Kenneth Blake Vernon

Scientific Computing and Imaging Institute
University of Utah
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Salt Lake City, Utah 84112

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Professional Appointments

One-U Responsible AI Postdoctoral Fellow | 2025-Present
Scientific Computing and Imaging Institute
School of Environment, Society, and Sustainability
University of Utah

Post-Doctoral Associate | 2022-2024
Center for Collaborative Synthesis in Archaeology, CU Boulder

Assistant Director | 2018-2022
University of Utah Archaeological Center

Education

University of Utah | Salt Lake City, UT
PhD in Anthropology, 2022

Northern Illinois University | DeKalb, IL
MA in Philosophy, 2009

University of Central Arkansas | Conway, AR
BA in History and Philosophy, 2006

Publications

Peer-reviewed journal articles

2024

Trade-off between market and ecosystem services drives settlement decisions among smallholder ranchers in Baja California Sur, Mexico

Sustainability Science 19 (4): 1377-1390 (2024)

Kenneth B. Vernon, Brian F. Codding, Simon C. Brewer, Shane J. Macfarlan

DOI 10.1007/s11625-024-01491-9

The Fremont frontier: Living at the margins of maize farming

American Antiquity 89 (3): 440-458 (2024)

Kenneth B. Vernon, Peter M. Yaworsky, Weston McCool, Jerry D. Spangler, Simon Brewer, Brian F. Codding

10.1017/aaq.2024.22

A method for defining dispersed community territories

Journal of Archaeological Science 170 106048 (2024)

Kenneth B. Vernon, Scott G. Ortman

10.1016/j.jas.2024.106048

The Goldilocks Zone for maize agriculture and the settlement and abandonment of the West Tavaputs Plateau

Quaternary International 689-690 30-42 (2024)

Peter M. Yaworsky, Kenneth B. Vernon, Weston C. McCool, Isaac A. Hart, Jerry Spangler, Brian F. Codding

10.1016/j.quaint.2023.12.003

Can we reliably detect adaptive responses of hunter-gatherers to past climate change? Examining the impact of Mid-Holocene drought on Archaic settlement in the Basin-Plateau Region of North America

Quaternary International 689-690 5-15 (2024)

Brian F. Codding, Heidi Roberts, William Eckerle, Simon C. Brewer, Ishmael D. Medina, Kenneth B. Vernon, Jerry S. Spangler

10.1016/j.quaint.2023.06.014

2022

Ecological constraints on violence avoidance tactics in the Prehispanic Central Andes

Environmental Archaeology 1-14 (2022)

Weston C. McCool, Kurt M. Wilson, Kenneth B. Vernon

10.1080/14614103.2022.2137652

Socioecological dynamics structuring the spread of farming in the North American basin-plateau region

Environmental Archaeology 27 (4): 434-446 (2022)

Brian F. Codding, Joan Brenner Coltrain, Lisbeth Louderback, Kenneth Blake Vernon, Kate E. Magargal, Peter M. Yaworsky, Erick Robinson, Simon C. Brewer, Jerry D. Spangler

10.1080/14614103.2021.1927480

Decomposing habitat suitability across the forager to farmer transition

Environmental Archaeology 27 (4): 420-433 (2022)

Kenneth B. Vernon, Peter M. Yaworsky, Jerry Spangler, Simon Brewer, Brian F. Codding

DOI 10.1080/14614103.2020.1746880

Subsistence strategy mediates ecological drivers of human violence

PLOS ONE 17 (5): e0268257 (2022)

Weston C. McCool, Kenneth B. Vernon, Peter M. Yaworsky, Brian F. Codding

DOI 10.1371/journal.pone.0268257

Climate change–induced population pressure drives high rates of lethal violence in the Prehispanic central Andes

Proceedings of the National Academy of Sciences 119 (17): e2117556119 (2022)

Weston C. McCool, Brian F. Codding, Kenneth B. Vernon, Kurt M. Wilson, Peter M. Yaworsky, Norbert Marwan, Douglas J. Kennett

DOI 10.1073/pnas.2117556119

2021

Plant species richness at archaeological sites suggests ecological legacy of Indigenous subsistence on the Colorado Plateau

Proceedings of the National Academy of Sciences 118 (21): e2025047118 (2021)

Bruce M. Pavlik, Lisbeth A. Louderback, Kenneth B. Vernon, Peter M. Yaworsky, Cynthia Wilson, Arnold Clifford, Brian F. Codding

DOI 10.1073/pnas.2025047118

2020

Marriage dynamics in old Lower California: Ecological constraints and reproductive value in an arid peninsular frontier

Biodemography and Social Biology 65 (2): 156-171 (2020)

Shane J. Macfarlan, Ryan Schacht, Caroline Foley, Sydney Cahoon, Grace Osusky, Kenneth B. Vernon, Evan Tayler, Celeste Henrickson, Eric Schniter

DOI 10.1080/19485565.2020.1728685

Advancing predictive modeling in archaeology: An evaluation of regression and machine learning methods on the Grand Staircase-Escalante National Monument

