and their place in the cultural landscape. Regional trends amongst the quarries and mines exploiting flint, chert, quartz, jasper, quartzite and hornstone will be examined. The various forms of extraction will be considered alongside the presence / absence of artefact assemblages, burials, animal remains, the use-life of artefacts and trade networks. The collected data will be used to sketch the social context of certain extraction sites as a ritualised locus and their particular role in creating identities through the medium of stone.

Torbert, H. Allen [162] *see Baxter, Carey L.*

Torrence, Robin (Australian Museum)

[97] *(Re-) Creating Value: Obsidian Stemmed Tools in Papua New Guinea*

Large, shiny, created by complex reduction sequences, and highly retouched into distinctive shapes, were obsidian stemmed tools from Papua New Guinea prehistoric social valuables? Their widespread distribution across 2200 kilometers, suggests they helped create social networks among high status individuals. Their prehistoric value is re-created through characterization and technological studies of end products, rejects from production, and debitage. The interweaving of data from different approaches illuminates the complex paths through which stemmed tools accrued value and gave status to their owners.

[45] *Discussant*

Torres-Rouff, Christina (Universidad Católica del

Norte & Colorado College), William Pestle (Lake Forest College) and Blair M. Daverman (Purdue University)

[152] *An Attempt at Re-Contextualizing Bodies and Lives: The 'A Cemetery' at Kish*

The city of Kish, in modern Iraq, became the most influential city-state in Mesopotamia during the early 3rd millennium BC. Over the course of a decade, the Joint Oxford-Field Museum Expedition to Kish recovered skeletal remains from nearly 700 individuals. We focus here on 63 individuals excavated from the so-called 'A Cemetery,' who likely lived through a dramatic shift in the power of their city. We use these individuals' remains as well as fieldnotes and artifactual evidence to situate them within their biological and mortuary contexts and explore elements of living, dying, and being commemorated at Kish.

[217] *Discussant*

Torres-Rouff, Christina [233] *see Hubbe, Mark*

Torvinen, Andrea (Arizona State University) and Christopher T. Fisher (Colorado State University)

[58] *The Organization and Accessibility of Social Spaces at Sacapu Angamucu, Michoacán*

Differential construction and organization of open spaces within urban sites is assumed to imply social hierarchy through accessibility. Large, easily accessible and highly visible spaces are interpreted as public, while smaller, restricted and less visible spaces are interpreted as private. Spatial analysis of site layout is undertaken to determine the distribution and characteristics of public vs. private spaces in Sacapu Angamucu in the Lake Pátzcuaro Basin, Michoacán, Mexico. Of particular interest is whether spaces with similar accessibility are located within similar zones of the site and how Sacapu Angamucu's layout compares to contemporary sites in western Mexico.

Towner, Ronald (Tree-ring Lab, University of Arizona)

[99] *Tree-rings and Early Navajo Social Organization in Dinéah*

Tree-ring data provide chronometric, environmental, and behavioral information on past human occupations. The Early Navajo of Dinéah used wood in a variety of structures and exploited the pinyon-juniper forest for many of their needs. This paper examines the spatio-temporal distribution of tree-ring dated Navajo sites from five intensively sampled areas to illuminate aspects of Early Navajo social organization prior to the advent of a pastoral economy. The results suggest that Dinéah Navajos may have developed temporary supra-family groups prior to their use in sheep herding and other animal husbandry activities.

[25] *Discussant*

Toya, Christopher [196] *see Randall, Lindsay*

Toyne, Jennifer Marla (The University of Western Ontario)

[156] *Life before death: Human sacrifice, paleopathology, and cultural identity from Templo de la Piedra Sagrada, Túcume, Peru*

Group or individual identity in archaeological burial contexts is frequently established based on associated material culture and mortuary treatment (i.e. grave

accessories, body position). In the case of human sacrifice, often the remains are not treated the same as 'natural' deaths in the community, thus not accorded 'typical' burial treatment. As such, the identity of the victims, whether local or foreign, is difficult, to determine archaeologically. This paper will detail antemortem skeletal pathology of the Templo de la Piedra Sagrada sacrificial victims from northern Peru. These data allow us to reject hypotheses concerning the possible origins of these victims.

[156] *Second Chair*

Tozer, Tristan (California Office of Historic Preservation) [112] *Discussant*

Trachman, Rissa (Elon University), Kirby Farah (UC-Riverside) and Thomas Ewing (UT-Austin)

[148] *Water to Power: Tracing Notions of Management from an Ancient Water System in Northwestern Belize*
A series of water features recently discovered in the hinterlands of Dos Hombres, Belize provide a distinctive opportunity to explore the construction of power and community organization in this locale. The morphology and proximity of these features suggests the formulation of an ancient water system which crosscut several household boundaries. Management of these features infers the formulation of power relationships among and between households communally. This paper will address the set of water features, evidence towards and possible modeling of the communal management of them, and articulate these interpretations to the larger scope of community organization.

[148] *First Chair*

Trampier, Joshua [258] *see Silverstein, Jay E.*

Trask, Garrett (Arizona State University) and Matthew Peeples (Arizona State University)

[36] *Ceramic Design and Changing Scales of Social Interaction across the Cibola Region: A.D. 1150-1325*
In the Cibola region of Arizona and New Mexico, designs on the exteriors of large serving bowls have frequently been cited as good examples of the active expression of social identities through material culture. During the late 13th and early 14th centuries, a period marked by increasing aggregation, these iconic exterior designs became both more common and bolder in execution. In this poster, we compare regional patterns of similarity in bowl exterior designs from 39 settlements across the Cibola region. These data suggest that the scales at which stylistic conventions were shared changed dramatically during the late 13th century.

Trask, Willa (Texas A&M University) and Lori Wright (Texas A&M University)

[56] *Strontium isotopic variability and local identity: Preliminary investigations utilizing the ancient Maya site of Uxbenká, Belize.*

The past decade has seen the advancement of both the methods and application of strontium isotopes to answer questions regarding regional migration and local identity throughout the Ancient Maya world. To date, strontium isotope patterning in southern Belize has remained largely undefined. This preliminary study aims to define $^{87}\text{Sr}/^{86}\text{Sr}$ variability in the area surrounding the site of Uxbenká. Tooth enamel strontium isotope ratios from

individuals excavated from both site core and settlement contexts are compared to modern faunal samples from the region, thus establishing a local "Uxbenká" signature and the means to identify the remains of immigrant individuals.

Trein, Debora (University of Texas at Austin)

[9] *Research on Monumental Architecture at the Site of La Milpa, Belize*

This paper provides preliminary results of the 2010 excavations of Structure 3, a large monumental structure at the site of La Milpa, northwest Belize. This report is presented in the context of a multi-year research design that aims to investigate the role of monumental architecture at La Milpa as part of a society-wide meaning-investiture process. The evidence gathered in the 2010 field season suggests that a comprehensive analysis of artifact assemblages recovered in monumental spaces may infer on the heterogeneity of use and access of monumental architecture that goes beyond elite-based explanations of ancient Maya monumentality.

Tremain, Cara (Trent University)

[9] *Utilization of Looters' Trenches at Structures D4 and D9, Ka'Kabish, Northern Belize*

Having once been described as the most looted ancient Maya site in Belize, Ka'Kabish may be thought of as a site with data that is anything but forthcoming. Yet results of the 2010 field season, where investigation included clearing, excavating, and mapping looters' trenches in the large pyramidal structures of D4 and D9, illustrate that Ka'Kabish has worthwhile information for archaeologists and can contribute toward an improved understanding of monumental architecture in northern Belize. This paper will discuss these results and emphasize the paradox between the damage caused by looting and the information to be gained by utilizing these trenches.

Tremayne, Andrew (University of California Davis) and Jeff Rasic (Gates of the Arctic National Park and Preserve)

[7] *Lithic Debitage, Meaning and Technological Organization of the Denbigh Flint Complex: An Example from Matcharak Lake, Arctic Alaska*

This poster presents the results of a debitage analysis from a 4000 year-old Denbigh Flint Complex site located at Matcharak Lake site AMR-186 in Alaska's Brooks Range. The primary focus of the research is to systematically identify flake types and raw materials to track activities related to stone tool production and maintenance at the site. Secondly, we use statistical analytical techniques and specific flake attributes to demonstrate typological differences between Denbigh debitage assemblages from other arctic traditions.

Trever, Lisa (Harvard University) and Jorge Gamboa Velasquez

[125] *Articulating the Moche Presence at Pañamarca through Architecture and Painting*

Despite recent advances and discoveries in Moche archaeology, the monumental center of Pañamarca had been all but ignored since early studies in the mid-twentieth century. In 2010 the authors led the first scientific excavations at Pañamarca in over fifty years

with the objective to study religious architecture, mural painting, and associated material culture within the Plaza Principal, Plataforma II, and the newly discovered Recinto de los Pilares Pintados. This paper presents new field data as they aid us in defining the nature of the Moche presence at Pañamarca and how that presence was articulated through architecture and mural painting.

Triadan, Daniela (University of Arizona) and Takeshi Inomata (University of Arizona)

[225] *Ceibal during the Terminal Classic*

During the Terminal Classic, Ceibal had one of the most substantial occupations in the Rio Pasión region. It became again an independent political entity and possibly a new dynasty established itself. Excavations in the East Court of the site revealed that the royal palace was relocated to this location. The East Court is situated on one of the highest areas of the site, and was occupied since the early Middle Preclassic. The new administrative center and palace were probably moved here because of the significance that this area had in the past.

Trigg, Heather (Univ Massachusetts Boston) and Kurt Anschuetz (Rio Grande Foundation)

[53] *A View of La Cienega: At the Intersection of the Iberian, Tewa, and Keres Worlds in Seventeenth-Century New Mexico*

The relationship between colonizers and colonized in 17th-century New Mexico remains poorly understood. Pueblo peoples had developed sustainable relationships with the environment. Spanish colonists introduced new agricultural systems, but they depended on the Pueblos for survival. Recent research suggests that extreme environmental conditions, combined with incessant demands by colonists on the Pueblos for labor and other subsistence needs led to famine and contributed to the Pueblo Rebellion. We explore the relationships of a 17th-century Spanish ranch with two nearby Pueblo villages – one Tewa and one Keres, examining the competing agricultural systems and the colonists' dependence on these Pueblos.

Trimble, Michael [161] see McMahon, Catherine

Tringham, Ruth (Univ of California-Berkeley)

[122] *Creating Narratives of the Past as Recombinant Histories*

In this paper I bring together the ideas of Steve Anderson (Recombinant History), Lev Manovich (Database Narratives) and Kathleen Stewart (Ordinary Affects) with my own experience in creating experimental narratives for archaeology using multiple media forms. It explores the fragmentary and non-linear nature of narratives about the past as a legitimate form of presenting the interpretation of archaeological data and the voices of both modern narrators and sentient prehistoric actors, drawing especially on my current research in the challenging world of pre-literate Europe and Anatolia. An essential aspect of this exploration is archaeologist/author responds to the recent critique of the agency/personhood of actors of the past.

[3] see Ashley, Michael

Tripevich, Nicholas (UC Berkeley) and Daniel Contreras (Stanford)

[267] *Quarrying and production at the Quispisisa*

Obsidian Source

Obsidian procurement at the Quispisisa source in the puna of southern Ayacucho left large quarry pits and associated debris piles but relatively little evidence of production in the immediate vicinity of these pits. Dense deposits of obsidian production debris have been found several hours travel downstream in the upper reaches of a valley that features abundant agricultural terracing. This talk will discuss quarrying and production evidence from Quispisisa in light of regional consumption patterns, geochemistry evidence from surface studies of the source area, and difficulties associated with linking quarrying and reduction activity at a source with particular occupation periods.

Tripevich, Nicholas [267] see Ogburn, Dennis [97] see Contreras, Daniel A.

Trivedi, Mudit (University of Chicago)

[189] *Materiality and Alterity in Medieval Mewat*

This paper presents the planned investigation of the constitutive relations between politics and social alterity in its multiple situations in the context of medieval North India. Specifically, it proposes an archaeological, architectural and paleoenvironmental study of the Indorei valley. This valley, named after the 14th century fort within it, is located in Mewat, the land of the Meos; the 'predatory' and 'rebellious' neighbors of the Delhi Sultanate. By studying this instance of the materialization of the political projects and fates of an elite Meo lineage, the paper broaches issues of materiality, politics and alterity.

Tromp, Monica (Idaho State University) and John Dudgeon (Idaho State University)

[236] *SEM-EDS is an effective tool for population-level analysis of microfossils extracted from prehistoric human dental calculus*

Sedimentary microfossil studies are widely used to infer diet in past populations. While profoundly useful for understanding natural and agricultural ecologies, they do not necessarily correspond with the archaeological event of interest: 'What did people put in their mouth?' We propose that extracting and quantifying microfossils from human dental calculus is a more appropriate method for understanding population-level variation in diet. Using SEM-EDS we have examined microfossils extracted from human teeth of prehistoric Rapanui (Easter Islanders) and argue that this method provides a more efficient and repeatable means of analysis than light microscopy, largely due to ease of morphological identification.

Tromp, Monica [63] see Meredith, Clayton R.

Trudel, Stephanie (Suquamish Tribe), Dennis Lewarch (Suquamish Tribe) and Leonard A. Forsman (Suquamish Tribe)

[178] *Middle and Late Holocene Habitat and Economic System Diversification*

Thompson (1978) documented an increase in the range of site types and diversification of tool kits in Northern Puget Sound sites over the past 6,000 years. Concomitant with economic diversification, sea level rise, alluvial deposition processes, and seismic processes combined to increase the extent and diversity of productive marine littoral and lowland alluvial floodplain

habitats utilized by hunter-fisher-gatherers. Archaeological and geological data obtained from sites throughout Puget Sound since 1978 are reviewed to evaluate and expand upon Thompson's seminal observations. Analyses demonstrate the continued utility of Thompson's model of Middle and Late Holocene economic system diversification.

Tsai, Howard (Museum of Anthropology)

[125] *The Domestic Architecture of Las Varas*

Las Varas, a site in the middle Jequetepeque Valley, is situated 40 km from the Pacific Ocean. This Late Intermediate (AD 1000-1460) site has abundant Coastal Cajamarca-style bowls, as well as domestic pottery similar to that used in highland Cajamarca. Recent excavations exposed a series of residences, ritual plazas, and cemeteries. This talk presents results from my excavation of stone-walled residences constructed on hillside terraces. I will discuss how these residences and neighborhoods can be used to document the presence of diverse cultural practices and possibly diverse ethnic groups in the Jequetepeque Valley.

Tsesmeli, Evangelia (Southern Methodist University)

[135] *Prehistoric Settlement and Continuity in the Middle Rio Puerco Valley*

The Middle Rio Puerco valley forms part of the Rio Puerco watershed, the largest tributary of the Middle Rio Grande basin. Archaeological surveys, excavations and CRM projects provided the corpus of data for this investigation on settlements and continuity of habitation within the valley from the archaic to the end of Pueblo IV periods. A composite view of past habitation patterns in relation to environmental settings emerges defining the cultural landscape at the area. A closer look at the material record provides insights into the social landscape and community organization of the valley residents during the tumultuous Pueblo III-IV periods.

Tsouras, Theodore (National Park Service)

[248] *The Easy Way Down: Documentation of Walnut Canyon National Monument's Ancient Water Trail*

This presentation summarizes recent documentation by NPS archeologists of a massive prehistoric trail that accesses the difficult-to-reach, but lush riparian floor of Walnut Canyon. The trail consists of several broad switchbacks stabilized with large, dry-laid retaining walls – some of which contain stones weighing several tons each. Likely constructed in the 12th century A.D., during the height of Walnut Canyon's prehistoric Sinagua occupation, this trail provided and continues to provide the safest and most efficient access to the resource-rich canyon bottom through the prohibitively steep layer of Coconino Sandstone.

Tsukamoto, Kenichiro (University of Arizona)

[182] *The Social Roles of Plazas during Turbulent Times: The Classic Maya Center of El Palmar, Campeche, Mexico*

Plazas likely played crucial roles in establishing shared identities during the politically tumultuous Middle Classic period (A.D. 400-600) in the Central Maya Lowlands. Due to El Palmar's location at the boundaries of three large contemporaneous political spheres--Tikal, Calakmul, and Rio Bec--I suggest that political upheavals affected El Palmar more acutely than neighboring

centers. By examining excavation data from the previous year's fieldwork, I attempt to show how the construction and contestation of shared identities can be traced in the archaeological record, in particular by analyzing the diversity of spectacles and the process of building and remodeling plazas.

Tucker, Bryan (Georgia Department of Natural Resources), Heath Tucker (University of Georgia) and Matt Luke (Georgia Southern University)

[161] *Archaeology and Augmented Reality: Using AR to Enhance Archaeological Interpretation*

Augmented Reality (AR) is a process which overlays virtual images, sounds, movies, or other data onto the real world. Historically, constraints on the size and cost of the necessary equipment have slowed its uptake in the public sector. However, recent advances in smartphones and tablet computers have removed these impediments. We discuss ways in which AR can be used to enhance the interpretation and presentation of archaeological sites and artifacts. By enhancing interactive displays and superimposing sensory information on the landscape, AR has the power to actively engage visitors, transforming them from passive spectators to active participants in a historic landscape.

Tucker, Chris [146] see Levy, Richard M.

Tucker, Heath [161] see Tucker, Bryan D.

Tuljapurkar, Shripad [261] see Puleston, Cedric

Tung, Tiffany (Vanderbilt University) [156] *Discussant* [217] *Discussant* [233] see Lofaro, Ellen M

Turkon, Paula (Ithaca College) and Michelle Elliott (CNRS Paris)

[25] *Dendrochronology, Chronological Control, and Climate Reconstruction in Northwest Mesoamerica*

Due to the fragility of the modern ecosystem, climate change has been implicated as a key influence in the prehispanic settlement dynamics of Mesoamerica's northwestern frontier zone. Yet, recent paleoenvironmental research, combined with the prehispanic occupant's heavy dependence on agriculture, indicate that past environments were less degraded than environments observed today. Thus, fundamental questions, such as the nature and timing of human settlement, abandonment, and environmental change, remain unresolved. This paper reports on findings of a pilot project to determine the viability of dendrochronology, a methodology previously not used in Mesoamerican archaeology, as a way to address these outstanding questions.

Turner, Andrew (University of California, Riverside)

[98] *The Teotihuacan Tlaloc and the Iconography of Rain in Ancient Central Mexico*

The rain deity Tlaloc is one of the most significant beings in Teotihuacan's pantheon, as numerous artistic representations attest. The Storm God insignia is generally considered to be an abstract representation of Tlaloc used emblematically and as a symbol in writing systems. This study examines symbolism shared by the Teotihuacan Tlaloc and the Storm God insignia ranging from the Formative Period through the Epiclassic in

Central Mexico and it suggests that the insignia did not explicitly represent the deity, but rather elements of the insignia incorporated into Tlaloc's regalia denote specific characteristics of the deity in visual representations.

Turner, Bethany (Georgia State University)

[49] *Locating the accla: Isotope bioarchaeology and the reconstruction of Inka social class*

Scholarly interpretations of the accla class have been strengthened by more nuanced consideration of their multifaceted roles within the Inka state. However, interpreting the accla first requires finding them in archaeological populations in ways that avoid gendered assumptions of material culture and archaeological context. Multi-isotope analysis permits rough estimation of social class via demographic composition and subsistence variation, and when combined with sex ratios, may permit identification of accla independent of material culture. A case study from Machu Picchu is presented here, embedded in a discussion of the limitations and pitfalls of using these techniques in reconstructing Inka classes.

Turner, Sara (Georgia State University)

[154] *All About Archaeology*

In this paper I will discuss the development of archaeology kits for third through fifth grade children. Each kit contains three units that are designed to teach elementary school children the basic features of archaeology. Children will learn about past human culture and behavior through hands-on projects and educational lesson plans. I will detail the process of constructing lesson plans, developing projects, and providing reading books appropriate for the elementary level. In addition, I intend to discuss the content and format of the kits with elementary teachers for comments on how they think children will respond to the material.

Turner, Terence [24] *Discussant*

Tuross, Noreen (Harvard University)

[19] *Fire, Color and Drink: new approaches to residues*

The ranges of time, environment, preservation and, most importantly, questions about residues or molecular information associated with archaeological materials requires some new and varied approaches. What are the best ways of identifying the use of fire in the archaeological record? What is the nature of residues left from fermenting beverages? How can we identify the use of organic pigments? One analytical approach will not fit all. The uses of a broad scanning technique called DART (Direct Analysis in Real Time) are highlighted, and follow on research described.

Tushingham, Shannon (University of California, Davis)

[239] *Historic Trends in the Mass Harvest of Smelt (Osmerids) on the North Coast of California*

Smelt (osmerids) are a small fish that have been mass harvested on the north coast of California for centuries. This paper will present new data relating to smelt fishing from the fine grained analysis of several archaeological sites, will summarize the ethnographic and historic harvest, and will discuss the archaeological correlates of smelt fishing.

Tuwaletsiwa, Judy [122] *see Tuwaletsiwa, Phillip J.*

Tuwaletsiwa, Phillip and Judy Tuwaletsiwa (Artist) [122] *Ways of Seeing*

Archeology is a combination of hard and soft sciences. The hard sciences use rigid protocols to govern their application. The protocols of the soft sciences allow greater latitude for interpretation. What lies outside these parameters are metaphors. Ancient people saw the world metaphorically. We believe the judicial use of dreams, myths and artistic vision can enhance scientific interpretation. We explore this in our novel about the origins and meaning of Chaco Canyon, "The Laughing Spiders."

Tykot, Robert (U. of South Florida)

[97] *New Approaches to Obsidian Studies in the Central-Western Mediterranean*

Over the past fifteen years, analysis of several thousand obsidian source samples and artifacts from the central-western Mediterranean has provided an excellent dataset to address neolithization and initial island settlement, craft specialization, and changes in political and socioeconomic systems from the beginning of the Early Neolithic (ca. 6000 BC) thru the end of the Bronze Age (ca. 800 BC). This has been accomplished thru detailed studies of the geological sources, and the development of low-cost methods of analysis, including portable, non-destructive XRF instruments. Integration with typological and use-wear analysis has provided information on continuity and change in these ancient societies.

