

# Grant Snitker

July 2019

Department of Crop and Soil Sciences  
University of Georgia  
Athens, GA 30602

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## ACADEMIC APPOINTMENTS

Present	Postdoctoral Research Associate, Crop and Soil Sciences, University of Georgia
2012-17	Digital Curator, Digital Antiquity, Arizona State University
2014-16	Graduate Research Assistant, School of Human Evolution and Social Change, Arizona State University

## EDUCATION

2019	Ph.D. Anthropology, Grad. Certificate in Museum Studies, Arizona State University
2013	M.A. in Anthropology, Arizona State University
2010	B.A. in Anthropology, Clark Honors College, University of Oregon

## RESEARCH AND GEOGRAPHIC INTERESTS

Anthropogenic fire regimes	Global fire-prone ecosystems
Coupled social-ecological systems	Western North America
GIS and Bayesian modeling of land-use change	Western Mediterranean
Charcoal analysis and paleoecology	

## PUBLICATIONS

### *Peer-Reviewed Journal Articles*

2018	<b>Snitker, Grant.</b> Identifying Natural and Anthropogenic Prehistoric Fire Regimes through Simulated Charcoal Proxy Records. <i>Journal of Archaeological Science</i> 95: 1–15. doi: 10.1016/j.jas.2018.04.009
2018	<b>Snitker, Grant</b> Agustín Díez Castillo, C. Michael Barton, Joan Bernabeu Auban, Oreto García Puchol, and Salvador Pardo-Gordó. Patch-based survey methods for studying prehistoric human land-use in agriculturally modified landscapes: A case study from the Canal de Navarrés, eastern Spain. <i>Quaternary International</i> 483: 5–22. doi:10.1016/j.quaint.2018.01.034
2016	Díez Castillo, Agustín, Oreto García Puchol, Joan Bernabeu Aubán, C Michael Barton, Salvador Pardo Gordó, <b>Grant Snitker</b> , Wendy Cegielski, and Sean Bergin. Resiliencia y cambio durante el Holoceno en la Canal de Navarrés: recientes trabajos de prospección. <i>Archivo de Prehistoria Levantina</i> . 31:169-185.
2008	Erlandson, Jon M., Todd J. Braje, and <b>Grant Snitker</b> . Two chipped stone crescents from CA-SMI-680, Cardwell Bluffs, San Miguel Island, California. <i>Current Research in the Pleistocene</i> 25:81-83.

### ***Peer-Reviewed Book Chapters***

- 2016 Strawhacker, Colleen, **Grant Snitker**, Katherine Spielmann, Maryann Wasiolek, Jonathan Sandor, Ann Kinzig, and Keith Kintigh. *Risk Landscapes and Domesticated Landscapes: Food Security in the Salinas Province*. In Landscapes, Mobilities, and Social Transformations: Arriving at the Fifteenth Century in the Pueblo Rio Grande, edited by K. Spielmann, pp. 124–150. University of Arizona Press.

### ***Publicly Available Software and Scripts***

- 2018 **Snitker, Grant**. *Charcoal Record Simulation Model (CharRec): Version 1.5.0*. CoMSES Computational Model Library. Retrieval from: <https://www.comses.net/codebases/4795/releases/1.5.0/>
- 2018 **Snitker, Grant**. *Charcoal Quantification Tool macro for ImageJ (CharTool): Version 2.0*. Retrieval from: DOI: <http://doi.org/10.5281/zenodo.1434479>
- 2017 **Snitker, Grant**. *GIS charcoal source area model for archaeological applications (CharSource)*. R Script version 2.0. Retrieval from: Github, DOI: <http://doi.org/10.5281/zenodo.1434430>
- 2015 **Snitker, Grant**. *Long-Term Vulnerability and Transformation Project (LTVTP) Anticorrelation Script*. R Script version 1.0 Retrieval from: Github, DOI: <http://doi.org/10.5281/zenodo.1434432>