PLOS ONE 15 (10): e0239424 (2020)

Peter M. Yaworsky, Kenneth B. Vernon, Jerry D. Spangler, Simon C. Brewer, Brian F. Codding

DOI 10.1371/journal.pone.0239424

2017

The ecology of population dispersal: Modeling alternative basin-plateau foraging strategies to explain the Numic expansion

American Journal of Human Biology 29 (4): e23000-n/a (2017)

Kate E. Magargal, Ashley K. Parker, Kenneth B. Vernon, Will Rath, Brian F. Codding

10.1002/ajhb.23000

Manuscripts

2025

Explaining PaleoIndian settlement in the Intermountain West

American Antiquity (in prep)

Kenneth B. Vernon, Kate E. Magargal, David Zeanah, D. Craig Young, Robert G. Elston, Simon C. Brewer, Brian F. Codding

Migration and environmental learning in interstitial areas: An example from the Northern Rio Puerco Valley, New Mexico

Open Archaeology (under review)

Kenneth B. Vernon, Scott G. Ortman, Donald A. Shiffler

Book reviews

2020

Review of Oshara Revisited: The Archaic Period in Northern New Mexico by Nicholas Chapin

Journal of Anthropological Research 76 (1): 138-140 (2020)

Kenneth B. Vernon, Brian F. Codding

10.1086/706946

Technical reports

2022

Archaeological Survey of Cottonwood Wash, San Rafael Desert, Emery County, Utah

Report submitted to the Bureau of Land Management, Price Field Office, Price, Utah; and State of Utah School and Institutional Trust Lands Administration, Salt Lake City, Utah. Prepared by the University of Utah Archaeological Center and the Colorado Plateau Archaeological Alliance. BLM Cooperative Agreement L20AC00267. United States Department of Interior Permit No. 21UT85115. State of Utah Antiquities Project No. U22UA031. University of Utah Archaeological Center Project No. UUAC22052.

Ishmael Medina, Kenneth B. Vernon, Kate E. Magargal, Weston C. McCool, Jerry D. Spangler, Brian F. Codding

2021

Limited Test Excavations at Red Reef Shelter (42WS519), Red Cliffs National Conservation Area, Washington County, Utah

Report submitted to the Bureau of Land Management, St. George, Utah. NA

Jerry D. Spangler, Matthew Zweifel, Heidi Roberts, Kenneth B. Vernon, Isaac Hart, Brian F. Codding, Anne Lawlor

2019

Hisatsinom of the high plateaus: a Class I overview of prehistoric cultural resources in Grand Staircase-Escalante National Monument

Report submitted to the Bureau of Land Management, Salt Lake City, Utah. NA

Jerry D. Spangler, Peter M. Yaworsky, Kenneth B. Vernon, Brian F. Codding

2018

Preliminary Archaeological Investigations at the Jack Kirk Site, Mariposa Creek, California

Report submitted to the North Fork Mono Tribe, Mariposa Creek, California. NA

Brian F. Codding, Kate E. Magargal, Kenneth B. Vernon, Paul E. Allgaier, Jess Valdez, Ron Goode

The Archaeology of Molen Reef, Emery County, Utah

Report submitted to the Southern Utah Wilderness Alliance, Salt Lake City, Utah. NA

Kenneth B. Vernon, Peter M. Yaworsky, Jerry D. Spangler

Grants, Fellowships, and Awards

2022

Archaeological Survey of Cottonwood Wash, San Rafael Desert, Emery County, Utah

Cooperative Agreement, Bureau of Land Management.

Brian F. Codding, Jerry D. Spangler

2020

Advancing Stewardship with Theory and Models

David C. Williams Memorial Graduate Fellowship, University of Utah College of Social and Behavioral Sciences.

Kenneth B. Vernon

Developing a Modular Online Introduction to the R Environment

Cross-College Training Grant, University of Utah College of Social and Behavioral Sciences.

Simon Brewer, Brian F. Codding, Kenneth B. Vernon

2019

Advancing Stewardship with Theory and Models

David C. Williams Memorial Graduate Fellowship, University of Utah College of Social and Behavioral Sciences.

Kenneth B. Vernon

Graduate Research

Earl and Elies Skidmore Endowed Graduate Fellowship, University of Utah College of Social and Behavioral Sciences.

Kenneth B. Vernon

2018

Advancing Stewardship with Theory and Models

David C. Williams Memorial Graduate Fellowship, University of Utah College of Social and Behavioral Sciences.

Kenneth B. Vernon

Why Were Prehistoric Agricultural Societies in Utah Unable to Adapt to the Medieval Megadroughts?

Interdisciplinary Faculty Research Seed Grant, University of Utah Global Change and Sustainability Center.

Brian F. Codding, Simon Brewer

2017

Archaeological Sites as Endangered Species: Using Next Generation Models to Predict and Protect Cultural Properties on the Grand Staircase-Escalante National Monument

Grand Staircase-Escalante National Monument Cooperative Agreement, Bureau of Land Management.