[193] *Discussant* [63] *see Ashkanani, Hasan J.* [92] *see McCormick, David R.*

Tyler, Kit (The American Mercury)

[11] *A Goodly Llande*

A visual tour of California's diverse environmental environments.

Tyson, Rose (University of San Diego) and Alana Cordy-Collins (University of San Diego)

[156] *Ritual Bloodletting as Preliminary to Decapitation: A New Interpretation of the Evidence from El Cuarto de los Craneos at Dos Cabezas*

A cache of 15 human heads at the Moche site of Dos Cabezas (Jequetepeque Valley) provides important new perspectives on Moche decapitation practice via functional human anatomy and forensics. Removing a living human head utilizing a tumi (simple copper knife) would have challenged Moche decapitators due to the small and thin knife design, complex neck anatomy, potential for victim movement, and penchant for carotid arteries to spray pumping blood. At Dos Cabezas, evidence suggests the Moche used preliminary exsanguination to produce a predictable volume of blood controlled for collection in a vessel. Thus, systematic decapitation followed only after death.

Ullah, Isaac (Arizona State University, SHESC), C. Michael Barton (Arizona State University), Sean M. Bergin (Arizona State University) and Alexandra E. Miller (Arizona State University)

[36] *Simpler is better: lessons from modeling coupled human and natural systems in the Mediterranean Landscape Dynamics Project*

Over the past six years, the Mediterranean Landscape

Dynamics (MedLanD) Project has developed a modeling laboratory to explore the complex processes that characterize coupled human and natural systems. The laboratory focuses on subsistence-level agropastoralism because such socioeconomic systems dominate most of the Holocene archaeological record and also remain common today. In this paper, we summarize some of the major lessons we learned about the process of doing human-natural systems modeling during the course of the MedLanD Project, including issues of connecting models from different programming environments, sensitivity analysis, scale and resolution, building process equations, and choosing most relevant output data.

Ullah, Isaac [36] *see Bergin, Sean M.*

Ullinger, Jaime (Ohio State University), Susan Sheridan (University of Notre Dame) and Lesley Gregoricka (Ohio State University)
[152] *Group Inclusion in the Early Bronze Age Cemetery at Bab edh-Dhra', Jordan*

Early Bronze Age Bab edh-Dhra', Jordan is unique in that mortuary patterns follow settlement changes. This paper explores who was buried in the cemetery from a paleodemographic perspective and how that relates to settlement transition. Early Bronze IA (EB IA) tombs contain fewer people than charnel houses from EB II-III, but include many neonates and infants. The EB II-III tombs house children, but not many infants. Dental morphological traits show that EB IA inhabitants were buried by family group, and cranial non-metric traits suggest that a similar pattern was followed in EB II-III, despite larger group inclusion in single tombs.

Urban, Thomas [42] *see Smith, Kevin P.*

Urcid, Javier and Arthur Joyce (University of Colorado, Boulder)

[182] *Formative Period Transformations of Monte Albán's Main Plaza and their Political Implications Between 500 B.C. and A.D. 200* the Main Plaza of Monte Albán underwent successive changes. Semasiographic and epigraphic readings of carved megaliths on several buildings around the plaza suggest that during the city's first several centuries communal forms of political authority persisted alongside newer, more exclusionary ones. The scale, symbolism, and accessibility of the plaza indicate that the power of rulers was downplayed in favor of communal institutions. At A.D. 200, however, evidence suggests a major political upheaval as indicated by the dismantling of several monumental buildings and their associated narrative programs. We consider causes and consequences of this upheaval.

Ure, Scott (Brigham Young University)

[187] *Fremont Pottery Standardization: A Preliminary Examination of Fremont Painted Bowls and their Degree of Standardized Morphological Characteristics*

Although the Fremont culture has been studied for decades, very little is currently understood about their social, political, and community organization. One aspect of Fremont material culture which may help determine their degree of social complexity is their painted bowls—both the black-on-gray and black-on-white varieties. This paper explores to what degree Fremont painted bowls

may have been standardized, and whether the degree of standardization is significant enough to draw any conclusions about the Fremont socioeconomic structure.

Uriarte Torres, Alejandro (El Colegio de Michoacán, A.C.) and Christopher T. Fisher (Colorado State University)

[58] *Arquitectura, inversión de trabajo y asentamiento: un acercamiento a la organización espacial en Sacapu Angamucu*

El análisis espacial de la inversión de trabajo evidente en la arquitectura constituye una herramienta metodológica con la que se pueden abordar problemas sobre la estructura urbana y la organización sociopolítica de un asentamiento. Utilizando este enfoque se propone un acercamiento preliminar al estudio de la organización del sitio de Sacapu Angamucu mediante el análisis de la distribución espacial de la inversión de trabajo reflejada en su arquitectura

Urquhart, Gerald [19] *see Raviele, Maria E.*

Urton, Gary (Harvard University)

[24] *The Objectification of Identities, Places and Political Relations in the Inka Khipu*

From Spanish colonial accounts we learn that khipus were instrumental in the performance of Inka state administration. From local cord-keepers to provincial overseers to administrators in the capital, Cusco, the khipu played an active role in constructions of socio-political identities and relations among groups within the Empire. This paper looks at Spanish commentary on cord-keeping, as well as at khipu samples, to address the question: What role did the khipus play in articulating political relations and the objectification of identities in the Empire?

Urunuela, Gabriela (Universidad de las Américas) and Patricia Plunket (Universidad de las Américas, Puebla)

[98] *Costumes and Puppets among Cholula's Early Classic Figurines*

The transition to urbanism implied multiple modifications in prehispanic social behavior; we explore some of these, as reflected in an Early Classic Cholula figurine sample. One major change was that the previous representation of the human body almost or entirely naked was substituted with the portrayal of clothed individuals. Female images became standardized and static, while males increased in number, ornamentation and variation. Among the males, two groups lead us to suggest that some figurines perhaps helped in the transmission of oral tradition via miniature theatrical performances: 1) costumed or masked personages, and 2) a set of horizontally moved puppets.

Vadala, Jeffrey [238] *see Leonard, Daniel*

Vail, Gabrielle (New College of Florida)

[145] *Painted Texts from the Northern Maya Lowlands: The Classic to Postclassic Transition*

This paper explores texts painted on several different media from the northern Maya area to better understand what features distinguish the "Yucatecan" tradition. Analysis of the relevant records from the Maya Hieroglyphic Database focuses on addressing several

key questions: How is the transition from the Late/Terminal Classic to the Postclassic period documented in the hieroglyphic record? Does the subject matter of texts vary substantially across different types of painted media? And can an analysis of stylistic, morphological, and lexical features from the Classic period epigraphic corpus help determine where and when the Postclassic Maya codices were painted?

Valadez Azúa, Raúl [200] *see Evans, Susan Toby*

Valdez, Francisco (IRD / France - Ecuador)

[15] *Evidence of the Inca presence in the Bracamoro country (South Eastern Andes of Ecuador)*

The chronicles of conquest of the Chinchaysuyu describe several episodes of the failed Inca incursions into the Bracamoro country, located on the fringes of the Eastern Andes that progressively descend to the Amazonian lowlands. Recent archaeological work, in the vicinity of Palanda, has documented the probable emplacement of one of the last battles, fought between the invading Inca armies and the Bracamoro, around 1520. We present and discuss several aspects of the Inca incursion in the south eastern ceja territory of Ecuador, including the evidence of roads, fortresses, the local toponymy and the archaeological materials found in the Palanda region

Valdez, Fred (University of Texas At Austin) and Palma Buttlés (SEI, Carnegie Mellon University)

[191] *Social-Political Events of the Terminal Classic at Colha, Northern Belize*

The prehistoric Maya of northern Belize witnessed significant episodes of stability as well as turmoil over the course of their history. A brief review of these episodes is presented with a short commentary for each. The focus of this paper is the "terminal" event of ca. AD 800 as witnessed from Colha, Northern Belize. The violent end of the Classic Period at Colha may signify an attempt at the cultural/political restructuring, or lack thereof, in northern Belize. While Colha remains at the heart of this study, other lowland sites are referenced as a means of developing a broader view of political stresses and changes across the Maya arena.

Valdez, Fred [119] *see Buttlés, Palma J. [34]* *see Hyde, David M.*

Valenzuela, Jasmin [31] *see Szirmay, Jenica*

Vallieres, Claudine (McGill University)

[227] *Of Llamas and Maize: Ingesting Tiwanaku*

The Tiwanaku polity is associated with a novel ceramic complex for the production and consumption of beer made of non-local maize, central in exporting its attractive ideology through feasting events. The type of food served at feasts is assumed inconsequential, yet the dominance of camelid consumption in private and public contexts suggests a preference. Recent research in a non-elite residential neighborhood of the Tiwanaku capital reinserts camelids in the life of the city and polity's residents by focusing on quotidian cuisine, and argues that the daily consumption of this preferred food represents a local way to 'be' Tiwanaku.

Van Der Veen, Marijke (University of Leicester, UK)

[45] *Discussant*

van Dommelen, Peter [228] *see Loney, Helen L.*

Van Dyke, Ruth (Binghamton University)

[122] *Imagined Subjects Speak: Phenomenology and Creative Nonfiction*

Phenomenological approaches create sensory pasts, but such interpretations can be universalizing and solipsistic. To ameliorate these problems, I turn to imagined narratives – creative nonfiction grounded in archaeological information to construct imagined lives in the past. Imagined narratives can be useful tools for analysis, and they can give voice to diverse individuals and subaltern groups. They do not constitute an unethical silencing of "real" voices in the past, I contend, because all archaeological representations are constructed; overtly imagined narratives represent a more transparent authorial hand than do ostensibly subject-less narratives. I illustrate my points with experimental work from the American Southwest.

[153] *Discussant*

Van Galder, Sarah (Statistical Research, Inc.), Seetha Reddy (Statistical Research, Inc.), Justin Lev-Tov (Statistical Research, Inc.) and Richard Ciolek-Torrello (Statistical Research, Inc.)

[151] *A Balanced Diet: Subsistence Practices in the Ballona, Coastal Southern California*

Subsistence strategies of the prehistoric populations occupying the Ballona wetlands in west Los Angeles over the past 8,000 years have been characterized by general continuity with punctuated change. In this talk, we will discuss the major trends and significant changes in subsistence, while comparing our results to the wider context of adaptive strategies in coastal southern California. Specifically we will address maritime versus lacustrine adaptations, resource intensification and ethnogenesis in food consumption. The talk will identify trends across the entire sequence of human occupation in the Ballona, as well as highlight emerging insights into food consumption during the Mission period.

Van Gijn, Annelou (Leiden University)

[59] *Science and imagination: methodological issues when examining the meaning of flint for neolithic societies in the lower Rhine Basin by means of use-wear analysis*

Use-wear studies have long been limited to the level of individual sites. However, 25 years of use-wear and residue analysis of Neolithic and Bronze Age flint assemblages from the Netherlands has created a wealth of empirical data. The more elusive role of flint in conveying aspects of identity and its ritual treatment are two topics that have been examined at the inter-site level. Three problems encountered: sampling strategy, identifying used zones and description of wear traces, will be illustrated briefly and evaluated in terms of possible solutions, addressing methodological issues like standardization and the extent to which 'imagination' is operationalized.

Van Gijsegheem, Hendrik (Université De Montréal), Kevin Vaughn (Purdue University), Verity Whalen (Purdue University), Moises Linares Grados (Universidad Nacional Mayor de San Marcos) and Jorge Olano Canales (Universidad Nacional Federico

Villareal)

[267] *Mining of copper and copper-bearing minerals in ancient Peru: New evidence from the Upper Ica Valley*
A survey of the Upper Ica Valley has revealed indirect and direct evidence for the mining of ancient copper and copper hydroxides, carbonates, and silicates in the Upper Ica Valley of Peru that date from the Formative Period to historic times. It is during the Late Intermediate Period that metal extraction underwent an important increase in scale and intensity: material remains associated with mining sites are more numerous and infrastructures more complex. This reveals a process in which mineral extraction went from small-scale and informal to state-controlled, testifying to the heightened social role of metals in late prehispanic times.

Van Gijsegheem, Hendrik [267] see *Vaughn, Kevin J.*

Van Keuren, Scott (University of Vermont), Mark Agostini (University of Vermont) and Hector Neff (California State University, Long Beach)

[62] *Ceramic Pigments and Communities of Practice in Fourteenth-century Arizona*

The poster reports on a comprehensive analysis of glaze-painted White Mountain Red Ware that employed time of flight-laser ablation-inductively coupled plasma-mass spectrometry (TOF-LA-ICP-MS). This analytical approach measures the chemical composition of pigments, which is used here to infer Ancestral Pueblo painting "recipes." The poster specifically examines the variability of "recipes" used to decorate a striking, iconographic-style pottery type found at early fourteenth-century villages in east-central Arizona. The data are used to evaluate the possibility that these containers were manufactured by groups of potters who held exclusive access to painting technologies or resources.

Van West, Carla (SRI Foundation) and Linda Cordell (School for Advance Research)

[99] *Using Tree-ring Data to Explore Community Origins during the Fourteenth Century in Central New Mexico*
Tijeras Pueblo is a 200-room, fourteenth-century Ancestral Pueblo settlement on the east side of the Sandia Mountains, east of Albuquerque, New Mexico. Ceramic studies and cranial measurements suggest the source areas for the village's population were south and west, with connections to the Cibola area. This paper uses three independent, tree-ring chronologies from west-central (El Malpais) and central (Middle Rio Grande and Chupadero Mesa) New Mexico, and 275 tree-ring cutting dates from Tijeras Pueblo, to evaluate whether climate conditions differentially affecting food production in each area could have prompted population movement to Tijeras Canyon.

Van Zandt, Tineke (Pima Community College)

[137] *The Lower Hill Fort in Regional Context*
Pima Community College and the Bureau of Land Management have conducted a cooperative inventory survey of the Burro Creek/Pine Creek area of west-central Arizona for the last eight years. This poster session summarizes the overall findings and methodology of the survey and includes posters from undergraduate student survey participants who are conducting additional research using data collected during the project. Posters will cover the survey goals

and methodology, use of local lithic materials, typology of projectile points, distribution of ground stone relative to vegetation, prehistoric fortified hilltop sites and the historic use of the area.

Vance, Meghann [134] see *Wandler, Cole B.*

VanDerwarker, Amber (UCSB), Jennifer Alvarado (University of California, Santa Barbara) and Paul Webb (TRC Garrow Associates)

[111] *Analysis and Interpretation of Intrasite Variability in Paleoethnobotanical Remains: A Consideration and Application of Methods at the Ravensford site, North Carolina*

Paleoethnobotanists excel at diachronic analyses of plant data, synchronic comparative analyses of different sites/regions, and (increasingly) the use of robust quantitative techniques. It is still the rare study, however, that examines variability in plant remains from different contexts within a single site; such an approach has the potential to inform issues of site formation, feature function, and the organization of food preparation, processing, storage, and disposal. This paper highlights quantitative techniques for examining intrasite spatial variability through the analysis of plant data deposited on a burnt house floor from the Ravensford site, a multi-component Cherokee occupation in southwestern North Carolina.

[45] *Discussant*

Vandiver, Pamela [5] see *Rosenstein, Dana Drake*

VanEssendelft, Willem

[32] *Deciphering the Tizoc Stone*

The riddle of Nahuatl writing has been deepened recently by the 2008 publication of Alfonso Lacadena's proposed syllabary. I examine his proposal in the context of the Tizoc Stone, which provides a wealth of toponymical data regarding the late pre-Contact Aztec Empire. By performing both epigraphic and iconographic analyses of the place names on the massive stone document, I address the structural issues of an enigmatic script and clarify the toponyms on this iconic artifact. This work provides the foundation for a GIS examination of the Aztec city-states and their complex interactions in the crucial decades before the Spanish contact.

VanEssendelft, Willem [38] see *Davies, Gavin R.*

Vannière, Boris [192] see *Rius, Damien*

VanValkenburgh, Nathaniel (Harvard University) and Carol Rojas Vega

[241] *Urbs and Civitas: Forced Resettlement and the Fashioning of Political Subjectivity in the Zaña and Chamán Valleys, Perú - 16th to 18th Centuries, AD*
Through spatial analysis of archaeological survey data and colonial land registers, we examine how Spanish colonial forced resettlement (reduccion) refashioned "indigenous" political subjectivity on the North Coast of Peru in the late 16th century. By contrasting how settlement patterns are alternately expressed in the distribution of archaeological sites and documentary accounts, we demonstrate how ideal, administrative models of resettlement were refracted by prior modes of political affiliation, as well as conflicts and compromises

during the resettlement process itself.

Vardi, Jacob, Nathan Goodale (Hamilton College Science Center Clinton, NY) and William Andrefsky (Washington State University)

[59] *Should we standardize lithic use-wear analysis?*

Although lithic use-wear analysis has been practiced by archaeologists on a regular basis since the 1970's, there has been much debate about its effectiveness to determine past aboriginal practices and actions.

Standardization of protocol, imaging, experimentation, quantification and other aspects of use-wear methods and techniques may contribute to a better understanding of the archaeological record. Alternatively, standardization may decrease technological diversity of the field which is so important for developing new ways of understanding lithic use-wear data. In this paper we address recent developments of new techniques and their historical basis to discuss the future for productive use-wear study.

Vardi, Jacob [22] see Rosen, Steven A.

Varela-Torrecilla, Carmen (Associate research CNRS-Teacher LA SALLE Campus)

[85] *One Question, Many Answers: History And Results Of An Archaeometric Research Of Puuc Ceramics*

The ceramics associated with the north Yucatan Puuc Phenomena (600-1000 A.C.) represented an important technological and stylistical ceramic production change in comparison with the Early classic pottery production at the Maya Lowlands. The aim of this paper is to present the results obtained with an archaeometric program research about Puuc ceramics started in 1997.

Vargas Sánchez, Patricia [103] see Damp, Jonathan E.

Varien, Mark (Crow Canyon Archaeological Center), Paul Ermigiotti (Crow Canyon Archaeological Center), Scott Ortman (Crow Canyon Archaeological Center-Santa Fe Institute) and Timothy Kohler (Washington State University)

[99] *Estimating Maize Farming Productivity in the Mesa Verde Region: Computer Models and Experimental Gardens*

Tree-ring research has been used to estimate the productivity of Pueblo maize farming in the central Mesa Verde region of southwestern Colorado, and Jeff Dean has been integral to that effort. This paper summarizes that research and focuses on recent work by the Village Ecodynamics Project (VEP). VEP research includes a combination of computer modeling and the Pueblo Farming Project (PFP). The PFP involves modern Pueblo farmers using traditional agricultural practices to plant experimental gardens. Together the computer modeling and PFP gardens provide refined estimates of ancestral Pueblo maize yields and how annual variation in climate affects these yields.

Varney, R. (PaleoResearch Institute), Linda Scott Cummings (Paleoresearch Institute, INC.) and Thomas Lux (Paleoresearch Institute, INC.)

[66] *Regional Climate Modeling: Breathing Life into PaleoEnvironments*

Understanding the paleoenvironment and climate change is a critical first step to interpreting prehistoric cultures.

Cultures change through time, with people often traveling across the landscape. Hardships suffered as a result of climate change often affect many cultures over wide areas. How cold were the winters 10,000 or 5,000 years ago? Do we care? How fast did the weather change? And when was that? Where was the jet stream? Mapping modeled climate change (every 100 years) on a GIS map of Colorado shows the potential of regional macrophysical climate modeling to address questions of paleoenvironment and culture change.

Varoutsikos, Bastien (Harvard Univ.) and Christine Chataigner (CNRS, France)

[114] *Obsidatabase Project : Collecting and organizing data on Prehistoric Caucasian and Near Eastern obsidian*

Over the last 50 years, there has been considerable analysis of obsidian from the caucasus and near east, which is used in the reconstruction of exchanges. This accumulating body of information calls for a database to present it in a coherent ensemble. The Obsidatabase Project provides scholars with such a resource for Prehistoric Caucasian and Near Eastern obsidian. Archaeological and geological information are accessible through an intelligent browser that can create .xls and DBF IV lists directly exploitable in GIS. The database facilitates collaboration and synthesis of obsidian research.

[114] *First Chair [114] Second Organizer*

Vasquez, Ramon [1] *Discussant*

Vásquez Sánchez, Víctor [156] see Gaither, Catherine

Vaughn, Kevin (Purdue University), Hendrik Van Gijsegheem (Universite de Montreal), Jelmer Eerkens (UC Davis) and Moises Linares Grados (Universidad de San Marcos)

[267] *The Structure and Organization of Mining in Nasca from the Early Intermediate Period through the Middle Horizon: Recent Evidence from Mina Primavera*

This paper reports on 2010 excavations undertaken at Mina Primavera, a prehispanic hematite mine located in Ingenio, Peru. Fieldwork at the site revealed the technology and organization of mining at Mina Primavera. Based on artifactual evidence including fragments of a faceneck jar and an offering of a pair of cane panpipes, we hypothesize that the nature of mining changed from informal and itinerant with Nasca to more formally organized and administered by the Wari. We discuss implications for these possible changes in the context of Nasca and Wari as well as in our understanding of prehispanic mining in the region.

[267] *First Chair*

Vaughn, Kevin [267] see Van Gijsegheem, Hendrik

Vaughn, Kevin A. [160] see McCutcheon, Patrick T.

Veit, Heinz [124] see Lombardo, Umberto

Velasco, Matthew (Vanderbilt University) and Elizabeth Arkush (University of Pittsburgh)

[233] *Variations on a Tomb: Stylistic Difference and Conceptual Similarity in Northern Titicaca Basin Mortuary Practice*

Over 400 tombs from 6 nearby sites in the Northern Titicaca Basin dating to the Late Intermediate and Inka Periods (AD 1000-1532) were systematically surveyed and examined for patterns in style, construction, and spatial distribution. Slab-cist tombs (the dominant type in this region) vary considerably in size and elaboration at both the intrasite and intersite level, suggesting that tomb construction helped define distinct social groups within regions and within sites. Tomb construction techniques also span a gradient between slab-cist tombs and aboveground chullpas, suggesting that the former were conceptually and functionally foundational to chullpa building in the Titicaca Basin.