### ***Technical Reports and Non-Reviewed Publications***

- 2015 **Snitker, Grant**. *Anthropogenic Fire and Paleo-Charcoal Study at Chavez Pass, AZ: 2015 Report*. Submitted to the Coconino National Forest Supervisor's Office, Flagstaff, AZ.
- 2015 **Snitker, Grant**. *A Spatial Analysis of Archaeological Sites, Vegetation, and Artifacts within the Agua Fria National Monument: Legacies on the Landscape 2013 Field Season*. In Final Report of the Spring 2013 Field Season, Legacies on the Landscape: Agua Fria National Monument and Tonto National Forest, edited by Kate Spielmann, pp. 45-52. Submitted to the Bureau of Land Management, Phoenix, Arizona.
- 2014 Rivers-Cofield, Sara, Jodi Reeves Flores, Francis P. McManamon, Adam Brin, **Grant Snitker**, Chelsea Walter, Michael A. Smolek, and Amanda Vtipil. *Evaluating a Cooperative Approach to the Management of Digital Archaeological Records*. Submitted to Department of Defense Legacy Resource Management Program, Proj. 13-711.
- 2014 **Snitker, Grant**. “Notes from the Field” report on NSF-funded fieldwork in Valencia, Spain. Published in the SAA Geoarchaeology Interest Group Fall Newsletter.
- 2008 **Snitker, Grant**. Investigation and Identification of “Fourteen Willow Sticks” from the Chewaucan Cave Cache. *Current Archaeological Happenings in Oregon*. 33(3):6-7.

### ***Articles in Preparation***

- n.d. **Snitker, Grant**. Anthropogenic Fire and the Origins of Agricultural Landscapes: Human Niche Construction during the Neolithic Period in Eastern Spain. Intended for publication in *American Antiquity*.

- n.d. **Snitker, Grant.** Quantifying and classifying charcoal morphologies using image analysis and methods from machine-learning applications. Intended for publication in *The Holocene*.
- n.d. Strawhacker, Colleen, **Grant Snitker**, Matthew A. Peeples, Jacob Freeman, Kyle Bocinsky, Brad Butterfield, Sarah Oas, Ann P. Kinzig, Keith W. Kintigh, Margaret C. Nelson, Jonathan A. Sandor, and Katherine A. Spielmann Climate-Driven Risks to Food Security in the Prehispanic U.S. Southwest: Exploring Risk and Vulnerability from a Landscape Perspective. Intended for publication in *American Antiquity*.
- n.d. Bergin, Sean, and **Grant Snitker**. Vegetation Transformation during the European Neolithic: The Effects of Agro-Pastoral Subsistence on Plant Communities in Europe. Intended for publication in the *Journal of Archaeological Science*.

## GRANTS, FELLOWSHIPS, AND AWARDS

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### *Major External Research Grants*

- 2019-21 *LEIA Paleoenvironmental Pilot Project*. Role: Co-PI. University of Washington Quaternary Research Center Research Grant - \$10,820.
- 2016-18 *Anthropogenic Fire and the Origins of Agricultural Landscapes: Human Niche Construction during the Neolithic Period in Eastern Spain*. Role: Co-PI. National Science Foundation Doctoral Dissertation Research Improvement Award - \$28,861

### *Minor and Internal Research Grants*

- 2016 ASU Graduate Education Research Support Program Grant - \$1,795
- 2016 ASU School of Human Evolution and Social Change Graduate Research Award - \$3,000
- 2016 Arizona Archaeological and Historical Society Research Grant - \$500
- 2016 ASU Graduate and Professional Student Association Jumpstart Research Grant - \$500
- 2014 ASU School of Human Evolution and Social Change Graduate Research Award - \$1,780

### *Research Grants in Preparation*

- n.d. *Cascades Corridor Land-use Project: Evaluating changing land-use from the Late Pleistocene to the historic period through synthesized federal archaeological survey datasets*. PI: **Grant Snitker**. CI's: Sean Bergin (ASU), Peter Cadena (USFS), and Heather Davis (USFS). In preparation for submission to the Senior Archaeology and Methodology, Measurement, and Statistics program of the National Science Foundation, Summer 2019.
- n.d. *Comparative legacies of historic fuelwood use, forest maintenance, and fire in Mallorca, Spain and Southern California, USA*. PI: **Grant Snitker**. CI's: Gabriel Servera-Vives (University of the Balearic Islands), Llorenç Picornell-Gelabert (University of the Balearic Islands), Marcos Llobera (University of Washington). In preparation for submission to the Dynamics of Coupled Natural and Human Systems (CNH) program of the National Science Foundation, Fall 2019.