Brian F. Codding

Human Plant Use in Red Butte Canyon

Research Grant, University of Utah Global Change and Sustainability Center.

Kenneth B. Vernon

Human Plant Use in Red Butte Canyon

Research Grant, Friends of Red Butte.

Kenneth B. Vernon

Presentations

2024

The network ecology of settlement persistence

Talk at the 30th Annual Meeting of the European Archaeological Association, Rome, Italy.

Kenneth B. Vernon, Simon C. Brewer, Brian F. Codding, Scott G. Ortman

The network ecology of settlement persistence

Talk at the workshop 'Advances in modelling past human ecosystems', Cologne, Germany.

Kenneth B. Vernon, Simon C. Brewer, Brian F. Codding, Scott G. Ortman

The socio-ecology of community centers

Talk at the 89th Annual Meeting of the Society for American Archaeology, New Orleans, LA.

Kenneth B. Vernon, Scott G. Ortman

2023

How do I work this? this R project

Talk at the Spatial Utah Data Science (SUDS) Meeting, Salt Lake City, UT.

Kenneth B. Vernon

The Ecology of Agglomeration and the Rise of Chaco Great Houses

Talk at the 88th Annual Meeting of the Society for American Archaeology, Portland, OR.

Kenneth B. Vernon, Weston C. McCool, Simon C. Brewer, Brian F. Codding, Scott G. Ortman

A core-periphery approach to defining community boundaries

Talk at the 29th Annual Meeting of the European Archaeological Association, Belfast, Northern Ireland.

Kenneth B. Vernon, Scott G. Ortman

Exploring the Dynamics of Late Precontact Obsidian Procurement and Exchange Networks Across the US Southwest and Northwest Mexico using cyberSW

Talk at the The Southwest Symposium Archaeological Conference, Santa Fe, NM.

Sarah Oas, Kenneth B. Vernon, Matthew A. Peeples, Barbara J. Mills, Joshua Watts, Jeffery J. Clark, Steven Shackley, Scott G. Ortman

2022

The Fremont Frontier: Living at the Margins of Maize Farming

Talk at the 87th Annual Meeting of the Society for American Archaeology, Chicago, IL.

Kenneth B. Vernon, Jerry D. Spangler, Weston C. McCool, Peter M. Yaworsky, Simon C. Brewer, Brian F. Codding

2021

Explaining Paleoindian Settlement in the Intermountain West: A Regression Adjustment Approach

Talk at the 86th Annual Meeting of the Society for American Archaeology, San Francisco, CA.

Kenneth B. Vernon, David Zeanah, D. Craig Young, Robert G. Elston, Brian F. Codding

2019

Decomposing habitat suitability with theory-driven machine-learning

Talk at the 84th Annual Meeting of the Society for American Archaeology, Albuquerque, NM.

Kenneth B. Vernon, Peter M. Yaworsky, Brian F. Codding

2018

Prearchaic Land Use in Grass Valley, Nevada: This time with Bayes

Poster at the Bi-annual Great Basin Anthropological Conference, Salt Lake City, UT.

Kenneth B. Vernon, Peter M. Yaworsky, Kate E. Magargal, D. Craig Young, David Zeanah, Brian F. Codding

Prearchaic land use in Grass Valley, Nevada: A novel statistical implementation of optimal distribution modeling

Poster at the 83th Annual Meeting of the Society for American Archaeology, Washington D.C..

Kenneth B. Vernon, Peter M. Yaworsky, Kate E. Magargal, D. Craig Young, David Zeanah, Brian F. Codding

2015

Numic fires: modeling the effects of anthropogenic fire on foraging decisions in the Great Basin

Poster at the 80th Annual Meeting of the Society for American Archaeology, San Francisco, CA.

Kenneth B. Vernon, Kate E. Magargal, Ashley K. Parker, Will Rath, Brian F. Codding

Teaching

Teaching interests. Behavioral Ecology, Urban Science, Environmental Data Science, Statistics, Geography, Conservation & Sustainability, Human Prehistory, North American Prehistory.

University of Utah

- ANTH 1010: Culture and the Human Experience
- ANTH 1030: Introduction to World Prehistory
- ANTH 5850: Quantitative Analysis of Archaeological Data

Professional Affiliations

Great Basin Anthropological Association | 2016-present

Society for American Archaeology | 2014-present

Coalition for Archaeological Synthesis | 2022-present

European Association of Archaeologists | 2023-present

Service, Outreach, and Other Activities

Studio Lab | University of Colorado, Boulder, 2022-2024.
Mentor. Supporting undergraduate research.

Undergraduate Research Opportunities Program. | University of Utah, 2018-2022.
Mentor. Supporting undergraduate research.

Journal Club: Problems in Evolutionary Anthropology | University of Utah, 2018-2022.
Organizer.

Hopi Tribe v Donald J. Trump, Utah Diné Bikéyah v Donald J. Trump, Natural Resources Defense Council v Donald J. Trump | 2018.
Brief Amici Curiae of Archaeological Organizations in Support of Plaintiffs.
Contributor.

References

Available upon request.