Velazquez, Adrian (INAH) and Emiliano Melgar (INAH)

[116] *Tenochcan Palace Productions of Shell and Lapidary Objects*

Recent researches have shown that a great amount of objects found in the offerings of the Sacred Precinct of Tenochtitlan, are local productions and not pieces obtained by tribute and commerce, as originally thought. An example of that are the researches about the manufacturing techniques of shell and lapidary objects, which morphological and technological standardization, along with its exclusiveness to the offerings of the Great Temple, allowed us to propose that they are palace productions made for the most elitist religious cult of the Mexica society.

Veldhuijzen, H. Xander [167] see Khalidi, Lamya

Vellanoweth, Rene [263] *Second Chair*

Vellanoweth, Renè [105] see Whistler, Emily L. [263] see Ainis, Amira F. [123] see Guttenberg, Richard B.

Venables, Barney (University of North Texas), Andrew Barker (University of North Texas), Steve Wolverton (University of North Texas) and Stan Stevens (University of South Florida)

[19] *Non-targeted protein analysis in experimental ceramic artifacts.*

To date, there are several examples of successful archaeological ceramic protein residue analysis. However, much of the research has relied on targeted protein analysis, a method that is of limited value in situations where little a priori knowledge regarding the artifacts under study is available. In order to refine our ability to conduct non-targeted protein research, we conducted a multi-part analysis of protein binding, survivability and identification via the use of experimentally prepared and archaeological ceramic artifacts, total organic carbon analysis, protein assays and HPLC-MS/MS. Results confirm previous research on protein-ceramic binding and identify key topics for future research.

[19] *Discussant*

Venables, Barney [19] see Stevens, Stanley M.

Ventresca Miller, Alicia (University of Pittsburgh)

[54] *Social Organization in the Eurasian Bronze Age: A Bioarchaeological Approach to the Study of Communities*
While mortuary archaeology has been a major component of archaeological practice in the Eurasian steppe, multivariate bioarchaeological analyses are

rarely undertaken. Therefore, scholars rarely agree on the nature of social organization or relative complexity of these communities. Previously recovered mortuary remains offers a wealth of data to address questions surrounding local social change during the middle to late Bronze Age transition in north central Eurasia. Through a multivariate statistical analysis of two cemeteries from a single microregion (Bestamak - Middle Bronze Age) and (Lisakovsk - Late Bronze Age), we have the ability to examine these societies at different scales.

Vera, Jaime (Zona Arqueológica de Monte Alban-INAH)

[95] *Los complejos residenciales de élite de Atzompa. Un análisis espacial.*

Los patrones y elementos arquitectónicos identificados en las casas de élite en Atzompa nos permiten establecer diferencias tanto regionales (Valles Centrales) como al interior del sitio. Estos elementos y/o patrones marcan funciones y usos variados como lo son la casa habitación o el uso político religioso. Un análisis espacial y distributivo de los elementos arquitectónicos como accesos, patios unidades anexas asociados a estos complejos, nos permitirán un acercamiento parcial al uso y la función de éstos complejos de élite y entender un poco de la organización de ésta ciudad zapoteca.

Verano, John (Tulane University)

[156] *Human Sacrifice in Northern Peru: Continuity or Diversity?*

Human sacrifice has deep roots in Northern Peru, and the evidence of such practices has grown significantly in recent years. Have new discoveries helped to clarify temporal trends and overall patterns? In many ways, the picture has become more complex, making simple categorizations difficult. How much can we know about the motivations and significance of sacrificial practices from archaeological evidence and the interpretation of iconography? These questions increasingly are coming to the forefront in current research.

Verbka, Joe (PennDOT) and Sean Martorelli (Indiana U of Pennsylvania)

[65] *GPR Investigations of a Historic Cemetery in Allegheny County Pennsylvania*

This poster presents the methodology and results of a geophysical survey conducted by the Pennsylvania Highway Archaeological Survey Team and PennDOT. The practical advantages of utilizing geophysical equipment in CRM archaeology are becoming ever more apparent. In the case of this PennDOT emergency slide project in Allegheny County, the use of ground penetrating radar proved effective in aiding in the assessment of the effects of the project on a historic cemetery. Through systematic survey and the use of GIS and GPR software, anomalies were identified and geo-referenced to avoid excavation while successfully avoiding adverse affects of the project.

Verdugo, Alex [57] see Gassaway, Linn

Verhaaren, Bruce [162] see Wescott, Konnie

Viau, Andre [72] see Peros, Matthew C.

Villagran, Ximena (Universidade De São Paulo) [253]

Second Chair [253] Second Organizer

Villagran, Ximena [253] see Klokler, Daniela

Villalpando, Elisa (Instituto Nacional de Antropología e Historia, Sonora)

[253] *La Playa. Some Hints on Ritual at Early Agricultural Communities in Northwest Mexico*

La Playa, an amazing site in northwest Mexico has become iconic in the study of Early Agriculture communities in the Sonoran Desert. Despite more than 500 features recorded and more than 300 inhumations excavated, emphasis has prevailed on reconstruct daily life and important aspects on ritual have dissolved among subsistence or health conditions information. We explore a different approach to reconstruct ritual among these communities with a diverse lecture of same data.

Villalpando, Elisa [147] see Cruz Guzmán, Carlos

Villanea, Fernando [194] see Monroe, Cara

Villanueva, Patricio [177] see Munoz, Cynthia M

Villaseñor, Isabel [92] see Barba, Luis

Villeneuve, Suzanne (Simon Fraser University), Brian Hayden (Simon Fraser University), Paul Goldberg (Boston University), Guy Cross (Terrascan Geophysics) and Matthew Sisk (Stony Brook University)

[176] *Investigating Processes of Aggregated Village Formation on the Western Canadian Plateau*

Ideology and ritual activities have been emphasized as important factors involved in the initial stages of institutionalized inequalities in transegalitarian societies. Yet, there are few archaeological cases of clearly identified ritual activity at this level. Specially prepared floor sequences in ritual structures at Keatley Creek dating to the early period of village formation provide one of the only fine-grained records for examining such issues. Results from excavations, micromorphology and radiocarbon dating are presented. GIS is also used in analyzing datasets to examine relationships between the development of ritual activity and the timing and resource conditions surrounding aggregated village formation.

[176] First Chair

Villeneuve, Suzanne [176] see Billy, Nora **[176]** see Hayden, Brian **[176]** see Leech, Rhonda **[176]** see Richards, Michael P. **[176]** see Hicks, Tyler **[176]** see Endo, Naoko

Vincent, Allison (Mercyhurst College)

[39] *Textile production in the Central Coast of Peru during the early intermediate period: Analysis of their political implications*

Specialization of textile production has been regarded as an important component of social organization. In the Andes, during the late intermediate and late horizon periods, textile production has been recognized as an important economic factor in the development of state level societies. However, little has been said about the nature of this activity and its social implications during earlier periods and in non-state level societies. In this paper I will present the most important antecedents of

earlier textile production in the central coast of Peru, placing special focus on the relationship between the nature of textile production, and its economic implications in social organization.

Vining, Benjamin (Boston University)

[39] *Rural Land-Use dynamics and the Tiwanaku State in the Suches Basin, Southern Peru*

Recent surveys in the high-elevation Lake Suches region (Moquegua, Peru) documents a long and stable history of pastoral land-use. Suches lies directly between Middle Horizon urban Tiwanaku and its principal colonies in the Moquegua Valley, but no direct evidence of a state presence has been recorded. Closer examination of shifting pastoral patterns, however, indicates the indirect influence of Tiwanaku on isolated rural communities. "Atomistic" pastoralists intensified pastoral production ultimately driven by Tiwanaku economic interests. These results refine understandings of the magnitude that archaic states' influence had, even in areas of no apparent state presence.

Viramontes, Jaime

[98] *Las representaciones de la figura humana en el arte rupestre de Guanajuato*

En el arte rupestre del Centro Norte de México en general, y de Guanajuato en particular, la representación de la figura humana fue uno de los temas iconográficos más recurrentes; en este trabajo daremos a conocer las características formales en las que fue plasmada la figura humana, así como algunas hipótesis para explicar su recurrencia y posible significado en términos de la cosmovisión de las sociedades de los recolectores cazadores que vivieron durante la época prehispánica en Guanajuato.

Vitousek, Peter (Stanford University), Oliver A. Chadwick (University of California Santa Barbara), Thegn Ladefoged (Auckland University) and Aurora Kagawa (Stanford University)

[261] *Agriculture and Biogeochemistry in Pre-contact Hawai'i: Opportunities and Constraints*

Upland rainfed dryland agricultural systems in pre-contact Hawai'i were bounded on their drier margin by a mean annual rainfall of 750mm and on their wetter margin by a striking threshold in soil fertility, beyond which natural ecosystems depend on dilute atmospheric inputs of major plant nutrients. Efforts to restore agricultural production to areas of leeward Kohala suggest seasonal climatic variation influenced agricultural potential; dry, low elevation areas could yield only in the winter wet season, when low temperatures constrained production in the wetter upland areas.

Vitousek, Peter [261] see Browne Ribeiro, Anna T.

Vleck, David [224] see Dowd, Anne

Vogel, Melissa (Clemson University)

[125] *Casma Architecture Takes its Place on the North Coast Continuum*

As one of the foremost authorities on Chimú architecture, Carol Mackey has influenced generations of Andean scholars with her extensive body of work and her generous spirit. She also sparked my interest in a relatively unknown culture, the Casma polity. This paper

examines recent research on Casma architecture, and attempts to place it on the cultural continuum of Peru's north coast. Architecture from Casma sites is compared to the contemporaneous Chimú tradition, as well as to cultural antecedents found in Late Moche and Wari architecture, as a means for gaining a deeper understanding of Casma public ritual and sociopolitical organization.

Vohberger, Marina, Joris Peters (Institute of Palaeoanatomy and History of Veterinary Medicine), Claus von Carnap-Bornheim (Archäologisches Landesmuseum Schleswig), Olaf Nehlich (Archäologisches Landesmuseum Schleswig) and Gisela Grupe (Bavarian State Collection for Anthropology and Palaeoanatomy and Biocenter LMU Munich, Department I Anthropology and Biodiversity)

[42] *Ecology and Economy in the settlements of Viking Haithabu and Medieval Schleswig: an isotopic perspective*

The sites of Viking Haithabu (9th to 10th century AD) and Medieval Schleswig (11th to 12th century AD) form a settlement continuum in an extraordinary ecological system, the estuary of the Schlei. Performing an economic rise from a small sailor's village to an important trade centre followed by a descent to meaninglessness, both settlements represent interesting research material. Food webs show the composition of resources for consumers based on stable isotopes of light elements (C, N, S, O). Results on strontium isotopic signatures ($^{87}\text{Sr}/^{86}\text{Sr}$) on human and animal samples for migratory evidence and identifying traded animals.

von Carnap-Bornheim, Claus [42] *see Vohberger, Marina A.*

Von Falkenhausen, Lothar [23] *Discussant*

Von Nagy, Christopher

[157] *Coastal deltaic dynamics, human settlement, and ancient Olmec polities in Tabasco, Mexico*

The recent devastating flooding of Tabasco exemplifies an ever present risk on this coastal plain where the important Olmec polity of La Venta developed and collapsed. Historic avulsions produced major changes in delta structure with significant human and settlement impact, and floods and avulsions have constituted a pattern of risk and change defining regional Late Holocene landscape evolution since the stabilization of Post-Pleistocene sea-level rise. Communities, such as that represented by Olmec San Andrés near La Venta, flourished and failed within this context. Climate and sea-level driven change are two significant factors impacting settlements and polities explored in this paper.

von Schwerin, Jennifer [128] *see Richards-Rissetto, Heather*

Vonarx, Amy Jo [92] *see Hodgins, Greg W L*

Voorhies, Barbara (University of California, Santa Barbara)

[88] *The Site that Keeps on Giving: Thirty plus Years of Research at Tlacuachero*

This paper presents an introduction to the symposium

including background about the Tlacuachero shell mound, its research history, and the most recent focus on the enigmatic superimposed clay surfaces underlying one area of the site. The paper summarizes previous evidence for both stability and diachronic change in ecological adaptation during Late Archaic Period site occupation as a backdrop for new research reported in the symposium.

[88] *Discussant*

Voorhies, Barbara [88] *see Neff, Hector [88]* *see Culleton, Brendan J. [5]* *see Gomez, Josue A.*

Voss, Barbara (Stanford University)

[48] *A Land of Ethnogenesis*

Hailed as a land of new beginnings, California is often imagined as a place where people come to reinvent themselves. Ethnogenesis – the formation of new ethnic identities – is one such strategy of reinvention. Archaeological investigations of indigenous, colonial, and early American contexts reveal a persistent tension between the social mobility made possible by ethnogenesis, and the structural conditions and power relations inherent to ethnic differentiation. In particular, the material culture of daily life points to the tight relationship between labor and consumption in negotiating new social identities.

[16] *Discussant*

Wack, Lynn (University of Texas San Antonio)

[177] *Analyzing Change in Animal Use from the Late Archaic to the Terminal Late Prehistoric Periods at the Burris Bison site (41VT66) in South Texas*

Archaeological sites containing bison in South Texas increases between the Late Archaic (400 B.C. to A.D. 800) and the Terminal Late Prehistoric (A.D. 1200-1600) periods. Human behavioral ecology suggests that such an increase should produce a narrowing of the diet breadth. I compare the Late Archaic and Terminal Late Prehistoric faunal assemblages at site 41TV66. These assemblages reveal increased presence of bison during the Terminal Late Prehistoric and an expansion, rather than a narrowing, of the diet breadth. Such a pattern is consistent with a variable bison presence in this area during the Terminal Late Prehistoric.

Wagner, Ursel (TU-Muenchen), Thibault Demoulin (Archaeologische Staatssammlung Muenchen, Lerchenfeldstr. 2, 80535 Muenchen, Germany), Rupert Gebhard (Archaeologische Staatssammlung Muenchen, Lerchenfeldstr. 2, 80535 Muenchen, Germany), Werner Haeusler (Physik Department E15, Technische Universitaet Muenchen, 85747 Garching, Germany) and Cristina Mazzola (Archaeologische Staatssammlung Muenchen, Lerchenfeldstr. 2, 80535 Muenchen, Germany)

[162] *Attempts to stabilize Archaeological Iron Objects: A Moessbauer Study*

Iron Moessbauer Spectroscopy together with X-ray diffraction is an excellent method to identify the components of rust on archaeological iron objects. We report on an ongoing study of objects from the Celtic Culture (300-15 BC) aiming at improving the methods of conservation. Part of the objects were recently excavated, others kept in museum collections for decades. The oxides magnetite, goethite, ferrihydrite,

maghemite, hematite and akaganeite were found in varying proportions. Model experiments in humid environments and at elevated temperatures were performed to study the deleterious effect of akaganeite and its thermal decomposition.

Waguespack, Nicole (University of Wyoming) and Todd Surovell (University of Wyoming)

[57] *Folsom Houses & House Life*

In Paleoindian contexts only a handful of sites provide a glimpse at Folsom household organization because direct physical remains of architectural features are rarely preserved. The construction of shelters, explicitly designed to keep some behaviors and processes "in" and other behaviors and processes "out," should result in curvilinear and continuous breaks in artifact spatial patterning. On the basis of artifact density gradients, burned artifact distributions and radial discard patterns, we identify the presence of three residential structures at Barger Gulch Locality B (5GA195), a Folsom campsite in Middle Park, Colorado.

Wahoff, Tanya (AECOM) and Jamie Cleland (AECOM)

[50] *Native American Trails of the American Southwest*

Found throughout the deserts of the American Southwest, Native American trails range from an expression of the purely practical to the intangible or symbolic (story-telling or dream travel). Physical characteristics, associations, and ethnographic documentation all provide insights into these expressions, although interpretations are often wide-ranging. This paper provides an discussion of the range of variability in trails in the American Southwest deserts, focusing on the issue of homogeneity vs. heterogeneity in their development and manifestations.

Wake, Thomas (Cotsen Institute of Archaeology at UCLA) and Benito Guzman (UCLA)

[88] *Archaic Period Vertebrate Exploitation at Tlacuachero, Chiapas*

Recent excavations at the Pacific coastal Archaic Period shell midden site of Tlacuachero, Chiapas, have recovered a diverse array of vertebrate faunal remains. Fish remains dominate these samples that also include reptiles, birds and mammals. Several of the bone samples are associated with constructed surfaces. Distribution of vertebrate remains across these surfaces along with changing fishing strategies through time are examined. Implications for resource depression or stability and regional resource use patterns are discussed.

Wake, Thomas [186] see Barge, Meghan S. [67] see Davis, Michael H.

Walker, Danny (Wyoming State Archaeologist's Office)

[82] *CCC and RBS archaeology at Fort Laramie National Historic Site.*

Fort Laramie National Monument was established in 1938. That same year, the first archaeological investigations began before restoration of the building started by a CCC group from Camp Guernsey, Wyoming. Since then, River Basin Surveys, National Park Service, University of Wyoming and Wyoming State Archaeologist's Office have continued the work. The

early projects (CCC and RBS) will be presented, with a short review of the future at Fort Laramie.

Walker, Renee (SUNY College at Oneonta)

[70] *Prehistoric Dogs in the Eastern United States: The Sacred and the Secular*

This research addresses the question of what role dogs played in prehistoric Native American culture. Dogs from interment sites throughout eastern North America are analyzed to compare skeletal morphology, size, and sex ratios. Interment patterns are explored to discern how dogs were viewed in these societies. It is hoped that examining the similarities and differences of dogs and dog burials throughout the east will better inform researchers about this phenomenon. Ultimately, this research suggests that dogs played multiple roles linked to both secular and sacred aspects of life.

Walker, William (New Mexico State University)

[24] *Animation and Conversion in the Ancient Southwest*

In studies of animate universes of past peoples it is important to understand how social relationships between human and non human beings (e.g., artifacts, architecture, wind, rain, clouds, stars) are established and the contexts in which they change. In this paper I explore the changing social relationships between people, pottery styles, architecture, and a range of other nonhuman beings in the Mogollon region of the American Southwest. I am particularly interested in how weather contributes to changing contexts of animacy and I seek arguments that bridge the gap between materialist and idealist approaches to the topic.

Wall, Bridget [239] see Larson, William E.

Wallace, Henry (Desert Archaeology Inc) and Michael Lindeman (Desert Archaeology, Inc.)

[52] *Competition and Cooperation: Late Classic Period Aggregation in the Southern Tucson Basin*

By A.D. 1300, all of the major villages along the Martinez Hill to A-Mountain reach of the Santa Cruz River in the Southern Tucson Basin were abandoned and the remaining population aggregated around Martinez Hill. Prior marital ties, craft specialization, and communal water and land rights meant that the nucleated groups were familiar; however, the division of space and presence of 12 platform mounds indicates controlled competition between the multiple village social units that came together. Missing within the new settlement structure are communal facilities that might have promoted a cohesive identity and served to mitigate tensions.

Wallace, JoAnn (Michigan State University) and Jodie O'Gorman (Michigan State University)

[106] *Another Look at the Norris Farms 36 Cemetery, west-central Illinois*

Mississippian influence on Oneotan material culture has been documented in previous archaeological studies. We are interested in the relationship between these two populations evident at the Norris Farms 36 Cemetery in west-central Illinois. This project is a reanalysis of the mortuary context demonstrated at the Norris Farms 36 Cemetery. This analysis will focus on the hypothesized Mississippian and Oneotan cultural interaction through an identity and migration theoretical approach for the

region and an analysis of the GIS information available for the cemetery.

Waller, Kyle (University of Missouri-Columbia), Kathy Durand (Eastern New Mexico University) and Jack Fenner (Australian National University)

[219] *Strontium Isotope Analysis of Migration at Two Chacoan Outliers in the Middle San Juan Region.*

Biogeochemistry is well positioned to contribute to the recent resurgence of migration analyses in the American Southwest. Previous bioarchaeological analyses of two Chacoan outliers located near Farmington, New Mexico, the Tommy Site (PI-P11) and the Mine Canyon Site (P111) have indicated that the inhabitants of the Mine Canyon Site were not of ancestral Puebloan origins. Here, strontium isotope ratios ($87\text{Sr}/86\text{Sr}$) from human molars are compared with the local isotopic ratio to identify migrants at both sites. The likely presence of migrant individuals, particularly at the P111 Mine Canyon Site, has significant implications for post-Chaco Canyon social organization in the Four Corners Region.

Waller, Steven (Rock Art Acoustics)

[60] *Archaeoacoustic Techniques Lead to New Interpretations of the Thunderous Reverberation at Rock Art Sites*

Correlation between rock art placement and acoustics was documented, and initial research focused on standardized scientific techniques including quantitative sound level measurements of echoes and reverberation time. However, musical experimentation in reverberating environments of rock art sites, more along the lines of artistic expression than scientific study, resulted in the realization that percussion noises repeated in rapid succession can build up to the point that it sounds like thunder. This thunderous reverberation is culturally significant since major rock art themes are consistent with myths of thunder gods, including in the Old World hoofed animals and New World thunderbirds.

Walling, Stanley [148] see Brokaw, Nick

Wallman, Diane (University of South Carolina)

[121] *Subsistence and Slavery on a French Colonial Plantation: The Analysis of Faunal Remains from Habitation Crève Cœur, Martinique*

This paper integrates historical and archaeological data from a French colonial plantation, Habitation Crève Cœur, on the island of Martinique to examine slave subsistence. I present the results of zooarchaeological analyses as evidence of African and Afro-Caribbean slave foodways. Faunal remains are direct indicators of provisioning, eating, and community distribution of subsistence resources. Using these data I reconstruct the strategies and negotiations developed by the enslaved laborers to manipulate the constraints of their social and natural landscape. This study of slave lifeways and subsistence will provide novel insight into the understudied French colonial plantation system within the French West Indies.