### ***Fellowships***

- 2018-19 ASU School of Human Evolution and Social Change Dissertation Completion Fellowship - \$18,000/year
- 2012-17 National Science Foundation Graduate Research Fellowship (GRFP), tuition and stipend - \$36,000/year for 3 years across a 5-year span

### ***Travel Grants***

- 2018 Association for Fire Ecology TREE (Travel, Research and Educational Experience) Grant - \$270
- 2018 ASU Graduate and Professional Student Association Individual Travel Grant - \$881
- 2016 ASU Graduate and Professional Student Association Group Travel Grant - \$3,150
- 2015 Association for Fire Ecology TREE (Travel, Research and Educational Experience) Grant - \$575
- 2012 ASU School of Human Evolution and Social Change Conference Travel Grant - \$200

### ***Honors, Awards, and Scholarships***

- 2017 ASU Ruppé Prize in Archaeology (Outstanding graduate student paper)
- 2016 ASU Institute for Social Science Research Graduate Student Poster Contest Winner
- 2015-17 ASU College of Liberal Arts and Sciences Graduate Excellence Award
- 2010 Oregon Archaeological Society Jones Scholarship

### **MAJOR RESEARCH PROJECTS**

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- 2018-Present *Cascades Corridor Land-use Project: Pilot Phase*  
*Position:* Principal Investigator; *Host Institution(s):* Arizona State University and Okanogan-Wenatchee National Forest, Cle Elum, WA; *Objective:* Compile forest-wide spatial synthesis of archaeological survey data to evaluate changing land-use intensities from the late Pleistocene to the historic period.
- 2017-Present *Landscape, Encounters, and Identity (LEIA) Project*  
*Position:* Researcher, GIS and charcoal Specialist; *Host Institution(s):* University of Washington and the Catalan Institute of Classical Archaeology; *Objective:* Understand landscape transformation and cultural change in Mediterranean pre- and proto-historic Mallorca, Spain; Use remote sensing and soil moisture measures to map prehistoric water sources with study area.
- 2015-Present *Anthropogenic Fire and the Origins of Agricultural Landscapes Project*  
*Position:* Co-Principal Investigator and Fieldwork Director; *Host Institution(s):* Arizona State University, and Universitat de València; *Objective:* Explore the process of niche-construction and anthropogenic fire during the transition to agro-pastoral subsistence in eastern Spain.

- 2015-Present *Prehistoric Fire Project at Chavez Pass, AZ*  
*Position:* Co-Principal Investigator and Fieldwork Director; *Host Institution(s):* Coconino National Forest, Flagstaff, AZ and Arizona State University; *Objective:* Develop and test GIS models of charcoal dispersion and deposition as related to prehistoric fire regimes on the Colorado Plateau.
- 2015-Present *Long-Term Vulnerabilities and Transformations Project (LTVTP)*  
*Position:* Researcher, GIS Specialist; *Host Institution(s):* Arizona State University; *Objective:* Evaluate the long-term social and ecological resilience of prehispanic (AD 900-1540) societies in the Greater U.S. Southwest using soil and climate models.
- 2017-18 *Communicating Hazard Information in the Modern Environment (CHIME) Project*  
*Position:* Researcher; *Host Institution(s):* Arizona State University and the National Center for Atmospheric Research; *Objective:* Improve hazardous weather risk communication and response by integrating models of extreme weather events and social perceptions of warnings and evacuation orders.
- 2014-18 *The Emergence of Coupled Natural and Human Landscapes in the Western Mediterranean (MedLand) Project*  
*Position:* Researcher, *Host Institution(s):* Arizona State University, and Universitat de València; *Objective:* Evaluate the emergence of coupled social-ecological systems on landscape erosion and deposition dynamics through modeled and empirical archaeological and paleoecological data from eastern Spain.