Walls, Matthew (University of Toronto)

[159] *Frozen Landscapes, Fluid Technologies: Inuit Kayak Hunting and the Perception of the Environment in Greenland*

Both archaeology and ethnography characterize Inuit

culture as having a strong dependence on local ecology, as well as complex spirituality. Especially prominent is the concept that every part of the environment is animated by spirits, and all actions, particularly those involved in hunting, invoke reciprocity between humans and their metaphysical surroundings. This paper explores the relationship between such perceptions of the environment and the manner in which it was experienced through traditional hunting technology. Research draws upon an ethnoarchaeological project that studies traditional kayaking in Greenland.

Walsh, Justin (Louisiana State University)

[242] *Models for the Protection of Cultural Heritage in Space: An Internationalist Perspective*

The extraordinary historic importance of some sites and objects in space, combined with the special international nature of space law, makes an examination of multilateral efforts to manage earthbound cultural heritage worthwhile. Numerous international protocols exist to protect sites and artifacts from damage. Their implementation offers valuable lessons about the ways nation-states act (and do not act) in concert to preserve cultural heritage. The UNESCO Cultural Property Convention, applicable outer space treaties, the Antarctic Treaty, and the Law of the Sea will each be discussed with regard to their viability as models for protection of culturally significant material in space.

Walsh, Megan [88] see Kennett, Douglas J.

Walsh, Michael (Cotsen Institute UCLA) and A. Natasha Tabares (Southern California Edison)

[230] *The Inland Chumash Research Project: Not a Chief in Site*

The Inland Chumash Research Project (ICRP) conducted by UCLA in the 1970's was spearheaded by C. William Clewlow, Jr. The Project was carried out coincident with two significant transformations in the history of California archaeology: the dawning of the CRM era, and the paradigmatic shift that began to see the Chumash as politically and economically organized as chiefly polities. The role the ICRP played in these significant historical and anthropological developments is explored.

Walsh, Rory (University of Oregon)

[169] *Experiments in morphology and taphonomy: Foxtail millet*

Innovative analyses of modern seeds provide valuable insights into archaeobotanical depositions. In this example from Neolithic north China, remains of foxtail millet are compared with modern reference material obtained from a variety of contexts. Modern foxtail is subjected to detailed morphometry before and after charring, illuminating the full range of morphology in a modern domesticate and addressing taphonomic issues. These experiments aid in the identification of archaeological foxtail, and statistical analysis reveals trends in feature type, settlement patterning, and site function.

Walter, Marni (Boston University)

[259] *In the Eye of the Beholder?: A Framework for Authenticity*

In the World Heritage Convention, cultural heritage

nominations “must meet the conditions of authenticity.” But the problem has always been, what does this mean, and how can it be implemented? “Authenticity” in the Convention’s Operational Guidelines has evolved and now includes an expanded definition that incorporates the Nara Document on Authenticity. Examples from archaeological World Heritage sites show that it often is not addressed explicitly in World Heritage nominations or management plans, despite the sites’ concern for maintaining authenticity. In this paper I present an adaptable framework for considering authenticity that relates to the Nara Document and existing management plans.

[259] *First Chair*

Walz, Jonathan (Rollins College)

[100] *Seemingly Mundane Objects: Shell and Other Beads from Central, Coastwise East Africa, 750–1550 C.E.*

I report on beads of shell and other materials identified during survey and excavations in the lower Pangani (Ruvu) Basin, Tanzania. Locally produced beads—for instance, perforated discs made from the shells of African landsnails—challenge extant narratives about connectivity among regional populations during the later Iron Age (especially 900–1250 C.E.). These seemingly mundane objects provide critical insights about craft production, interaction, and shifting political economies in lowland northeastern Tanzania and wider eastern Africa.

Wambach, Thomas (Indiana University of Pennsylvania)

[209] *Firing Techniques and their Effects on Susquehannock Ceramic Vessels*

Although archaeologists have generated considerable descriptive data on the structure of Susquehannock and other Late Prehistoric/Proto-historic ceramic vessels, there is a lack of information on the manufacture and production of these ceramics especially concerning the details of possible firing processes and techniques. While archaeological research appears to indicate that open pit firing was utilized by the Susquehannock, other firing processes, including above ground bonfiring and clamp firing, would produce similar general characteristics. The results of experiments testing and comparing the effects of open pit, bonfire, and clamp firing on recreated Shultz Incised Susquehannock vessels are presented and discussed.

Wampler, Morgan (University of West Florida)

[105] *Alea lacta Est: Evidence of Recreational Activities Aboard an 18th Century Spanish Frigate*

The Nuestra Señora del Rosario y Santiago Apostol sank off the coast of Santa Rosa Island in northwestern Florida in 1705. Archaeological investigation of this wreck site recovered numerous artifacts and faunal remains relating to the daily activities of the sailors. Other maritime studies of similar vessels have focused their attention on ship construction and the lifeways of the commanding officers. In order to understand the daily recreational activities of the sailors aboard this frigate, analysis was undertaken on the various gaming pieces and compared with remains from other wrecks of this period to assess both ethnicity and status.

Wandler, Cole (Northern Arizona University), Jason

Theuer (Petrified Forest National Park, National Park Service), Francis Smiley (Northern Arizona University) and Meghann Vance (Northern Arizona University)

[134] *The Rainbow Forest Horse Barn: A Multi-component Paleoindian Site in Petrified Forest National Park, Arizona*

The Rainbow Forest Horse Barn Site is the first multi-component Paleoindian occupation yet identified in northern Arizona. The site sits on an elevated landform, surrounding a large natural playa, overlooking the Little Colorado River Valley to the south. This poster presents the results of investigations by NAU and NPS Archaeologists, including artifact type and use-wear analyses, spatial analyses, and test excavations. This site establishes that the Petrified Forest was known to Paleoindian groups by at least Clovis times, and opens the door for future investigations into the role and importance of the Petrified Forest to hunter-gatherer groups over time.

Wang, Minghui (Institute of Archaeology, CASS)

[72] *Introduction of Chinese Osteology Research*

In this paper, I will give you a short introduction of physical anthropology research achievements of China. It mainly include the types of the ancient population, gender archaeology from the skeletons, the paleopathology, paleo-traumatology, paleo-demography, dental anthropology, the diet research of ancient people, the ancient custom research from the skeletons, and ancient DNA research.

Ward, Christine (Statistical Research, Inc) [215]
Discussant

Ward, Sheila [148] *see Brokaw, Nick*

Warden, Robert (Center for Heritage Conservation, Texas A&M) and Julie Rogers (Center for Heritage Conservation/ Texas A&M University)

[146] *Scale matters: 3D technologies and information with the Maya Research Program in Belize*

New developments in technologies in the past 20 years have created opportunities for new research products in archaeology. Most of these technologies are well known and their use in projects has been widely published. Though these technologies are no longer novel, issues of how, when, or why one should utilize them remain. This presentation will use case studies of vastly differing scales from architecture to artefact as a means of creating dialogue regarding the use of laser scanning, photogrammetry, and structured light scanning and the utility of the information they provide.

Warinner, Christina (Harvard University)

[111] *From the Ground Up: Advances in Stable Isotope-Based Paleodietary Inference*

Stable isotope-based paleodietary analysis, in combination with paleobotanical and zooarchaeological studies, has become an essential tool in archaeological reconstructions of past lifeways. This paper reviews the current state of the field and highlights the importance of understanding regional ecology and culture when attempting to infer paleodietary behavior using carbon and nitrogen light stable isotope analysis.

[111] *First Chair [111] Third Organizer*

Warmlander, Sebastian, Michael Neiss (Uppsala University, Sweden) and Sabrina Sholts (UC Berkeley)

[146] *3D-model Analysis of Scandinavian Viking Age Brooches*

Surface 3D-models of excavated Scandinavian Viking-Age brass brooches were created with a NextEngine laser scanner. Using RapidWorks 3D software, the digital models of the brooches were investigated in ways not feasible for the solid objects, including digital assembling of broken objects, distance measurements between select brooch landmarks, comparisons of size and volume, investigations of tool-marks, and false-colour imaging to help identify stylistic patterns. As a result, the temporal relation between the objects was established. Furthermore, some brooches display similarities indicating that they originate from the same workshop. The results illustrate how 3D analysis can help answer questions in artifact analysis.

Warner, John (University of Kentucky)

[125] *An Examination of Architectural Continuity and Discontinuity from the North Coast of Peru*

The rich tradition of monumental architectural construction on the North Coast of Peru provides a long-term record of spatio-architectural development. Analysis over the long-term and across the region of architectural changes and continuities including the allocation of public and private space, access patterns, and the distribution of features typically associated with politico-ritual activity is critical for an interpretation of diachronic trends in North Coast sociopolitical organization. Concentrating upon the Late Formative Period site of Jatanca (Jequetepeque Valley), this paper will examine these architectural histories as a means to reconstruct long-term social processes related to incipient urbanization.

[125] *Second Chair* **[125]** *Second Organizer*

Warner, Mark (University of Idaho)

[175] *The other side of the tracks (literally): Historical archaeology of the Disenfranchised in turn of the century Sandpoint Idaho*

Between 2005 and 2008 over 500,000 artifacts were recovered from a series of compliance-driven excavations in the north Idaho town of Sandpoint. The excavations produced extensive assemblages associated with the town's, prostitutes, the mill and railroad workers (and their saloons), and a small Chinese community. Taken as a whole it is an unprecedented collection of materials that tell a rich story about the lives of people who are largely invisible in the archaeological record of the Inland Northwest. This paper outlines some of those stories and discusses the powerful implications this project has for the status of historical archaeology in Idaho.

[175] *First Chair*

Warny, Sophie [265] *see Evans, Amanda M.*

Washington, Michelle [232] *see Springer, Chris L. M.*

[263] *see Caldwell, Megan E.*

Waterman, Anna (University of Iowa), David, W Peate (University of Iowa) and Ana Maria Silva (University of Coimbra)

[234] *In search of homelands: using strontium isotopes to identify biological markers of mobility in late prehistoric Portugal*

This study uses strontium isotopes ($87\text{Sr}/86\text{Sr}$) in dental enamel from burial populations related to the Chalcolithic settlement site of Zambujal (c. 2800-1800 BC) to distinguish non-local individuals. Zambujal has long been considered a central location of population aggregation, craft production and trade during a time of increasing political centralization and social stratification until its eventual abandonment during the Bronze Age. While it is assumed that population migration and long distance trade played an important role in the region's development, little is known about the migration patterns of individuals or groups. Directions for further study are discussed.

Waterman, Anna [234] *see Moore, Sara G.*

Waters, Michael (Texas A & M University)

[155] *Clovis Chronology and Origins*

Radiocarbon dates show that Clovis flourished during a narrow time interval during the late Pleistocene. Evidence from North America shows that Clovis originated south of the Laurentide and Cordilleran ice sheets. More specifically, recent analysis of the 13,000 to 16,000 year old Buttermilk Creek Complex artifacts that underlie a Clovis horizon at the Debra L. Friedkin site, Texas, show strong technological links to Clovis. Genetic data from the Clovis human remains at the Anzick site, Montana, provide evidence of the northeast Asian origin of the First Americans.

[213] *Discussant*

Waters, Michael [181] *see Younie, Angela M.* **[139]** *see Wright, David K.*

Waters-Rist, Andrea [183] *see McCafferty, Sharisse D.*

Watkins, Christopher [158] *see Higgins, Howard C.* **[52]** *see Rice, Glen E.*

Watkins, Joe (University of Oklahoma) [184] *First Moderator* **[78]** *First Chair*

Watkins, Timothy (Bureau of Land Management Kingman, AZ) and David Stephen (Pima Community College)

[137] *Integrating education, research and resource management at Burro/Pine Creek*

Since 2003 the Burro Creek/Pine Creek Archaeological Project has combined the goals of education, research and resource management within the context of an ongoing systematic archaeological survey. A joint venture between the BLM Kingman Office and the Pima Community College Archaeology Centre, the fieldwork now encompasses 5,000 acres with almost 100 sites located and documented. As well as serving as a capstone field experience for PCC students, it has generated a rich dataset for ongoing research, as well as a unique challenge for developing management strategies for the long-term preservation of cultural resources located in such a remote area.

Watson, Andrew [176] *see Leech, Rhonda* **[176]** *see Hicks, Tyler*

Watson, James (Arizona State Museum, University of Arizona)

[143] *Distances in Space and Time: Issues with a Mortuary Database of the First Farmers in the Southern Southwest*

This paper describes issues associated with the construction of a biocultural database from samples of the earliest farmers from the southern Southwest and northwest Mexico. Currently over a dozen archaeological sites dating to the Early Agricultural period (circa 1,600 B.C.-A.D. 150) have produced a large sample of mortuary features (n=413). These samples, and thereby the data, face unique challenges in interpretation compared to similar large data sets in that the materials (sites, features, and individuals) are geographically and temporally distant from each other; they are separated by over 150 linear miles and span almost 2,000 years of cultural development.

Watson, James [147] *see Cruz Guzmán, Carlos [237]*
see Fields, Misty

Watson, Karen (California State University Sacramento)

[96] *Identifying Factors that Influence Choice of Stone for the Manufacture and Usage of Maize-Grinding Tools in Ancient Mexico*

Knowing what factors influenced pre-hispanic people's choice of raw materials for maize-grinding tools is important in increasing our understanding of maize preparation intensification and changes in patterns of social, economic, and political development. In this paper, I identify factors that apparently influenced the choice of stone for the manufacture and usage of maize-grinding tools in ancient Mexico. I analyze data from several collections in three areas of Central Mexico: 1) the Mezquital Valley in Hidalgo, 2) the Apizaco region in Tlaxcala, and 3) the Teotihuacan Valley, Mexico.

Wattenmaker, Patricia (University of Virginia)

[198] *Celebrating Abundance, Creating Scarcity: Ancient Mesopotamian Surplus Economies*

Challenges to the model of despotic rule in early state societies complicate the question of why households and communities intensified production in support of ancient polities. To better understand intensified surplus production in ancient Mesopotamia, this paper considers the symbolism associated with surpluses, as well as the ways that surpluses were utilized in various sectors of society. An analysis of storage facilities, their locations and contents, combined with insights from written records, suggests some of the ways that motivations for surplus production were embedded in social and ritual, as well as economic and political, realms of society.

Watts, Christopher (Royal Ontario Museum)

[55] *Points of passage/points of view: Iroquoian animal effigy pipes and the crossing of corporeal borders*

As works of artistic merit, Iroquoian animal effigy pipes have captivated Northeastern archaeologists and other scholars since the late nineteenth century. In reviewing the various mammalian, avian, amphibian and other animal forms associated with these pipes, archaeologists typically alight on their sociopolitical or symbolic significance among Iroquoian groups. I seek to extend

this discussion by suggesting that the use of animal effigy pipes, in concert with the act of tobacco smoking, would have permitted a corporeal/perspectival shift in keeping with notions of a human/animal kinship, shared embodiment and relational ontology within an Iroquoian worldview.

Watts, Joshua (Digital Antiquity - Arizona State University) [118] *Discussant*

Watts, Joshua [187] *see Lack, Andrew*

Waweru, Veronica (National Museums of Kenya) and Kristy Dahlstrom (University of Connecticut)

[208] *Pharmacology and cultural aspects of arrow poison use in Kenya: An ethnoarchaeological approach.*

This study investigates the use of poison tipped arrows in the last 100 years in Kenya among three ethnic groups. The data has been procured from arrows and literature at the National Museum and interviews with elderly persons with knowledge and ritual powers to make poisons for use with the bow and arrow. Bow and arrow weaponry has been used to deliver poison to quarry. The antiquity and contexts of poison use in prehistory are unclear. This research provides insights into the cultural parameters and pharmacology of poisons used with projectile weaponry in prehistoric non-state societies.

Waweru, Veronica [133] *see Dahlstrom, Kristy*

Weaver, Eric, Chris Carr (University of Cincinnati, Geography), Nicholas Dunning (University of Cincinnati, Geography) and Vernon Scarborough (University of Cincinnati, Anthropology)

[119] *Examining landscape modifications for water management at Tikal using 3-dimensional modeling with ArcGIS*

The digitization of the Penn Tikal Project Maps into a GIS format presents many new opportunities to visualize and analyze these data. ArcScene is an extension of ArcGIS which provides the capabilities to convert a 2-dimensional digitized map to a 3-dimensional model. Using ArcScene, two 3-dimensional maps were made based on the digitized maps: one presents the Tikal area prior to Maya settlement and the other displays the Maya-modified landscape. A basic hydraulic model was developed using ArcGIS hydrology tools to examine how these modifications contributed to water management.

Weaver, Eric [266] *see Smyth, Michael P. [119]* *see Carr, Christopher [119]* *see Scarborough, Vernon*

Webb, Emily (The University of Western Ontario), Christine White (The University of Western Ontario) and Fred Longstaffe (The University of Western Ontario)

[255] *Isotopic evidence for the regional significance of the Nasca ceremonial centre of Cahuachi*

Stable isotope data from human tissues and environmental water are used to assess the geographical scale of influence of the ceremonial centre Cahuachi in the Nasca region of Peru (AD1-1000). Oxygen- and hydrogen-isotope data from environmental water samples from throughout the Rio Grande de Nasca drainage are used to characterize natural isotopic variation, and to guide interpretation of the bone/enamel

oxygen-isotope compositions of thirty-three adults interred at Cahuachi. By demonstrating the spatial breadth of the geographic origins of these individuals, this study supports the regional significance and use of Cahuachi as a place of burial.

Webb, Monica (University of Tulsa)

[187] *A Design Analysis of Ramos Polychrome, Babicora Polychrome, and White Paste Babicora Polychrome Ceramic Shards From Test Pits at Site 204, Casas Grandes Region, Chihuahua, Mexico*

Despite the vast popularity of Medio-period (A.D. 1200-A.D. 1475) Casas Grandes polychrome ceramics with archaeologists, museums, and private collectors, analysis of symbolic meaning and societal implications is only beginning to be carried out on the elaborate designs. A collection of Ramos, Babicora, and White Paste Babicora polychrome shards from excavations at Site 204, located in the Casas Grandes area in northern Mexico, was analyzed in this project using digitally photographed images. Designs were analyzed for variety, line width, motifs, and symbolism to better understand how they changed from early to late Medio-period.

Webb, Paul [111] *see VanDerwarker, Amber M.*

Webber, Charlie (National Park Service) and Jim Collette (Museum of Northern Arizona)

[20] *Insights Into The Prehistoric Occupation at Furnace Flats As Seen From Arroyo 4, Grand Canyon National Park*

This paper will focus on the construction sequence and material remains uncovered in Arroyo 4 at Furnace Flats in Grand Canyon National Park. Excavations exposed a limited portion of two roomblocks, revealing three masonry structures built into the post occupational fill of three original masonry structures. Separating these two episodes of occupation was a time span of less than a generation and a buildup of two plus meters of sediment deposition. In addition, a review of the architectural and artifactual remains found within these six rooms reveal important insights into the material cultural of the occupants living at Furnace Flats.

Webber, Charlie [248] *see Brennan, Ellen*

Weber, Jennifer (Georgia State University) and Terry Powis (Kennesaw State University)

[28] *Chasing Sacbes: Ritual Landscape Analysis at the Ancient Maya Site of Pacbitun, Belize*

Caves played a vital role in the religious thought of the ancient Maya and were seen as entries to the underworld and homes to deities. Pilgrimages to these sacred places influenced and were influenced by settlement patterns and socio-political relations. This paper discusses the results of the 2010 survey in the periphery of Pacbitun, located in the foothills of the Maya Mountains in the Cayo District, Belize. This data contributes to the analysis of the ritual landscape surrounding ancient Maya sites and the interpretation of Pacbitun as a site center.

Weber, Sadie (Stanford University) and Cheryl Makarewicz (Institut für Ur-und Frühgeschichte, Christian-Albrechts Universität Kiel, Germany)

[169] *Hidden Roots: Tubers and the Transition from*

Foraging to Farming in the Near East

Increased predictability and low dietary risk are primary features of established plant agriculture, the earliest stages of plant domestication processes was likely a high-risk enterprise characterized by fluctuating availability of cultivars as foragers first experimented with plant manipulation. Wild tubers, an important, but often overlooked, food source regularly, may have served as an important dietary supplement that afforded first cultivators the opportunity to pursue the potentially risky experiment of food production. Here, we present analyses of starch remains recovered from Pre-Pottery Neolithic A el-Hemneh, Jordan, in order to explore the role of tubers in the transition from foraging to farming.

Webster, David (Penn State University)

[191] *What We Don't Know about Maya Kings*

Since the 1060s Maya scholars have revolutionized our understanding of Maya kings and royal dynasties. Despite this progress, much remains unknown, including the issues of royal polygyny and marriage patterns, royal management of economic affairs, and the scale of the political arenas in which kings operated.

Webster, Laurie (University of Arizona) and Edward Jolie (Mercyhurst College)

[188] *A Perishables Perspective on Falls Creek and the Basketmaker II World*

Perishable artifacts were an integral component of Basketmaker II burial assemblages at the Falls Creek Rock Shelters. The associated perishable artifact inventory, including coiled baskets, prepared hides, human hair cordage, braided sashes, and twined blankets, bags, aprons, and mats, provides a unique glimpse into the social lives and funerary practices of early agriculturalists at the eastern edge of Colorado Plateau. This presentation describes the style and technology of these artifacts and interprets them in light of perishable assemblages from other regions of the Basketmaker II world.

[203] *Discussant*

Webster, Laurie [18] *see Hays-Gilpin, Kelley A.*

Weeks, William (University of Arkansas)

[60] *T. Crow Rock: East Tennessee Cherokees in the Post-Removal Era*

Many east Tennesseans claim descent from Cherokee ancestors that either evaded capture or escaped during the tragic period of Southeastern Indian Removal in 1838-1839. For many, this can be difficult to document beyond their family traditions. However, in some cases, archeology may provide another body of evidence for genealogical research. For example, the descendants of T. Crow have established Cherokee identity, in part, through a petroglyph carved by their ancestor at a spring on Mowbray Mountain, Hamilton County, Tennessee.

Wegener, Robert [80] *see Hall, John D.*

Wegener, Robert M. [80] *see Blake, Karry L.*

Weinstein, Richard (Coastal Environments, Inc.), Charles Pearson (Coastal Environments, Inc.) and Sherwood Gagliano (Coastal Environments, Inc.)

[265] *Establishing Criteria for the Identification of*

Submerged Prehistoric Sites on the Outer Continental Shelf, Gulf of Mexico

Over the past three decades, technologies have developed that permit the mapping of submerged paleolandscapes on the world's continental shelves plus the identification of locations that might contain preserved prehistoric cultural deposits. The examination of these potential site locations is typically made difficult because they are submerged and commonly buried. The use of core samples from submerged and buried sites to identify cultural deposits is discussed. Techniques drawn from geology and sedimentology are used to identify the macro- and micro-properties that characterize cultural deposits and distinguish them from natural sedimentary facies anticipated on the Gulf of Mexico's continental shelf.

Weir, Andrew (CCRG, Inc.)

[80] *Great Lakes, Harbors, Breakwaters, and Piers...oh my!*

Under the direction of John Milner and Associates, and for the U.S. Corps of Engineers (USACE), Commonwealth Cultural Resources Group, Inc. (CCRG) documented 26 sites in the USACE Detroit District. This effort, which occurred between January and September, 2010, resulted in the preparation of 19 National Register of Historic Places (NRHP) nominations and eight Determinations of Eligibility (DOE) reports. These NRHP nominations and DOE reports were completed for numerous canals, harbors, harbor facilities, and waterways throughout Michigan, Wisconsin, and Minnesota.

Weisman, Brent (University of South Florida) [130]
Discussant

Weismantel, Mary (Northwestern University)

[24] *Moche Ceramics as Political Actors*

Evidence such as painted representations of fishing lines, boats, clothing and weapons as personified, and formal parallels between human bodies and ceramic vessels, indicates that Moche was a society in which objects acted as subjects. As valuables placed in elite tombs, however, the ceramic vessels do more than just make ontological assertions about materiality; they are also political statements about lineage, inheritance, control of irrigated fields and rights to labor. They taught elite youth that living bodies were vessels for ancestral potency, and reinforced the power of the old over the young, and the dead over the living.

Weisskopf, Alison [111] *see Fuller, Dorian Q.*

Weissner, Polly [12] *see Ambrose, Stanley H.*

Weitkamp, Matthew and Kylie Quave (Southern Methodist University)

[5] *Evaluating Inka Ceramic Production through Horizontal Excavation (Cusco, Peru)*

Ceramic production and specialization are typically identified through examination of standardization and variation with a corresponding study of ethnographic examples. However, the Cheqoq Archaeological Project in Cusco, Peru, has identified a ceramic production workshop linked to attached specialization in the Inka period. In this poster, evidence for ceramic finishing and

firing are examined, while comparing a secure to an ambiguous context using correspondence analysis. Implications for understanding elite economies in the developing imperial heartland are also investigated considering Cheqoq's role in the royal estate. This probable workshop represents the first clear Inka core region ceramic production area identified to date.

Welch, Daniel [80] *see Lloyd, Timothy C.*

Welch, David (Int'l Archaeological Research Institute) and Judith R. McNeill (Int'l Archaeological Research Institute)

[23] *Late Prehistoric Landscape Transformations in the Phimai Region, Northeast Thailand*

Research in the Phimai region has focused on regional site surveys in diverse environmental zones. These surveys indicate expansion of settlement into new ecological zones, agricultural intensification, and growth in the number and size of settlements in the late prehistoric period. Data on late prehistoric environmental alterations and possible climatic changes from geoarchaeological investigations help explain the late prehistoric landscape, settlement pattern, and agricultural transformations. Both agricultural intensification and construction of moats around settlements may in part be responses to climate changes that affected the regional availability of water.

Welch, John (Simon Fraser University) and Neal Ferris (U Western Ontario)

[197] *Making a Sustainable Archaeology*

Our vision of activist archaeology entails shifts in motivations for, process of, and products from CRM and academic research. We argue for transitions: from intra-disciplinary drivers toward harmonization of research and societal interests; from an extractive conceptualization of archaeology toward an additive or servant culture of practice; and from a primary focus on salvage and narrowly defined research goals toward the perpetuation of cultural heritage, broadly defined. These shifts and applications of sustainable design principles outline a sustainable archaeology in which spectra of values embedded in the archaeological record are conserved and communities are recognized as the true "cultural resources."

Wells, E. Christian (University of South Florida)

[198] *Archaeological Perspectives on Surplus Capture in Contrasting Modes of Religiosity*

In this paper I examine archaeological data from New World complex societies to consider the relationship between surplus labor and religiosity. Using Harvey Whitehouse's cognitive theory of alternate modes of religiosity, which seeks to explain how people at different social scales express and experience cosmological beliefs, I suggest that we should expect to find meaningful contrasts in how surplus labor is activated between "imagistic" (behavior involving sensory arousal) and "doctrinal" (behavior involving patterned repetition) modes of religious experience. I argue that archaeologists providing deep-time perspectives on material engagement can contribute to understanding how ritual performance motivates economic change.

[223] *Discussant* **[249]** *Discussant*

Wells, E. Christian [92] see McCormick, David R. [31]
see Goodwin, Whitney A.

Wells, Helen (Cotsen Institute of Archaeology, UCLA; CalStateLA), Richard D. Ambro (Archeo-Tec) and Evelyn Seelinger

[230] *The Grass Valley Archaeological Project: Looking Back and Looking Forward*

Billy Clewlow, Richard Ambro and their Berkeley colleagues began their investigation of the Grass Valley region of central Nevada in 1969. Over the course of several seasons, powered by summer field schools, their focus changed from prehistoric settlement patterns to the documentation and interpretation of 19th century Shoshoni habitation sites. At the time there were few models for the study of historic period Native American sites, so theories and methods, some from prehistoric archaeology, were tried and abandoned. As the Grass Valley researchers slowly developed their own models, they produced significant publications and influenced the work of others. As Billy himself characterized it in 1978, the project became a series of "particularistic" studies that "will someday make a whole." More than 30 years later, it is still not a "whole," but our studies and our understanding continue to evolve.

[230] *Second Chair*

Wells, Joshua (Indiana University South Bend)

[216] *Four States of Mississippian Data: Best Practices at Work Integrating Information from Four SHPO Databases in a GIS-Structured Archaeological Atlas*

This paper details an effort to test the research capabilities of multiple archaeological databases created for the organizational functions of State Historic Preservation Offices and their partner offices in state governments. Such databases are a familiar resource to archaeologists in all sectors of the profession, and are often an initial starting point for all manner of archaeological projects. Databases for four states (Illinois, Indiana, Kentucky, and Missouri) have been combined and analyzed in a GIS with geographic and environmental data sets. Applicable best practices and results capable of informing database managers and users will be discussed.

[144] *Discussant*

Wells, Michael [124] see De Leon, Jason P.

Wendt, Carl (Cal State University - Fullerton)

[131] *Household Archaeology at the Olmec Site of Los Soldados*

Studies on the Olmec frequently focus on the ostentatious nature of the society such as large centers and monumental works of art, often ignoring the important role of smaller sites in regional hierarchies. Recent investigations at the Middle Formative site of Los Soldados help resolve this elite centered focus by collecting household and community level data at this medium sized site in the La Venta settlement system. Subsurface testing and excavations at Los Soldados revealed living surfaces and features that provide data on the organization of domestic activities and community patterning at this Middle Formative Olmec site.

[186] *Discussant*

Wendt, Carl [96] see Huerta, Edgar H.

Wernecke, D Clark (The Gault School of Archaeological Research) and Nancy Littlefield (The Gault School of Archaeological Research)

[161] *Archaeology in the Classroom: an education initiative by The Gault School of Archaeological Research*

For much of archaeology's history scientists developed hypotheses, excavated sites, analyzed the data and published with little straying from that path. Modern archaeology finds itself constructing parks, running community development projects and developing public educational programs. This broader mission serves to advance archaeology's public profile while also passing on knowledge gleaned from archaeology to a wider audience. In 2010 the GSAR, with the assistance of funding from a AIA Site Preservation Grant, launched an initiative to reach out to and assist teachers into bringing archaeology into their classroom lessons.

Werness, Maline (St. Edward's University)

[102] *Space Men: Patrons' and Artists' Use of Ceramic Space to Construct Ideology*

Patrons and artists who created the Chocholá style, a Late Classic northern Maya luxury ware, chose busts of young lords set against deeply carved backgrounds framed by scrolls more often than any other subject. The three-dimensional presentation of space developed in the ceramic medium functions on several levels. First, artists created unique sets of relationships that define the whole corpus and project a specific, Chocholá identity. Second, they literally imbedded ideological messages in pictorial constructs that revolve around the figure of the young lord, implying a spatial continuum that acknowledges, yet remains separate from, the viewer's world.

[102] *Second Chair [102] Second Organizer*

Wernke, Steven (Vanderbilt University) and Lauren Kohut (Vanderbilt University)

[227] *Spatial hegemony and domestic practice: varieties of households at an early colonial mission in the Colca Valley, Peru*

How did Spanish and indigenous Andean domestic organization and practices articulate in the early years following the decapitation of the Inka state? The first glimpse of an answer comes from the site of Malata, a terminal prehispanic village and early colonial mission in the southern Peruvian highlands. Comparison of domestic assemblages dating to the first post-conquest generation shows spatial and artifactual variation that point to corresponding differences in identity, political role, and production foci of distinct kinds of households: the probable quarters of a friar, an elite indigenous household, and a non-elite household engaged in a variety of production activities.

Wescott, Konnie (Argonne National Laboratory), Matthew Braun (Argonne National Laboratory), Bruce Verhaaren (Argonne National Laboratory) and Robin Burgess (Bureau of Land Management)

[162] *Cultural Resource Challenges of Utility-Scale Renewable Energy Development on Public Land*

Wind and solar energy are important strategies for reducing our carbon footprint, but utility-scale development of these technologies involves large land areas, potentially affecting many natural and cultural

resources. There are many issues involved in siting and approving renewable energy projects on public lands and, at the same time, preserving and protecting important resources. Aside from evaluating standard ground-disturbing impacts on archaeological sites, the BLM faces cultural resource challenges when determining areas of potential effect for large-scale, highly visible developments; assessing cumulative effects across traditional landscapes; developing effective strategies for resolving adverse effects; and implementing the consultation process efficiently.

Wesp, Julie (UC Berkeley)

[16] *Embodied Identity: examining gender through occupational analyses*

The human body is a central component for understanding the lived experiences of individuals. Throughout normal development, our bodies are continually shaped by biological as well as social factors. Repetitive activity, such as differential muscle use, stimulates the formation of new bone and changes in the cross sectional morphology. Since gender is one of the most significant social structuring principles, differential activity between genders can be suggested. Thus, it is from these socially acceptable activities that, through life, manifest themselves biologically, that one can begin to make inferences about gendered individuals and engendered activities from archaeological skeletal remains.

[16] *Second Chair* **[16]** *Second Organizer*

West, Catherine (Smithsonian Institution)

[181] *Paleoenvironmental Reconstruction in Alaska's Kodiak Archipelago*

The marine environment is central to the cultural history of the Gulf of Alaska, including the Kodiak Archipelago. However, while many culture history explanations depend on climate change, the climate history of this island region remains relatively undeveloped. The paleoenvironmental data presented here are derived from faunal collections recovered from the Kodiak Archipelago, where hunter-gatherers have deposited material for more than 7000 years. Carbon, nitrogen, and oxygen isotopes derived from fish otoliths, sea mammal bones, and shellfish are used to reconstruct marine conditions during this period, which can be used to clarify archaeological interpretation.

Wester, Carlos [156] *see Perez, JoEllen M.*

Westfall, Jowanna (Jowanna Westfall)

[163] *A GIS Analysis: Community and Agricultural Landscapes among Prehistoric Pueblos of North Central New Mexico*

Located closely together along the Manzano foothills in North Central New Mexico are six prehistoric pueblo sites. This research is created based on the conjecture that these sites were contemporaneous and were farming communally before Spanish contact. A GIS analysis will determine the potential for agricultural fields and where these fields may have been located. Based on potential agricultural field locations, a GIS cost allocation analysis will conclude if commutes from Pueblo sites to agricultural fields would have been cost efficient efforts. Conclusive research results will contribute to the further understanding of prehistoric agricultural communities in

the southwest.

Westwood, Lisa (ECORP Consulting, Inc.)

[242] *The Congressional Spyglass: an Alternative View of Historic Preservation on the Moon*

The disconnect between existing historic preservation frameworks and non-traditional cultural resources is growing rapidly. While our existing legal framework has grown horizontally to address loopholes that jeopardize our heritage, this patchwork style of state, national, and international laws, ordinances, executive orders, and guidelines has yet to expand vertically, into the heavens. This issue became more apparent with efforts to seek formal designation of the Apollo 11 lunar landing site on the Moon, known as Tranquility Base.

[242] *First Chair*

Westwood, Lisa [242] *see Ramirez, Nicole A.*

Whalen, Verity (Purdue University)

[32] *Architecture and status at a Late Nasca community: Preliminary excavations at Cocahuishcho*

I present preliminary data on excavations and architectural analysis at Cocahuishcho, a settlement in the Tierras Blancas Valley of Peru occupied from Middle Nasca through the Middle Horizon. During Late Nasca, there was a decentralization of regional power and an aggregation of people into much larger settlements. The results of test excavations in five sectors of Cocahuishcho suggest differential access to high status and exotic goods during Late Nasca. Through further analysis of architecture and access patterns, I evaluate the degree of status distinction present at Cocahuishcho, and ultimately, the nature of Late Nasca leadership.

Whalen, Verity [267] *see Van Gijsegheem, Hendrik*

Whallon, Robert [6] *see White, Andrew A.*

Wheelbarger, Linda (San Juan College)

[219] *The Point Community: Overview of Research at Four Puebloan Sites in the Middle San Juan Region of Northwestern New Mexico*

San Juan College has sponsored archaeological research at four sites on the B-Square Ranch. The Point Community sites are near Farmington, NM and date to the Chacoan and San Juan time periods, A.D. 850-1300. Field schools have been held at the Tommy Site, a small pueblo, and the Point Site, a great house terraced into the southern bank of the San Juan River, while limited testing and remote sensing were conducted at the Needle Rock and Mine Canyon sites. I will summarize recent research conducted at the Point Community as well as information collected from ranch owner Tommy Bolack.

[219] *First Chair*

Wheelbarger, Linda [219] *see Centra, Alexandria E.*

Wheeler, Charles [61] *see Cunnar, Geoffrey E.*

Wheeler, Jessica (Tulane University)

[28] *Cave and Cenote Iconography in the Maya Codices*

This paper will examine the iconography and text of related to caves and cenotes in the Maya codices to understand the artifacts from these contexts and their

use by Maya peoples during the Postclassic. An analysis of the iconography and text will be supported by examining the data excavations of caves and cenotes produced. Archaeologists have developed interpretations of the data excavated from caves and cenotes. Examining documents produced in the same cultural tradition will critically evaluate these interpretations.

Whelan, Carly (UC Davis)

[57] *Prehistoric Patterns of Mobility and Trade in the Sierra Nevada Foothills*

The results of lithic raw material sourcing analysis can be used to reconstruct prehistoric mobility and trade patterns. Using X-ray fluorescence (XRF) spectrometry, I have sourced obsidian artifacts from ten prehistoric sites that span more than 5000 years of hunter-gatherer occupation in the western Sierra Nevada foothills of California. The results of the analysis reveal temporal and spatial differences among the sites in the obsidian sources represented in their assemblages. This suggests that the people of the region underwent a diachronic change in mobility pattern and increased their participation in obsidian trade networks with groups east of the Sierra Nevada.

Whelan, Carly [62] see Arpaia, Angela

Whistler, Emily (California State University Los Angeles), Jennie Allen (California State University, Los Angeles), William Kendig (California State University, Los Angeles), Renè Vellanoweth (California State University, Los Angeles) and Lisa Thomas-Barnett (Naval Air Warfare Center Weapons Division, Point Mugu, CA)

[105] *Preliminary Analysis of Middle Holocene Avian Fauna Remains from San Nicolas Island, California*
This poster focuses on avian fauna recovered from CA-SNI-40, a dune site located on the west end of the island. The remains were found well-preserved in articulated and dismembered contexts and were represented by a variety of large, medium and small avian species, including an albatross (*Diomedea* spp.) no longer residing on the island. Our analysis included identifying and quantifying the remains, direct AMS radiocarbon dating of bone, breeding behavior and ecology, and low-power microscopy to examine butchery marks and other modifications. Our findings will build upon previous accounts regarding the evolution of bird hunting on the California Channel Islands.

Whitaker, Adrian (Far Western Anthropological Research Group, Inc.)

[263] *Short-term Ecological Consequences of Initial Human Occupation of the Punta Gorda Rockshelter*
The Punta Gorda Rockshelter on the north coast of California contained a narrow 2.5 meter tall stratified shell midden deposit dating to a tight time span between 670 and 610 cal BP. The age of the site places it at the beginning of the California Athabaskan spread into Humboldt County—the first intensive use of coastal environments on record. Therefore, the deposit provides not only a glimpse into the historical ecology of the north coast of California, but data from the site document the initial effects of intensive human foraging in a previously lightly-occupied coastal strand.

Whitaker, Adrian [263] see Byrd, Brian F.

Whitaker, Jason (The University of Texas at San Antonio)

[34] *Ancient Maya Household Economy: An Example from Operation 11 at the Medicinal Trail Site in Northwest Belize*

Households are fundamental components of both past and present societies. The study of archaeological households enables investigators to situate the micro-scale of everyday life within larger economic and political contexts. This poster examines the economic organization of a single household (Operation 11) at the ancient Maya Medicinal Trail Site. Analysis of these remains shows that the primary economic activity of this ancient household was agriculture. Secondary economic activities could not be definitively discerned. More importantly, the results of this investigation provide information concerning community-level socio-economic integration and household participation in larger economic networks.

Whitby, Wendy (University of Central Lancashire, UK)

[260] *Cache Caves: A New Perspective on the Interior Landscape of South-central California*

The interior region of south-central California is a landscape of sandstone canyons, oak groves, and grassland potreritos. Cache caves, hidden throughout this landscape, contain an exceptional collection of artifacts such as basketry and feather skirts. These sites appear to have functioned in a number of ways, in collection and storage of raw materials, in storage/concealment of ceremonial and ritual objects, and in association with rock-art activities. Storage would have been critical for complex hunter-gatherers inhabiting this region and this paper will discuss how indigenous caching and storage were inextricably linked with the unique interior landscape.

White, AJ (University of California, Los Angeles) and Jason Theuer (Petrified Forest National Park)

[134] *Motivations Behind Stone Choice in Groundstone at Petrified Forest National Park*

Much work has been done on the use of groundstone in the American Southwest, however little emphasis has been placed on the choice of source material. This study integrates groundstone analysis with geologic sourcing by studying manos and metates at Petrified Forest National Park. A narrow bed of conglomerate sandstone outcrops in a small number of highly localized areas within the park. This stone is used as a choice material in much of the groundstone at the park, indicating motivation to transport this material over large distances. This research shows how groundstone analysis can be supplemented by geologic sourcing.

White, Andrew (University of Michigan) and Robert Whallon (University of Michigan)

[6] *Conjoining Lithic Artifacts as Indicators of Site Occupational History at Havelte H1*

Havelte H1 is a small, Mesolithic workshop/habitation site in the Netherlands. An analysis of conjoins identified among the ca. 3,700 pieces of chipped stone is used to construct a possible occupational history of the site. GIS and statistical methods are employed to attempt to

discriminate artifact movements related to purposeful habitation activities from artifact movements related to unintentional disturbances. Patterns in the composition and spatial distribution of groups of conjoining artifacts suggest that the movement of tools, cores, and debris following knapping can be attributed to different phases of site occupation (initial, exploitation, and abandonment).

White, Andrew [17] *see* Lemke, Ashley K.

White, Chantel (Boston University) and China Shelton (Framingham State University)

[111] *Construction and Application of the Hand-Pump Flotation System*

The hand-pump flotation system is a new method for recovering charred macrobotanical remains from archaeological sediments. This system uses a manual bilge pump to circulate water through the tank and separate the light and heavy fractions. It offers the operator more control than large gasoline-powered pumps and is particularly appropriate for sites with very fragile botanical remains. In this paper, construction of the tank at the site of Beisamoun, Israel, is detailed, along with a discussion of hand-pump systems utilized in North and Central America, the Aegean, Europe, and Southwest Asia, and design modifications for varying site and soil conditions.

White, Chantel [169] *see* Lindberg, Kelly

White, Christine (The University of Western Ontario), Michael Spence (The University of Western Ontario) and Fred Longstaffe (The University of Western Ontario)

[16] *Gender and Isotopic Anthropology: Moving Beyond Diet and Status*

We use previously published oxygen isotope data from Teotihuacan, Mexico, to demonstrate the usefulness of residential histories in reconstructing gendered behavior. Teotihuacan was a cosmopolitan city that depended on immigration for maintenance and expansion of its population. We compare marriage patterns, economic and social roles of women living in neighborhoods of differing ethnic composition and examine their relationship to social identity and the needs of the state. It may not have been uncommon for women to have valued social roles and/or high status. At Tlalotlacan, a Zapotec enclave, the maintenance of ethnic identity might have been attributed largely to women, who were gatekeepers of enculturation and frequently moved across the landscape, even while pregnant. At the Merchants' Barrio, a residential collection of traders who had origins in several parts of Mesoamerica, it is apparent that some immigrant women were able to maintain or achieve high status.

[56] *Discussant*

White, Christine [255] *see* Webb, Emily C. **[56]** *see* Donis, Alicia E. **[21]** *see* Spence, Michael W. **[35]** *see* Szpak, Paul

White, Christine D [49] *see* Hewitt, Barbara R.

White, Devin [38] *see* Barber, Sarah B.

White, Paul (University of Alaska Anchorage)

[166] *Timbisha Shoshone Historic Landscapes Project: A Negotiation of Tribal and National Park "Scapes"*

An archaeological survey of an historic pinyon camp in Death Valley, California, in May 2010, sought to extend cooperative management efforts between the Timbisha Shoshone tribe and the National Park Service (NPS). Designed in the interests of ongoing resource protection efforts and desires for cultural preservation, this pilot project came to meet two seemingly contradictory ends, 1) the creation of a detailed archaeological database shared between the tribe and the NPS and, 2), the documentation of site-specific, sometimes artifact-specific, knowledge to remain with the tribe. This paper discusses findings from the collaborative research process.

Whitehead, William (Ripon College)

[35] *Paleoethnobotany at Cerro Mejia, a Middle Horizon site the Moquegua, Peru region*

The botanical remains from Cerro Mejia will be presented, showing the species, quantities, distribution across the site. Site formation processes, behavioural patterns, and local activities combine to produce an assemblage that is much different than the other sites in the region that have been investigated to date. The analysis and collection methods will be highlighted showing the power and utility of performing intensive, digital documentation of museum collections. The final analysis of Cerro Mejia will complement and be compared to other Middle Horizon sites from Peru and Bolivia.

Whitley, Catrina (Office of Archaeological Studies, Museum of NM)

[37] *Ash And Smoke: Classic And Coalition Mortuary Ritual In The Northern Rio Grande*

Analysis of Taos Valley mortuary practices (A.D. 1200-1320) revealed distinct methods for burying the deceased. This paper explores variation between Taos Valley Coalition Period mortuary practices and Northern Rio Grande Classic Period mortuary practices, addressing issues of mortuary ritual continuity and change during this period of social upheaval. Since mortuary ritual is conservative, alterations are rare and migrating groups would probably have continued these important traditions in their new communities. Additionally, this study discusses the efficacy of mortuary practices and ritual in the Northern Rio Grande as a means to identify immigrants.

Whitley, David (ASM Affiliates, Inc.)

[230] *Matters of Fact and Matters of Fiction: Epistemology and Ontology in the Use of Indigenous Knowledge for Rock Art Interpretation*

Few research topics have been more controversial than rock art interpretation. Although traditionally discussed in empirical terms, the use of indigenous knowledge in rock art interpretation involves epistemological, ontological and methodological commitments that are usually overlooked. Interpretations of the attribution of Great Basin rock art to the actions of spirits illustrate this point. Denial of the relevance of this attribution assumes that religious statements are literal in meaning, reflecting a fundamentalist view of religion. Global ethnography indicates instead that religious statements commonly

assume spiritual causality, and over a dozen Native American tribes attribute the origin of rock art to spirits.

Whitley, David [48] *see Whitley, Tamara K.*

Whitley, Tamara (Bureau of Land Management) and David Whitley (ASM Affiliates, Inc.)

[48] *Visions Past and Present in Native California*
Few aspects of California archaeology are more remarkable, or more central to Native American consultation, than its rock art. Once thought entirely prehistoric and therefore disconnected from ethnographic peoples, recent studies instead demonstrate continuities in belief and the continued relevance of these sites to contemporary tribes. While archaeological interpretations of the art change periodically, Native California commentary has been consistent for over a century. Case studies from eastern and south-central California, and the Sierra Nevada, illustrate these continuities in belief and ritual systems, and their relevance to site management.

Whitley, Thomas (Brockington and Associates, Inc.)

[64] *Diet and the Landscape: Modeling the Prehistoric Economies of the Georgia Coast (4500 to 300 BP)*.
Using a combination of 15 environmental variables and 37 forage categories in 11 counties of Coastal Georgia, this study covers nearly 2 million hectares and represents a series of GIS models; for habitats, available calories, and returned calories. The resultant surfaces were used to develop both predictive and interpretive models of prehistoric economics, and represent both the diachronic and spatial distribution of potential energy sources in the environment. The results allow a great deal of insight into our understanding of how forage categories were utilized, competed for, and how they contributed to the surplus energy available for non-subsistence behaviors.

Whitley, Thomas [80] *see Majewski, Teresita*

Whitlow, Raymond (SUNY Buffalo)

[115] *The Geography of Cucuteni-Arșud sites and the role of the Eastern Carpathian Mountains in the Romanian Eneolithic*

Mountains present certain geographic challenges and affordances to the populations living near or among them. During the Eneolithic in Romania, the Cucuteni-Arșud culture straddled the Eastern Carpathian Mountains, though the majority of sites were located outside of the mountains proper. The single known exception is the Eneolithic settlement at Pauleni, which is located at a higher elevation and deeper in the foothills than any neighboring Arșud or Cucuteni settlement. Through the use of GIS models, the location and local landscape of Pauleni is compared with nearby Arșud and Cucuteni settlements, and the importance of proximity to mountain passes is considered.

Whitridge, Peter (Memorial University of Newfoundland)

[153] *On the track of the track: human and animal paths in the Arctic*

Maps, including electronic ones, represent powerful tools for manipulating spatial information. They are anticipated, archaeologically, by actual trails and roads, which are

also deliberate materializations of travel routes and spatial knowledge, and impose a similarly abstract, cartographic sensibility on the landscape. Trails, however, are not a human invention. The North American Arctic has few paths and fewer roads, but is nonetheless dissected by animal travel routes, some deeply incised by millennia of animal travel, and many also traveled by human hunters. The overlap between human and animal trail creation and use invites us to re-problematize the human-animal divide.

Whittaker, John (Grinnell College) [84] *Discussant*

Whittington, Stephen (Wake Forest University)

[51] *Intersections of Archaeology and History at Teozacoalco in the Mixteca Alta*

The dynastic history of Teozacoalco appears in various Mixtec codices and, most importantly, on the Mapa de Teozacoalco from the 1570s. Besides identifying royal couples and their offspring, these documents also provide clues about Teozacoalco's relationship with other Mixtec polities and the Spanish, its physical movement from a mountaintop to its present location, and the roles outsiders played in founding and maintaining its dynasties. Historical information from documents and archaeological data from surveys and excavations complement each other and help to expose Teozacoalco's importance within the complex political and geographic landscape of the Mixteca Alta.

Whittle, Alasdair (Cardiff University), Penny Bickle (Cardiff University), Alex Bentley (Durham University), Robert Hedges (Oxford University) and Linda Fibiger (Cardiff University)

[255] *Diversity in LBK lifeways*

Archaeological science is at its most powerful when carefully integrated with both evidence and theorised questions. A three-year project is investigating a range of isotopes (strontium, carbon, nitrogen, calcium and oxygen) from humans and animals, and selected aspects of osteology, to incorporate the results with a detailed re-consideration of their archaeological context. The main objectives are to explore patterns of diet, health and movement and to facilitate the investigation of diverse lifeways in the central European LBK (broadly, in the second half of the sixth millennium cal BC). Case studies include the cemeteries of Aiterhofen, Germany, and Nitra, Slovakia.

Wiberg, Randy [194] *see Guidara, Andrea L [194]* *see Griffin, Mark [194]* *see Marks, Jennifer L.*

Wichlacz, Caitlin (Washington State University) and Andrew Duff (Washington State University)

[135] *Survey of Three Pueblo II Community Centers in West-Central New Mexico*

Full-coverage survey of contiguous blocks surrounding the Pueblo II (ca. A.D. 1050-1130) Great Houses of Cox Ranch and Cerro Pomo Pueblos, and adjacent to Largo Gap, has identified sizable contemporaneous occupations that hold great potential for understanding local community dynamics. These survey areas also offer records of both Archaic mesa top activity and historic-era occupations. Here, we present the results of the 2009 and 2010 survey seasons in the context of the previous work in this area.

Wiederhold, Jim and Charlotte Pevny (R. Christopher Goodwin & Associates, Inc)

[59] *Toward the Standardization of Lithic Microwear Analysis: Fundamental Theories and Principles*

Interpretations of tool use must be based on reliable data and successful microwear analyses must incorporate concepts fundamental to lithic studies. Site context, taphonomy, fracture mechanics, and experimental research provide a foundation to explore actions associated with tool use and post-depositional processes. An analytical approach including low and high magnifications and the principles of tribology offer a means to detect microwear and determine tool motion. These "basics" served as the cornerstone of analyses of lithic material recovered from pre-Clovis contexts at the Buttermilk Creek/Friedkin site in Texas, allowing identification of cultural use and inferences about kinematic motion and worked material.

Wiemann, Michael [265] *see McKillop, Heather*

Wieser, Anna (University of Arkansas)

[26] *Geoarchaeology of Former Marshland in the Lower Orontes River Valley, Syria*

Geoarchaeological research at Tell Qarqur indicates a complex and changing relationship between humans and the environment in the lower Orontes River valley of northwestern Syria. Examination of satellite imagery and historical maps reveals the location of an Orontes paleochannel and former marshland, respectively. Augering of these sediments in correlation with GIS mapping of archaeological sites in the valley contributes to the reconstruction of depositional environments. Results demonstrate the presence of a seasonal marsh in the valley prior to channeling of the river in the 1950s as well as variation in the location and size of the marsh through time.

Wiewall, Darcy (Antelope Valley College) and Linda Howie (The University of Western Ontario)

[190] *New Insights on the Mercantile Economy at Lamanai, Belize during the Terminal Postclassic to Early Colonial Periods*

The Postclassic period in the Maya area has been characterized as a time of the development of a commercial-oriented society with expanded international markets and maritime trade network. A number of Lowland sites have identified a trend toward increasing uniformity in material assemblages reflecting the growth of mercantile market activity. In direct contrast to this trend of uniformity, investigation of residential areas at Lamanai identifies a general pattern of continued heterogeneity. Drawing from microscopic analysis of the ceramics, evidence of copper metallurgy, architecture and lithic material, this paper provides insight into local and regional patterns economic activity and interaction.

Wiewel, Rebecca (University of Arkansas)

[187] *Regional Interaction in the Central Arkansas River Valley: Stylistic and Compositional Analysis of Carden Bottoms Phase Ceramics*

The ongoing CARV project seeks to elucidate the regional dynamics of Carden Bottoms phase communities living in the central Arkansas River valley. This paper discusses the results of stylistic analyses of

Carden Bottoms phase ceramics and planned provenance studies, utilizing neutron activation analysis. Stylistic analyses have identified three broad categories of wares: local, imported (Mississippian and Caddoan), and hybrid wares produced locally using design elements from other ceramic traditions. Compositional analysis will yield data that can be used to explore the degree of regional interaction present at Carden Bottoms sites and characterize the nature, strength, and direction of these interactions.

Wigen, Rebecca [176] *see Endo, Naoko*

Wigley, Sarah M. [165] *see Figueroa, Antonia L.*

Wiktorowicz, and Conner [4] *see Lindsay, Ian*

Wilcox, David (Museum of Northern Arizona)

[18] *Microcosm and Macrocosm in Southwestern Archaeology*

For any social system one can look inward to explicate the processes that shape its microcosm and affect its trajectory, or one can look at it from the outside to investigate how its macrocosm shapes it and affects its trajectory. Better yet, one can do both, and on multiple scales of internal/external interactions. The history of Southwestern archaeology is briefly examined from this perspective and suggestions for future applications are made.

Wilde, James (AFCEE) [118] *Discussant*

Wilke, Sacha (University of British Columbia)

[183] *There's a Gadget for that! Examining changes in fishing tools at El Rayo.*

The transition between the Bagaces and Sapoa periods in Nicaraguan pre-history relates to important changes in the material culture, which some suggest are explained by the immigration of a new population to the area. The extent and type of interaction is unclear. This paper will examine the continuity and changes of ceramic and bone tools seen through this transition period, at the site of El Rayo. Special attention will be given to the three style variations of net sinkers found at the site and the use of bone fish hooks throughout time.

Wilkins, Jayne

[2] *Blade Production at the site of Kathu Pan 1, South Africa during the Middle Pleistocene*

Strata 4a at the site of Kathu Pan 1 in central South Africa has yielded a rich Middle Pleistocene blade assemblage radiometrically dated to 500 ka. Presented here are the results of a technological analysis of the lithic component of strata 4a, which has been attributed to the Fauresmith industry. The chaînes opératoires of blade production at Kathu Pan are compared and contrasted with the published analyses of other Earlier and Middle Stone Age blade assemblages, including the 500 ka assemblage at Kapthurin Formation, Kenya and the Howiesons Poort assemblages at Rose Cottage Cave and Klasies River, South Africa.

Wilkins, Jayne [108] *see Oestmo, Simen*

Wilkinson, Darryl (Columbia University) and Severin Fowles (Barnard College)

[211] Roman Catholic Rock Art Traditions of Northern New Mexico

Although the primary focus of rock art research in northern New Mexico has been on Puebloan and Archaic material, the area also offers a rich body of colonial era petroglyphs that are strongly influenced by Roman Catholic iconographies. This poster presents the findings of a recent survey along the Rio Grande gorge that seeks to better understand the local Catholic rock art tradition and the sacred landscape which framed it. As the results of this research suggest, it is increasingly difficult to sustain a strict dichotomy between Catholic and Native American rock art traditions in the region.

Wilkinson, K. [114] *see Adler, Daniel S.*

Wilkinson, Patrick (University of Arkansas) and Marieka Arksey (British Museum)

[124] *Pachychilus* as a Sub-local Climate Proxy in the Southern Maya Lowlands

The ubiquitous Jute snail (*Pachychilus*) presents archaeologists and paleo-climatologist in the Maya Lowlands with a unique sub-local climate proxy. Because of the presence of Jute shells in both construction fill and in ceremonial context, it should be possible to track local climate change and to determine the correlation, if any, with site abandonment. By analyzing the ratio of stable oxygen isotopes found in the leading edges of the shells, it is possible to chart changes in water temperature in the Belize River, the natural habitat for the snails, over the span of occupation of sites in the valley. These temperature changes in the water indicate lower water levels in the river, increased ambient temperature, or both.

Wilkinson, Patrick [208] *See Arksey, Marieka*

Wille, Sarah (The Field Museum of Natural History)

[268] *Discussant*

Willems, Willem (Faculty of Archaeology, Leiden University)

[254] *Problems with preservation in situ*

Preservation in situ has developed into a central premise of archaeological resource management around the globe. This contribution examines the reasons behind this dogma and questions some of them.

[110] *Discussant*

Willerslev, Eske [262] *see Jenkins, Dennis L. [11]* *see Johnson, John R.*

Wiley, P (Chico State) and Richard L. Jantz (University of Tennessee)

[77] *Ishi in Two Canonical Axes: Morphometric Assessment of His Cephalic Dimensions*

Ishi has been held forth as the last pure Native North American. As such he was interviewed for ethnographic, linguistic and material culture information that he, the last Yahi, possessed. Recent reassessments, however, indicate outside influences on him, including presence of external ideas, words and material culture-- if not a different tribal affiliation. To examine this interpretation, we compare Ishi's face and head measurements with those of other Northern California Natives. While documenting much variation within Native Californians,

our results support the more traditional identification of Ishi as a member of a Hokan- speaking rather than a Penutian- speaking group.

Williams, David (University of Colorado at Boulder)

[38] *Identifying Change Through Time: Technological, Functional, and Exchange Analysis of Chipped Stone Artifacts from Coastal Oaxaca, Mexico*

This paper discusses the results of the analysis of over 5,000 obsidian artifacts from the Lower Rio Verde Valley, Oaxaca, Mexico. Previous lithic studies in the region have been minimal. This pilot study applies XRF sourcing, differences in manufacturing style and technique, and microwear analysis to better understand the changing political and social climates between the Early Formative (1800-800 BC) and Late Postclassic (AD 900-1522). Analyzed obsidian from over one dozen sites in the Lower Verde allows for a more complete archaeological understanding of domestic and political economies, trade networks, social connections, and daily activities in the region.

Williams, Howard (University of Chester)

[226] *Burn Up or Fade Away? The Context of Cremation in Early Medieval Europe*

For early medieval north-west Europe and Scandinavia, cremation practices can be viewed as technologies of remembrance employed to commemorate by fiery transformation. Cremation was variously and selectively employed in mortuary contexts alongside other modes for disposing of the dead prior to and during conversion to Christianity. This paper examines archaeological case studies from Britain and southern Scandinavia showing how cremation's social meaning and commemorative efficacy shifted through fluctuating contextual association with other disposal methods.

Williams, James (University of Pittsburgh)

[54] *Regional Survey and Communities in China*

The spatial characteristics of mobile communities present theoretical and methodological challenges. Modes of analyses can be tailored to address this. The methodologies and analyses presented will explore how to address the variation of community composition and the nature of communities. To explore these concepts relating to the nature of communities the paper will utilize the case of the Zhangwu region of Liaoning China in fieldwork proposed to begin in 2011. The conditions of the Zhangwu region require that a variety of community compositions be understood.

[54] *Second Chair* [54] *Second Organizer*

Williams, Justin (Washington State University)

[257] *Platform Size and Flake Morphology: the Effects of Nodule Shape*

It has been argued that flake size is directly related to the size of the platform of the flake. Many factors which affect this relationship have not been tested. These factors include: the type of hammer used, and the presence, location and size of previous flake scars. Several nodules were reduced by a single knapper in an effort to test the effects of the various factors. When previous nodule flake scars and type of hammer used are considered, the strength of the relationship between platform size and flake size is comparatively weaker.

[257] *First Chair*

Williams, Justin [257] *see McIlraith, Erin R.*

Williams, Louise [176] *see Endo, Naoko*

Williams, Patrick (Chicago Field Museum), John Janusek (Vanderbilt University) and Carlos Lemuz (Sociedad de Arqueología de La Paz, Bolivia)
[267] *Building Taypikala: Changing Patterns of Stone Procurement and the Production of Tiwanaku Monumentality*

Transformations in stone mining and production for the monumental center of Tiwanaku (600-1000 AD) provides insights into processes of political expansion and the emergence of state integrative strategies during the Andean Middle Horizon. We review evidence for the procurement of monolithic stones from sandstone quarries in the local Kimsachata Mountains, and highlight new sourcing data for the acquisition of andesite and other igneous stone from quarries in the broader circum-Titicaca Basin. Chronological changes in the acquisition of stone reveal increasingly broad spheres of procurement through time, with exotic igneous sources becoming pronounced later in Tiwanaku's hegemony.

Williams, Ryan [142] *see Arnold, Dean E.*

Williams, Sarah (Indiana University of Pennsylvania)
[180] *Prehistoric Deer Bones Tell Their Story: Investigating Deer and Human Behavior through Stable Carbon Isotope Analysis*

Stable carbon isotopic analysis can provide insight into hunting strategies once held by the Ancestral Pueblo located in the Dolores valley of southwestern Colorado. Mule deer (*Odocoileus hemionus*) is abundant in the faunal assemblages, but how it was hunted is less clear. Acquisitions during logistical hunts or through hunting in gardens both have been proposed. Current examination of stable carbon isotopes of deer remains clarifies how many C3 versus C4 plants were in the deer diet. Over time a high C4 signature in the isotopes indicates garden hunting while a high C3 indicates logistical hunting in the Dolores sequence.

Williams, Veronica (CONICET- UBA) and Maria B. Cremonte (CONICET/IDGYM)

[68] *Social Landscape During Inca Domination in Northwest Argentina*

Among the ways that the Inca Empire adopted to rule its territory included actions into ideological, economic, and political sphere which explain in part the diversity and disparity that the state presence reached. Constructions like roads, tampos, pukaras, administrative centers, storage buildings, agricultural works, among others, were common in the entire annexed areas, but it is evident that its architecture, dimensions, monumentality and spatial density show contrasting regional differences. New evidence regarding Inca occupation in Northwest Argentina shows different situations along the period of Inca conquest and domination itself.

Williamson, Andrew [87] *see Spencer, Alan C.*

Williamson, Ronald (Archaeological Services Inc.)

[55] *Discussant*

Willis, Lauren (University of Oregon) and Jon Erlandson (University of Oregon)

[263] *The Nutritional Composition of Edible Native Plants on Santa Rosa Island, California*

With the recent removal of cattle and major reductions of deer and elk populations, Santa Rosa Island has seen a significant recovery of native plant populations. Unfortunately, our knowledge of how people utilized the island's plant resources throughout the Holocene is relatively limited. We present nutritional information for a variety of edible native plants, data that contributes to our understanding of how Channel Islanders may have supplemented a diet rich in marine foods. Our research has implications for subsistence, trade, and perceptions of the supposed marginality of the Northern Channel Islands and their resources.

Willis, Mark [15] *see Brown, David O.*

Willoughby, Pamela (University of Alberta)

[109] *The Archaeology of Iringa, southern Tanzania: An Introduction*

The Iringa Region of southern Tanzania is yielding a long archaeological sequence which includes the Acheulean, Middle and Later Stone Age, Iron Age and historic periods. This poster introduces Iringa and the current research of members of the Iringa Region Archaeological Project. Their work focuses on the archaeology of early modern humans in this important region. Individual research projects include studies of lithic typology and technology, the bioarchaeology of human skeletal remains, zooarchaeological analysis, the evolution of symbolic behaviour, as well as initial attempts at chronometric dating.

[109] *First Chair*

Willoughby, Pamela [109] *see Skinner, Anne*

Wills, Chip (University of New Mexico)

[53] *Reconsidering the Pueblo Alto Community: A Geospatial Perspective*

New pedestrian survey in the vicinity of Pueblo Alto in Chaco Canyon, New Mexico, in conjunction with airborne and terrestrial Lidar imagery, provides the basis for a reconstruction that differs in significant ways from earlier interpretations of settlement patterns in Chaco.

Wilson, Andrew [236] *see Glasgow, Hillary J.*

Wilson, Diane (A M Wilson Associates)

[255] *A Synthesis of Dietary Stable Isotope Values from the Caddo Culture Region*

While stable isotope studies provide a direct measure of maize consumption, they have not provided a simplistic picture of maize agricultural economies. This paper examines the process of maize agricultural intensification through stable isotope analysis among the Caddo. Stable carbon isotope values show maize was present in the earliest component of the Caddo archaeological record and that its use increased through time. Variability was a key component of the dietary regime of the Caddo and may have been characteristic of agricultural economies throughout the greater Mississippi Valley. For the Caddo, dietary heterogeneity is seen among regions, sites, and

within sites.

Wilson, Gregory (UC-Santa Barbara)

[229] *Post-Cahokian Contact in the Central Illinois River Valley*

Recent research in the upper Mississippi Valley has generated important new insight into Cahokia's long-distance historical entanglements. It is now clear that Cahokian contact was a brief but intense phenomenon in several portions of the northern Midwest. Less understood are the impacts of contact in the decades following the termination of Cahokia's interaction with its northern neighbors. This study examines this issue through an analysis of late 12th century and early 13th century archaeological data from the Central Illinois River Valley.

Wilson, Ken

[259] *Hay Ranch Water Extraction Delivery System*

The construction of a pipeline to deliver water for injection into an existing geothermal aquifer was controversial because of tribal concerns about the potential to adversely affect the spiritual values and use of Coso Hot Springs, which is listed on the National Register of Historic Places. The undertaking posed a number of interesting challenges; including whether it was reasonable to include the Coso Hot Springs in the area of potential effect, even though the Springs are nearly two miles away from the nearest area of ground disturbing activities.

[112] *Discussant*

Wilson, Monica

[33] *Something old, something new: Differential GPS technology and the mapping of ancient architectural features*

Differential Global Positioning Systems (DGPS) technology is a tool that lends its application to a variety of fields, including Archaeology. I was able to compare the effectiveness of DGPS technology to a Total Station unit while assisting the Pisanay Proyecto Arqueologico team with mapping architectural features in Pisanay, Peru. Variations in the locations of architectural features collected by both units were measured using ArcMap 9. The DGPS data was accurate to less than a meter and variation between data sets were negligible. This study supports the potential for DGPS to serve as a cost-effective alternative for mapping site features.

Wilson, Stacie (AECOM)

[50] *Mapping and tracking trails: GIS and the BLM national historic trails project*

Conducting cultural resources inventories, cultural landscape studies, and visual studies for over 600 miles of high priority trail segments for the National Historic Trails inventory project requires significant archival and background research. A GIS database and interactive website were developed to archive the results of background research, catalog the sources analyzed, and to record, organize, and interpret all project-related survey information. These products will serve as part of the final deliverable to BLM to assist in the management and preservation of the trail resources.

[50] *Second Organizer*

Windes, Thomas and Peter McKenna

[99] *Renovations at the San Augustin Church, Isleta Pueblo, New Mexico*

Major renovations of the church at Isleta Pueblo occurred in 2010, which provided access to an array of structural wood elements used in the building of the church. The church has a long history, first being built in the early 1600s as a Spanish Mission Church, destroyed during the Pueblo Revolt of 1680, rebuilt in the early 1700s, and undergoing many architectural changes in the 19th and 20th centuries. This project provides an unique opportunity through dendrochronology and structural element analyses to re-evaluate the church's historical record and to provide insights into the work of the laborers and priests who built and used it.

Windes, Thomas [99] see McKenna, Peter J.

Windingstad, Jason (Statistical Research, Inc.)

[80] *The impact of dam construction on fluvial processes and cultural resources; examples from three ephemeral drainages in southern Arizona*

Dam construction in deserts alters alluvial processes and archaeological context in riparian zones. As part of a U.S. Army Corps of Engineers ARRA funded project, Statistical Research Inc. (SRI) completed geoarchaeological investigations at Alamo Lake (Bill Williams River), Painted Rock Reservoir (Gila River), and the Whitlow Ranch Flood Control Basin (Queen Creek). SRI regionally examined ephemeral stream response to dam construction using historic aerial photos, satellite imagery, and geomorphic reconnaissance. Results include post-dam fluvial surfaces overlying pre-dam landforms and archaeological resources up to 0.5 km upstream of reservoir backwaters, and post-dam landform formation has impacted site visibility and integrity.

Winemiller, Terance [265] see McKillop, Heather

Wingate, Ernest [57] see Gassaway, Linn

Wingfield, Laura

[183] *Decoding Nicoyan Body Decoration: From Spirals to Mat-Weave Patterns on Nicaraguan and Costa Rican Effigies and Stamps, c. 500 BCE-1522 CE*

Ancient Nicoyans did not have a writing system, but they did express themselves through body decoration. From the earliest period, Nicoyans appear to have experimented with free-form body painting of spirals, circles, and some animals. By the Florescent period, these designs became more regulated with the use of stamps in patterns of crosses, waves, animals, and humans. In the Later periods, after the migration of Central Mexican peoples into the region, some earlier Nicoyan designs were still present, but new stamped mat-weave patterns were introduced. What does the latest archaeological evidence tell us about Nicoyan body art?

Winker, Rebecca (Northern Illinois University)

[163] *Analysis of Archaeological Site Distribution in the Huaura Valley*

This project analyzes archaeological site distribution in the Huaura Valley, Peru. Survey data are explored to discover whether sites identified in past surveys are the same as those in recent surveys. Surveys of the Huaura

Valley were conducted in the 1970s by a Peruvian team and in 2005 by Ruiz and Nelson. Both surveys mapped sites ranging from the Preceramic to the Late Horizon. The 1970s survey map was converted to a digital image and georeferenced. The 2005 survey contained GPS coordinates for identified sites. The maps were evaluated for differences using ArcView software and comparison to historic air photos.

Winkler, Daniel (University of Wisconsin-Milwaukee)

[96] *Plainview Technology and Raw Material Conservation in the Western Great Lakes*

The focus of this paper is human use of Plainview lithic technology as represented by lithic debitage and tools from two sites in southern Wisconsin. This work takes an assemblage approach to understanding the structure of the lithic economy in use at the site, in order to examine mobility, site structure, household makeup, and ritual in the western Great Lakes during the early Holocene (circa 8600 BP). The study is focused on the structure of the Plainview lithic economies, examining tools and debitage to determine how groups in the western Great Lakes created, modified, and maintained their tool kits.

[96] *First Chair*

Winkley, Marilyn (University of Wisconsin at Whitewater) and Peter Killoran (UW-Whitewater)

[33] *Forensic Facial Reconstructions from Pisanay, Peru*

Digital photographs of skulls from Pisanay, Sihuas Valley, Peru were used to create facial reconstructions. The TPS Dig program by Rohlf (SUNY Stony Brook) was used to mark standard points representing tissue depths on the digital photograph of the skull. The skulls then were artistically rendered by hand using tracing paper over the digitized images to create a living profile. Archaeological materials from the site and other period textiles were used to inform the representation of hair and clothing.

Winter Jr., Eugene C.. [196] *see* Hamilton, Nathan D.

Winterhalder, Bruce [123] *see* Jazwa, Christopher S.

Witt, David (SUNY Buffalo)

[219] *Analysis and Comparison of Middle San Juan Chipped Lithics*

In 2006 and 2007, the Totah Archaeological Project excavated a room block at the Point Site, a great house community located on the San Juan River outside Farmington, NM. The lithics from the room block were analyzed according to raw material, reduction strategy, and use wear. They were compared to the lithic artifacts from Sterling Site and Fort Site, neighboring great house communities along the San Juan River, as well as Salmon Pueblo, a Chacoan Outlier located approximately four miles to the east. Implications of observed differences in lithic industry and utilization between the four communities will be discussed.

[219] *Second Chair*

Wobst, H Martin (University of Massachusetts) [1]

Discussant [252] Discussant

Wohlgemuth, Eric (Far Western Anthropological Research Group, Inc.)

[256] *Change and Continuity in Prehistoric Plant*

Resource Use along the Lower Sacramento River
Macrobotanical data from four sites along the lower Sacramento River provide an unprecedented, near-continuous fine-grained record from 2500-300 BP, and are used to evaluate effects of climate change and cultural historical transitions previously posited as key shifts in the archaeological record. Macrobotanical trends seen elsewhere in central California indexing intensified acorn use followed by intensive small seed use, are present but muted along the river. Limited choices of relatively high-ranked nut crops along the river may have precipitated earlier intensive use of lower-ranked small seeds than in adjacent regions with access to the broad diversity of nuts in foothill localities.

Wojtowicz, Robert [55] *see* Pihl, Robert

Wolff, Nicholas (Boston University Department of Archaeology) [249] *Discussant*

Wolpoff, Milford (University of Michigan) [17] *Discussant*

Wolverton, Steve (University of North Texas)

[126] *Data Quality in Paleozoological Faunal Identification*

There is no standard for reporting faunal identifications in zooarchaeology. Zooarchaeologists are open to accusations that reported conclusions are invalid. Other sciences counter such problems through use of quality assurance (QA) and control (QC). QA is a standard for procedures adopted during laboratory practice. A rarely cited standard was published by Driver in 1992. QC focuses on criteria for faunal identification and is becoming more common in zooarchaeology. QA and QC must be integral parts of zooarchaeology if identifications are to be accepted. The stakes are high because paleobiological datasets are now used to study problems in conservation science.

[19] *Discussant [19] Third Organizer*

Wolverton, Steve [19] *see* Venables, Barney J [135] *see* Clinton, Jennifer [19] *see* Stevens, Stanley M. [19] *see* Barker, Andrew L.

Wolynec, Renata (Edinboro University of Pennsylvania) [251] *Discussant [251] First Chair*

Woods, Alexander (University of Iowa)

[96] *Raw Material Selection and Aurignacian Blades from Abri Cellier*

This talk represents the culmination of three years of research on the relationship between raw material selection and blade production at the Aurignacian site of Abri Cellier. This third report combines the lithic analysis of blades from the Beloit Wisconsin and Les Eyzies collections with the results of mechanical knapping experiments on French flints. The use of fracture toughness testing and mechanical fracturing of experimental cores allows for a quantitative comparison of the flaking quality of Perigord raw materials. This new data sheds light on the reasons behind exotic raw material acquisition during the French Aurignacian.

Woods, James (College of Southern Idaho) and John E. Clark (Brigham Young University)

[22] *Experiment, Experience, and Lithic Analysis*

The foundational assumption of replication experiments is that experience and observations gained from attempts to make and use replicas of ancient objects leads to reliable knowledge of the manufacture and use of the targeted artifacts. Most truth claims made for ancient stone tools are entangled with experimental outcomes in some way, as are the methods for analyzing these artifacts. In recent years the epistemological dependency of lithic analysis on experiments has been challenged, and rightly so. We explore the debate over what experiments can and can't do for lithic analysis.

Woodson, M (Gila River Indian Community)**[199] *What We Do Not Know About the Impact of Flooding on Hohokam Irrigation Agriculture***

A common claim in studies of Hohokam irrigation agriculture is that flooding events were problematic or even disastrous for canal system infrastructure and for irrigators. The sources for these speculations include records of historic floods in Phoenix Basin, reconstructed stream flows based on tree-ring research, and the geological history of river environments. Yet we still do not know exactly how these landscape events affected Hohokam irrigation. In this paper I use recent evidence from the Middle Gila River Valley to examine the impact of discharge changes and streambed alterations on Hohokam canal systems and the populations living along the canals.

Woodson, M.K. [115] *see* Rost, Stephanie

Woollett, James [25] *see* Roy, Natasha [25] *see* Lemus-Lauzon, Isabel

Woollett, Jim (Université Laval)**[159] *Dog Days at Uivak Point: Zooarchaeological perspectives on Inuit dog team management***

The reconstruction of animal husbandry practices is an overlooked part of zooarchaeological research into foraging economies. This paper investigates the use of dogs for traction by Inuit through analyses of faunal remains recovered at the sites of Uivak Point, Oakes Bay 1, and Koliktalik 6 (Nunatsiavut, Canada) and will focus on the use of tooth cementum to determine mortality profiles. This study is intended to reconstruct strategies of sled dog management, to gauge the security of Inuit subsistence through the proxy of dog mortality, and to cast light on one means by which Inuit actively manipulated their biological environment.

Workinger, Andrew [5] *see* Brzezinski, Jeffrey S.

Worman, F. Scott (University of New Mexico)**[37] *Agricultural Landscapes of the Classic Period***

The widespread adoption of dry farming is considered a defining characteristic of the Classic Period in the Eastern Pueblo world. Recent research on the Caja del Rio Plateau and Albuquerque's West Mesa provides insights into the range of sophisticated techniques used to make agriculture possible in upland areas. Investigations at Alameda and Chamisal Pueblos in the Rio Grande valley suggest that floodplain agriculture was widespread and highly productive at the same time. Patterns visible at the regional scale have implications for migration and social interaction and raise questions of

the relationship between site visibility and responses to climate change.

[37] *Second Organizer*

Wren, Linnea [102] *see* Nygard, Travis

Wright, David (Universidad de Guanajuato)**[21] *The role of Otomí speakers in pre-Hispanic central Mexican society***

The participation of Otomí speakers in the multilingual society of central Mexico has traditionally been underestimated. In recent years the role of the Otomí in this region has been reexamined. In this paper a transdisciplinary approach is used to bring together linguistic, archaeological, historical and epigraphic evidence, showing that the Otomí were among the most ancient sedentary inhabitants of the central valleys of Mexico, participating fully in cultural developments throughout the pre-Hispanic era.

Wright, David (Seoul National University), J. Andrew Darling (Gila River Indian Community), Craig Fertelmes (Gila River Indian Community/Arizona State University), Steven Forman (University of Illinois at Chicago) and Michael Waters (Texas A&M University)**[139] *The Archaeology of Dust: Historical Roots of a Modern Problem***

Wind is respected by the O'odham of Arizona for its role in bringing rain (juhki) and destructive dust storms (civar lick/vomat huh vuhl). However, airborne sediments pose health and subsistence risks to humans occupying desert landscapes. In the modern world, government regulations mandate dust abatement procedures across broad geographic regions but rarely do they consider that eolian activity has always been a part of human existence in dryland environments. Using sediment chemistry, OSL dating and XRF analyses, the Gila River Indian Community in south-central Arizona has initiated a deep-time study to geomorphically contextualize and explore indigenous responses to aerosols.

Wright, David [225] *see* Terry, Richard E. [115] *see* Rost, Stephanie

Wright, David K. [223] *see* Purdue, Louise E.

Wright, Henry [3] *see* Li, Min

Wright, Joshua (Stanford University)**[54] *Interactionist Perspectives in Inner Asia***

Interaction is a common framework in which the prehistoric communities of the steppe are interpreted, and it seems very appropriate. However, scale is a key factor of interactionist perspectives based in immobile communities. This paper addresses broad issues of locating community and culture on the Eurasian Steppe, and how a wide range of communities — many of which might appear to be large scale — can appear to be local when style, identity, ethnography, and perception of landscape and environment are used as structural elements.

[54] *First Chair*

Wright, Lori (Texas A&M University, Department of Anthropology) [56] *Discussant*

Wright, Lori [56] *see* *Trask, Willa R.*

Wright, Patti (University of Missouri--St. Louis)

[111] *Formation Processes of Carbonized Seed Assemblages*

Cultural and noncultural processes contribute to the survival of plants remains and to their incorporation in the archaeological record. In this paper, I discuss carbonization and how it differentially influences the preservation of starchy and oily seeds especially those of the plants, chenopod, maize, sumpweed, and sunflower. I present information on how the carbonized remains of these seeds survive non-cultural processes such changes in temperature, moisture, and pH, and analytical process such as flotation. Ultimately, I indicate how formation processes affect the relative proportions of starchy and oily seeds and, in turn, interpretations of plant use.

Wriston, Teresa (University of Nevada, Reno) and Gary Haynes (University of Nevada, Reno)

[4] *Geoarchaeological Investigations in Northwestern Zimbabwe*

Paleoenvironmental reconstructions for southern Africa are challenging due to a poor understanding of climatic teleconnections and how they have changed over time. In order to decipher these dynamics, detailed proxy data of different types and from different locations is necessary. Recent geoarchaeological investigations in Hwange National Park provide one piece of this puzzle for the mid-to-late Holocene in northwestern Zimbabwe. These investigations include description and sampling of sediments and soils exposed in river cutbanks and archaeological rockshelters that reflect regional environmental changes during the transition from hunters-and-gatherers to farmers and pastoralists.

Wriston, Teresa [60] *see* *Hutson, Jarod M.*

Wrobel, Gabriel (University of Mississippi), Christophe Helmke (University of Copenhagen) and Jaime J. Awe (National Institute of Culture and History)

[56] *Caves as Tombs: A Bioarchaeological Example from the Maya Cave Site of Je'reftheel, Caves Branch, Belize*
Je'reftheel, a small, unlooted cave in central Belize, contained the remains of approximately 20 individuals in various states of articulation and spread across seven separate features. A contextual analysis of the various deposits demonstrates that many aspects of the site's mortuary use closely parallel elite funerary ritual focused on tombs, and thus the placement of human remains in Je'reftheel is consistent with an interpretation of veneration, rather than sacrifice. This explanation is discussed in relation to current models of Late-Terminal Classic

[56] *First Chair*

Wrobel, Gabriel [56] *see* *Michael, Amy [204]* *see* *Shelton, Rebecca L.*

Wu, Chia-Chin (University College London) and Christine Hastorf (University of California, Berkeley)

[35] *Identification of tuber processing methods: parenchyma studies from Formative Chiripa, Bolivia*

Using a refined tuber identification method, we identify dried stored tubers and various cooked evidence through microscopic analysis of tissue damage patterns in parenchymous tissue. The tuber remains were recovered from the Formative site of Chiripa, an early center on the shores of Lake Titicaca. These fragments are associated with an emerging agricultural society in which highland tuber domesticates, especially the potato *Solanum*, were important. The tuber processing identification method outlined and applied to specimens in this paper provides insights into food preparation as well as the use of space at this pre-Tiwanaku community.

Wulffen, Jennifer (University of Illinois Chicago)

[105] *Shell concentrations at Caballete, Norte Chico, Peru: Mapping temporary camp sites in the Late Archaic*

Caballete is a large Late Archaic (3000 – 1800 B.C.) coastal site in the Fortaleza Valley, Peru. It contains large mounds with associated circular plazas and stone housing complexes indicative of a complex society. An informal survey of the large open area in front of the mounds documented a broad distribution of shell fragments, and test units in 2006 and 2008 revealed temporary occupations within it. In 2010 a survey was conducted to map the distribution of shell concentrations extending from the mound area to the base of the surrounding foothills. The poster presents the results of that survey.

Wygal, Brian (Adelphi University)

[231] *Testing the Mammoth Refugia Hypothesis in the Central Alaska Range*

The mammoth steppe undoubtedly fostered the expansion of hunter-gatherers into interior Alaska during the turbulent terminal Pleistocene. Archaeologists have long hypothesized that as the first human groups arrived in eastern Beringia, the rapidly declining mammoth steppe forced late Pleistocene megafauna into "mammoth refugia" such as in the foothills of the Central Alaska Range. Recent surveys tested the hypothesis that prehistoric hunters converged on large game species in these once glaciated alpine zones. Undated surface finds, meat caches, hunting blinds, and buried biface production sites, one yielding a date of 12,400 cal BP, indicate a lengthy prehistoric use of these areas.

Xie, Liye (the University of Arizona)

[69] *Why Bones?: Worked Scapulae from the Lower Yangzi River, China*

Worked scapulae, which are assumed to be agricultural implements, have been recovered from archaeological sites in Asia, Europe and the Americas, and yet their distribution seems to be restricted to only certain regions in each continent. To understand why bone was preferred as a raw material for making these tools, the author closely examined worked scapulae (8000-5000 BCE) from the lower Yangzi River, and conducted replicative and functional experiments to compare performance characteristics between worked scapulae and stone shovels and hoes.

Yaeger, Jason (University of Texas at San Antonio)

[191] *The Ritual Termination of a Provincial Palace and the Restoration of Political Sovereignty at Xunantunich, Belize*

Founded in the 7th century A.D., Xunantunich expanded

rapidly in the 8th century A.D., eclipsing its much older neighbors and presumed rivals. This expansion apparently corresponds with Xunantunich's transformation from an autonomous polity to a province directly ruled by the larger kingdom of Naranjo. A new palace was built to house the truncated ruling court entailed by that new political arrangement. In the mid-8th century, however, the palace was sacked and ritually terminated. This event was followed by a return to political autonomy by the turn of the 9th century. This paper details the archaeological evidence supporting this political history.

Yaeger, Jason [56] *see* Freiwald, Carolyn R.

Yang, Dongya [178] *see* Stevenson, Alexander E.

Yao, Alice (University of Toronto)

[23] *Shellmounds in the Heartland of the Dian polity* Investigations on the Bronze Age civilizations of Yunnan, China have until recently focused on the excavation of large cemetery sites. The locations of the settlements associated with these complex political entities have largely eluded archaeologists. This paper presents preliminary results identifying the Bronze Age settlement pattern from the Lake Dian basin, which features intensive occupation of lowland floodplains and swamps in a highly unique ecosystem.

Yellen, John (National Science Foundation) [144]
Discussant

Yeritsyan, B. [114] *see* Adler, Daniel S.

Yerka, Stephen (U. of Tennessee), Nicholas P. Herrmann (Mississippi State University, Starkville), David G. Anderson (University of Tennessee) and D. Shane Miller (University of Arizona)

[216] *Archaeological Information System Standard Design Concepts*

Archaeologists are collecting vast amounts of digital data that would be unbelievable a decade ago. Beyond descriptive artifact databases, archaeologists are managing artifact photos, field photos, scanned forms and sketch maps, geographic layers, geophysical data, etc. This paper presents a design and implementation strategy that incorporates digital objects and archaeological data into a distributed Information System (IS). The is a flexible paradigmatic platform that allows autonomous data management, but also provides a technology-independent system that facilitates the sharing and publishing of archaeological information. The system design is demonstrated through the application on several archaeological projects.

Yeske, Kate (Colorado State University, CEMML) and Edmund Gaines (Colorado State University, CEMML)

[181] *Prehistoric Land Use of a Vegetated Dune Field, Tanana Flats, Interior Alaska*

The northwestern portion of the Tanana Flats, Interior Alaska, contains a ~19,000 acre vegetated dune field. Archaeological surveys conducted by Colorado State University, CEMML, during the 2009 and 2010 field seasons identified 40 prehistoric sites in this setting. This group represents one of the densest clusters of

prehistoric sites known in subarctic Alaska. Recovered assemblages consist of stone tools and debitage reflective of short-term, seasonal hunter-gatherer campsites and activity areas. Radiocarbon dating and stratigraphic position indicate nomadic use of the area beginning in the early Holocene and continuing through the proto-historic period.

Yeske, Kate [181] *see* Gaines, Edmund P.

Yesner, David (University of Alaska Anchorage) and Norman Easton (Yukon College)

[124] *Archaeology and Paleoecology of Eastern Beringia, 1990-2010*

Twenty years of research in interior Alaska and ten in the Alaska/Yukon borderlands have now produced a clearer idea of spatial and temporal variations in human-environmental relations among the first colonizers of the North American landscape. It is now clear that late-glacial environmental changes, on the one hand, and hypsithermal changes on the other, produced more profound effects than the Younger Dryas period. Fine-grained stratigraphic analyses of faunal remains from key sites with organic preservation reveal regional and temporal differences in climatic conditions, available taxa, settlement patterns, and links with artifact assemblages, with implications for peopling of the Americas.

[124] *First Chair*

Yoder, David (William Self Associates)

[203] *Invisible Culture: The Use of Soft X-Ray Radiography in Perishable Artifacts*

The research potential of some artifacts has been hampered by our inability to observe hidden features. This problem can be solved in part by the use of soft X-ray radiography, an archaeometric method that enables the viewing of internal elements that are sometimes unavailable through physical inspection alone. Multiple case studies of perishable specimens from throughout the Great Basin and Southwest are presented to demonstrate the utility of this technique. Results show that while not suited for every situation, soft X-ray radiography can be a powerful, non-destructive, and inexpensive tool in the analysis and interpretation of many types of perishables.

[203] *First Chair*

Yoder, David [179] *see* Gabler, Brandon M.

York, Andrew (AECOM)

[50] *The Royal Road: Evolution of El Camino Real on Marine Corps Base Camp Pendleton, California.*

Originally conceived as the trail connecting the missions and other Spanish facilities in Alta California, the route of El Camino Real has undergone an evolution in succeeding centuries that culminates in modern Interstate 5. Several manifestations of this route that are still preserved on Marine Corps Base Camp Pendleton are discussed, as well as their relationship to historic events in this region.

Young, Craig [262] *see* Duke, Daron

Young, D Craig (Far Western Anthropological Research Group, Inc.)

[94] *From Warner Valley to Honey Lake: Middle Archaic Logistical Mobility in the Western Great Basin*
Targeted provisioning within a pattern of logistical mobility is a hallmark of the Middle Archaic in the western Great Basin. Discrete components at Honey Lake in northwestern Nevada provide datasets for testing this statement and provide openings for addressing implications of seemingly sub-optimal behavior (e.g., prestige hunting) within a broader socio-economic system. Toolstone collection mirrors other provisioning activities and provides a structure for targeting resources that may not conform to expectations of optimality. These data have forced me outside my intellectual comfort zone, not a difficult push, but one that Don Fowler has consistently challenged and encouraged me to accept.

Young, Erica [80] see Maeyama, Kimberly

Young, Lisa (University of Michigan) and Douglas Gann (Center for Desert Archaeology)

[139] *The Pit and the Podcast: Interpretive Collaboration at Homol'ovi*

For over 100 years, Homol'ovi has been a place where archaeologists and Hopi people interacted. During this time, this relationship has changed from informant and crew member to collaborative partner. At the Homol'ovi Ruins State Park, recent collaborations have focused on public outreach projects and educational opportunities. This poster examines how archaeologists and Hopi tribal members worked together on two interpretive projects: a podcast audiotour of an ancestral Hopi Village and the construction of a traditional Hopi corn roasting pit. We also discuss the recent changes that have occurred with the closing of the Park.

Young, Lisa [135] see Sampson, Christina Perry

Young, Tatiana (PhD Candidate, Temple University)

[131] *Occupation and Abandonment of sites in the Coahuah Region, Quintana Roo, Mexico*

Occupation and Abandonment of sites in the Coahuah Region, Quintana Roo, Mexico. The majority of sites in the Coahuah Region, Quintana Roo demonstrate a similar pattern of occupation and abandonment. The sites in the region were occupied during the Middle and Late Formative Periods, with considerable population increase throughout the Formative Period. Most sites in the vicinity experienced population decline and abandonment during the Early and Late Classic Periods, only to witness a peak of occupation during the Terminal Classic Period. What was the determining factor(s) of resettlement in the studied area: geological and ecological settings, environmental conditions or political and religious structures?

Younger, John (University of Kansas)

[47] *Minoan-Mycenaean Sealstones: Understanding Chronology and Function*

Facilitated by the volumes of the Corpus der minoischen und mykenischen Siegel (Berlin 1960-2009), scholars studying Minoan and Mycenaean sealstones and sealings of the Aegean Bronze Age (ca. 2300-1300 BCE) have worked in two major areas: chronology and function. Chronology is now well understood through a process of creating a stylistic typology for seals that can be fixed in time through seals from stratigraphic

excavations. Understanding the function of seals relies on a detailed typology of sealings and their role in administration as witnessed by documents written in the three major Aegean scripts, Cretan Pictographic and Linear A and B.

Younie, Angela (Texas A & M University), Heather Smith (Texas A & M University), Ted Goebel (Texas A & M University), Michael Waters (Texas A & M University) and Kelly Graf (Texas A & M University)

[181] *The Fluted-Point Locality near Serpentine Hot Springs, Alaska: Archaeological Investigations during the 2010 Field Season*

In the summer of 2010, we returned to the fluted-point locality (BEN-192) near Serpentine Hot Springs, Bering Land Bridge National Preserve, Alaska, excavating nearly 30 m² and conducting geoarchaeological studies. The site's buried cultural layer is situated within a stratigraphically sealed silt deposit, underlying grussy colluvial deposits. Excavation highlights include the discovery of a new hearth feature, additional lithic and bone artifacts, and a fluted point directly associated with charcoal and charred bone from the hearth. These appear to be stratigraphically associated with a previously excavated hearth feature dating to approximately 10,000 14C BP (11,500-12,000 cal BP).

Yu, Pei-Lin (National Park Service--Rocky Mountain CESU) and Jackie Cook (Confederated Tribes of the Colville Reservation)

[101] *Scale, organization, and sustainability in traditional salmon fishing: insights from the ancient technology of the Upper Columbia River*

In this paper, key functional morphological traits of tabular quartzite tools from known fishing contexts are assessed against traditional and ethnographic frames of reference to describe and predict variability in tool shape, and develop a model statement about the organization of bulk fish processing. Special attention is given to gender-specific organization of labor during periods of intensive fish harvest, and technological behavior associated with large scale processing practiced by aquatic-focused hunting and gathering peoples. The model statement is assessed using archaeological data from the Kettle Falls collection curated with the Confederated Tribes of the Colville Reservation.

[251] *Discussant*

Yun, Ho Pil [149] see Lee, JiHyun Rachel

Zambelli, Amber (University of California, Berkeley), Peter Magee (Bryn Mawr College) and Flemming Højlund (Moesgård Museum)

[13] *Reconsidering Maritime Trade in the Iron Age Gulf*
Enduring models of the ancient maritime economy of the Gulf rely upon a putative Mesopotamian impetus, and the reemergence of trade in the early first millennium BC is no exception. However, new evidence from this period problematizes such notions and calls for further consideration of systems involved. Compelling new geochemical data demonstrate a resumption of maritime trade between 900 and 600 BC, linking southeastern Arabia to Bahrain and Mesopotamia once again. This paper will detail the current corpus of evidence, as well as its implications for economic mechanism and motivation in the Iron Age in southeastern Arabia and

greater Gulf.

Zamora, Fabian

[41] *Intercambio Ritual Y Poder En Significación: Miradas Desde El Proceso Productivo De La Pirita.* Se propone a partir del caso de Aguateca una centralización observada en el manejo de la materia prima de la pirita, su transformación y uso ritual. Su distribución restringida a contextos administrativos y residenciales le relaciona con un símbolo clave en la conformación del habitus gobernante, difícilmente intercambiable por otro tipo de objetos. Una comparación con el intercambio ritual de brazaletes en el Kula, y con el consumo ritual de sal entre los Baruya, nos provee de una idea general sobre los posibles significados sociales de la pirita dentro de las élites políticas mayas durante el clásico tardío.

Zaragoza, Diana (INAH)

[21] *Los otomíes en la huasteca*
La Huasteca es sin duda uno de los sectores que conformaron Mesoamérica en época tardía. Su posición en la llamada "frontera norte" le confiere cualidades excepcionales; probando además, su prolongada secuencia cronológica y muchas de sus manifestaciones culturales indígenas han trascendido hasta nuestro tiempo. Aquí confluyeron muchas etnias las cuales, en el contexto arqueológico, son muy difíciles de determinar; sin embargo, existen ciertos indicadores que pueden relacionarlas. En esta presentación me dedicaré más al aspecto religioso de la región y el impacto que tuvieron los otomíes en ella.

[21] *First Chair*

Zaro, Gregory (University of Maine)

[223] *Agro-ecological management of intervalley landscapes on Peru's arid south coast*
Recent archaeological and geological research on Peru's arid south coast has highlighted the intensity of human occupation and land use beyond primary river drainages during the late Late Intermediate Period (A.D. 1200-1400). While human settlement was suitably positioned to take advantage of the rich maritime base, farming remained integral to the local subsistence economy within intervalley settings. This paper specifically addresses Chiribaya agro-ecological management of dispersed intervalley field systems, including terracing, irrigation, and soil properties. When treated in the context of global change, the study of ancient fields holds significant implications for sustainability, resilience, and coupled Earth-human systems.

Zawadzka, Dagmara (Université du Québec à Montréal (UQAM))

[60] *Woodland critters great and small in Canadian Shield rock art*

Animals figure prominently in the spiritual beliefs of Algonquian-speaking peoples. Oral traditions abound with accounts of animal – human relations and animals are often invoked in ritual practices. Animals are considered other-than-human persons and various rituals accompany the hunting of certain animals such as bears. Though animals are such important elements in Algonquian peoples' beliefs, they do not figure prominently in their rock art. This paper will examine which animals are depicted in Canadian Shield rock art

and the reasons for their inclusion.

Zborover, Danny (University of Calgary)

[200] *Archaeology, Ethnohistory, and Ethnology-Interpretive Interfaces in the Chontalpa Historical Archaeology Project, Oaxaca*

The systematic integration of archaeological, documental, and ethnographic data sets was a hallmark of Thomas Charlton's scholarship throughout the decades, while the interpretive interfaces outlined in his 1981 seminal article are still highly relevant to contemporary integrative research. Through a document-oriented archaeology combined with ethnographic data, the Chontalpa Historical Archaeology is examining the Chontal 'territorial narratives' in corroborative, complementary, and contrastive frameworks. By critically evaluating both indigenous and European perspectives, historical archaeology is further able to transform the image of the Chontalpa from a passive periphery into a dynamic player in the Mesoamerican arena, before and after the Spanish conquest.

Zeanah, David (California State University, Sacramento), Douglas Bird (Stanford University), Rebecca Bliege Bird (Stanford University) and Brian Codding (Stanford University)

[74] *Anthropogenic Burning, Intensive Seed Exploitation and the Organization of Ground Stone Technology in Western Australia*

We propose that the late Holocene proliferation of ground stone tools through the Australian arid zone marked the onset of anthropogenic fire regimes. The effect of controlled burning was to disperse seed patches to catch unpredictable rainfall. Consequent transport costs made investments in ground stone technology worthwhile leading to curated, portable, specialized and cached milling equipment. Ground stone assemblages from Western Australia were analyzed to assess how well variability supports a link between intensive seed use and anthropogenic burning. Results of the study have implications for longstanding issues of seed intensification in both North America and Australia.

Zedeño, Maria (University of Arizona)

[18] *Archaeology, Legitimacy, and the Contemporary Indian Nation*

Understanding the relationship between past peoples and present power is one of Don Fowler's enduring legacies. Particularly compelling is his view of archaeology as a symbolic resource used to co-opt political power and to disenfranchise descendant populations. In three case studies from western North America I illustrate the evolution of sociopolitical ties between tribes and archaeological landscapes and objects since the establishment of reservations, and how these ties contribute to the consolidation of identity and power among contemporary native nations. I argue that archaeologists may strengthen native nations' legitimate rights to the past through the practice of indigenous archaeology.

Zeder, Melinda (Smithsonian Institution)

[17] *Poking the GooGoo: The Value of Being a Contrarian*
Questioning assumptions is not only a hallmark of John Speth's work, it is a legacy of the University of Michigan graduate program in archaeology. Innate skepticism of

the status quo coupled with the anal-retentive pursuit of its empirical underpinnings are traits shared by many UofM alum. While this contrarian approach may not always be comfortable, it can result in paradigmatic shifts in archaeological theory and practice. Here I give a few examples from my own work where this ingrained Michigonian characteristic has contributed to changes in the ways we both trace and explain agricultural origins in the Near East.

Zegarra, Fredy Zegarra [269] *see Rodriguez, David M.*

Zeitlin, Judith (University of Massachusetts Boston)
[200] *Authority and Representation in the Mesoamerican Past: Relating the Textual and Archaeological Records from Formative to Postconquest Times.*

North American historical archaeologists focus on the post-1492 globalized world, but it is a temporal perspective not shared across the Atlantic, where researchers may extend their reach back to the Roman imperial expansion. For Mesoamericanists, working in a region where Precolumbian societies produced their own graphic writing systems, bridging the dividing line formed by the Spanish Conquest enables an examination of changing relationships between the written word and the communities it addressed across multiple time periods. A sampling of these developments highlights the materiality of the text and its often ephemeral power over imperial subjects.

Zelazo, Emilie (CSU Sacramento)

[256] *Resource Intensification in Central California: Evidence from the Sacramento River and Consumnes River Drainage*

Recent models of resource intensification in California argue for a decrease in foraging efficiency over the late Holocene for Northern and Central California. Causes of this decrease are understood to be the results of harvest pressure resulting from rising human populations and/or a decline in the absolute number of large mammals available due to environmental change. Faunal assemblages from Middle Period (2800 B.P. to 1200 B.P.) and Late Period (1200 B.P. to 100 B.P.) sites located in the lower Cosumnes River drainage and the Sacramento River will be used as case examples.

Zhang, Herong [23] *see Li, Fei*

Zhang, Xiaoling [22] *see Shen, Chen [218]* *see Gao, Xing*

Zheng, Tongxiu [3] *see Li, Min*

Zhou, Cathy (RFK Science Research Institute), Bonnie Blackwell (Williams College), A.R. Skinner (Williams College), H.L. Dibble (University of Pennsylvania) and S.P. McPherron (Max Planck Institute)

[2] *ESR Dating at Grotte de Contrebandiers, Témara, Morocco: Developing a New Calculation for Volumetric Doses*

Grotte de Contrebandiers (aka Smugglers' Cave) has yielded anatomically modern hominid remains, associated with large ungulates, as well as Iberomaurusian, Aterian, and North African Mousterian deposits in a stratified context within sandy and silty

matrix-supported conglomerates. Determining the external dose rate for mammalian teeth recovered from typical cave sediment always requires that some volumetric dosimetry be used to average out the effects of sediment inhomogeneity ("lumpiness") and the thin layers typically found in archaeological contexts. At Smugglers', two methods to calculate the volumetric dose contribution from éboulis and other "lumps", and its effects on the calculated ages are reported here.

Zhu, Tiequan (Sun Yat-sen University)

[142] *The Scientific Study on the Exported Porcelains from Xicun Kiln in Guangzhou*

Xicun kiln, located in Guangzhou, China, is a typical kiln that produces the exported porcelains during Song Dynasty (907-960AD). Using a series of experimental methods, including Energy Dispersive X-ray Fluorescence Spectroscopy (EDXRF), Laser ablation Inductively Coupled Plasma Mass Spectrometer (La-ICP-MS), X-ray Diffraction (XRD), Raman Spectroscopy (RS), samples were analyzed systemically. Based on the analysis, the technological and provenance characteristics of different types of porcelains (Celadon with the incised and carving flowers, Qingbai wares, Black porcelains, Colored porcelains) were discussed, including material exploitation, glazing, firing temperature, etc. This research has potential for revealing ancient ceramic trade across East and Southeast Asia.

Zihlman, Adrienne (University of California, Santa Cruz)

[16] *Sex differences and gender roles: persisting issues in human evolution*

Reconstructions of early hominid social life prior to the 1970s portrayed males as the key to becoming human, through hunting and sharing meat; females, bonded to males, were dependent, inactive, and invisible. Women's visibility in the evolutionary picture has been shorted lived, with Science articles (1981, 2009) giving prominence to males initially as provisioners of lettuce rather than meat, and now as care-takers. I review the history, question the fossil evidence, and draw on examples from recent textbooks. The profession has not progressed in its portrayal of women in evolution and may have even lost ground in the last decades.

Zimansky, Paul (Stony Brook University)

[258] *Cultural Assimilation and Imperial Control in an Urtian City*

From c. 800-650 BC the Urtian empire constructed settlements in eastern Anatolia and populated them with captives taken in military campaigns. Excavations in the outer town at the center of Ayanis, Turkey, demonstrate that the level of imperial planning was uneven in the settlement area and while all of the inhabitants used artifacts associated with the imperial assemblage, there also many idiosyncrasies in individual households. The patterns will be compared with models of imperial-local interaction in the New World.

Zimmerman, Larry (IUPUI/Eiteljorg Museum) [78]
Discussant

Zimmerman, Larry [197] *see Singleton, Courtney E.*

Zipper, Carl (Hamilton College)**[208] *Digging Deeper into the Campus Rd. Site:***

Excavation and Analysis of a 19th Century Farmstead
The remains of 19th century farmsteads are a common feature of the American landscape. Their archaeological excavation and analysis provides a useful supplement to the historical documentary record. The Campus Road Site in Clinton, NY is one such site. A previous study of nails from the site determined that the farmhouse was likely built in the 1870s and burned down in the early 20th century. This study presents the results of further excavations and analysis at the site. It seeks to further refine the site's chronology and to illuminate aspects of social and economic life at the Campus Road Site.

Zori, Colleen (University of California, Los Angeles) and Erika Brant (University of Virginia)**[39] *Landscapes of Conflict and Resolution: Warfare, Ritual and Trade in the Late Intermediate Period (AD 1000-1450) in the Quebrada de Tarapacá, Northern Chile***

The Late Intermediate Period (AD 1000-1450) in the Quebrada de Tarapacá of northern Chile is characterized by two contrasting forms of social interaction: warfare and inter-regional trade. Combining settlement data with an analysis of both the built environment and the anthropogenic landscape, we demonstrate that the development of successively more defensible architecture in the valley was paralleled by the creation of two distinct arenas for conflict resolution. The first consists of public spaces within fortified sites that served to mediate intra-group conflict. The second, consisting of isolated ritual sites in spectacular natural settings, would have facilitated inter-group interaction, including trade.

[39] *First Chair***Zovar, Jennifer (Vanderbilt University)****[228] *Community Formation in Post-Collapse Context: Results from a Ceramic Analysis at Pukara de Khonkho, Bolivia***

This paper utilizes an archaeology of communities approach to address post-collapse periods, using as an example information that was recently collected through an intensive ceramic analysis of material from Pukara de Khonkho and neighboring sites in Bolivia's southern Titicaca Basin. The ceramic data suggests important differences between the occupations of Pukara de Khonkho and neighboring coeval settlements, which may help to create a better understanding of issues of community identity formation, craft production, population movement, and intercommunity interaction in Late Intermediate Period Bolivia.

Zralka, Jaroslav (Institute of Archaeology, Jagiellonian University), Bernard Hermes (The Nakum Archaeological Project) and Wieslaw Koszkuł (Institute of Archaeology, Jagiellonian University)**[14] *New data on the Preclassic development of Nakum and Yaxha, Peten, Guatemala***

Nakum and Yaxha are two important Maya sites located in the area of the so-called Triangulo Park in northeastern Guatemala. Both cities have recently become the focus of intense investigations, yielding significant data on their vibrant development during the Preclassic period. These data are the subject of the

present paper and highlight the importance of both Nakum and Yaxha during this period, not only in their immediate vicinity, but in the Maya area as a whole.

Zuckerman, Molly (SC Institute of Archaeology & Anthropology)**[16] *Mercury in the midst of Mars and Venus: Reconstructing gender and socioeconomic status in the context of mercury treatments for syphilis in early modern England (c. 1650-1864)***

This study examines trace element concentrations in skeletons (N=30) with acquired syphilis from 17th to 19th century London for evidence of differential treatment with mercury. Controversial historical evidence suggests that access to mercury, the dominant contemporary treatment for syphilis, varied dependent on sufferer's gender and socioeconomic status, but actual practice is indecipherable in documentary evidence. Hg concentrations were assessed via X-RF in the above, a non-pathological control sample (N=70), and soil samples (N=15). Skeletal evidence and historical context was employed to estimate gender (i.e., embodied schemas), following the assumption that gendered ideologies and economic realities produced systematic effects on access.

Zufah, Charles (CSU Long Beach)**[163] *LiDAR Survey of Soconusco, Chiapas***

This poster will be presenting the result of an airborne LiDAR survey of the eastern Soconusco region of Chiapas, Mexico. LiDAR, or Light Detection and Ranging, is a remote sensing technique that, utilizing very rapid laser pulse which record both the xy coordinates as well as the elevation of the point they hit, is able to provide high resolution images of terrain and elevation. Using the data received from this survey, I will identify and map the prehistoric man-made earthworks found in the region to provide a basis for future pedestrian survey.

Zutter, Cynthia (MacEwan University)**[25] *Tea, Medicines and Spruce...the role of Wood and Woody plants in Labrador Inuit Economies***

The role of wood in Labrador Inuit architecture has provided a multitude of results, including climate reconstructions and site occupation time lines (D'Arrigo, R., B. Buckley, S. Kaplan and J. Woollett 2003) Although this is important, the use of woody plants in Inuit life ways is much more rich and diverse. The following paper will present results from 17th C. Inuit sites along the Northern coast of Labrador that exemplify the variety of uses and ubiquity of wood and woody plants by these Arctic peoples.