## TEACHING

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### University Courses

- Spring 2018 ASB 231: Intro to Archaeological Field Methods, Mesa Community College, Mesa, AZ  
 Lecturer for session on paleoecology and environmental archaeology.
- Spring 2018 ASB 326: Human impacts on the Environment, Arizona State University, Tempe, AZ  
 Lecturer for session on archaeology of the peopling of North America.
- Spring 2016 ASB 222: Buried Cities and Lost Tribes, Arizona State University, Tempe, AZ  
 Lecturer for session on archaeology of climate/environmental change.
- Spring/Fall 2016 ASM 484: Research Apprenticeship, Arizona State University, Tempe, AZ  
 Developed course to emphasize hands-on/participatory instruction in archaeology-related methods and theory for non-anthropology majors for two undergraduate cohorts.
- Summers 2010-11 ANTH 408: Fieldwork in Archaeology, University of Oregon, Eugene, OR  
 Led fieldwork-based instruction in excavation and survey methods for two cohorts.

### Lecture Series

- Fall 2017 Osher Lifelong Learning Institute Series, Arizona State University, Tempe, Arizona  
 Lecturer for session on general archaeological principles and methods for non-traditional students over the age of 50.

## CURATED MUSEUM EXHIBITS

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- 2012-16      **Snitker, Grant.** *The Agave Research Exhibit*. Curator, May 2012-September 2016, Deer Valley Petroglyph Preserve, Center for Archaeology and Society, Arizona State University, Phoenix, AZ.
- 2013          **Snitker, Grant.** *Looking for the Future in the Past: Archaeology's Long-Term View*. Contributor, February - May 2017, Center for Archaeology and Society, Arizona State University, Tempe, AZ.
- 2012-13      **Snitker, Grant.** *Changing Landscapes: A Closer Look at Baby Canyon Pueblo*. Curator, October 2012 – May 2013, Deer Valley Petroglyph Preserve, Center for Archaeology and Society, Arizona State University, Phoenix, AZ.

## PRESENTATIONS

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### *Symposia Organized*

- 2016          *Human-Environmental Interactions in the Mediterranean Basin*. Symposium at the 81st Annual Meeting of the Society for American Archaeology, in Orlando, FL. April 6-10, 2016. Co-organizer: Sean Bergin.

### *Invited Presentations*

- 2018          **Snitker, Grant.** *Identifying the Influence of Neolithic Agro-Pastoral Land-use on Holocene Fire Regimes through Simulated Sedimentary Charcoal Records*. Paper presented at the 24<sup>th</sup> Annual Meeting of the European Association of Archaeologists, Barcelona. September 5-8, 2018.
- 2018          Bergin, Sean and **Grant Snitker.** *Vegetation Transformation during the European Neolithic: The Effects of Agro-Pastoral Subsistence on Plant Communities in Europe*. Paper presented at the 24<sup>th</sup> Annual Meeting of the European Association of Archaeologists, Barcelona. September 5-8, 2018.
- 2018          Barton, C. Michael, Isaac I.T. Ullah, Nicolas Gauthier, Nari Miller, **Grant Snitker**, Irene Esteban, Joan Bernabeu Auban, and Arjun Heimsath. *'Digital Proxies' for Validating Models of Past Socio-Ecological Systems in the Mediterranean Landscape Dynamics Project*. Paper presented at the 24<sup>th</sup> Annual Meeting of the European Association of Archaeologists, Barcelona. September 5-8, 2018.
- 2018          **Snitker, Grant.** *The Nuts and Bolts of Agent-Based Modelling for Archaeological Science*. Paper presented during forum discussion at the 83<sup>rd</sup> Annual Meeting of the Society for American Archaeology, Washington, D.C. April 11-15, 2018.
- 2018          **Snitker, Grant.** *Anthropogenic Fire and the Origins of Agricultural Landscapes during the Neolithic Period (7,700-4,500 cal. B.P.) in Eastern Spain*. Paper presented at the 83<sup>rd</sup> Annual Meeting of the Society for American Archaeology, Washington, D.C. April 11-15, 2018.
- 2017          **Snitker, Grant.** *Fire, Humans, and Landscape Change: Simulating Charcoal Proxy Records to explore Anthropogenic Fire and Neolithic Landscapes in the Western*

*Mediterranean*. Paper presented at the COMSES Net Virtual Conference 2017, Tempe, AZ. Online October 2-20, 2017.

- 2017 Strawhacker, Colleen, **Grant Snitker**, Keith Kintigh, Ann Kinzig, and Katherine Spielmann. *Measuring Risk to Food Security in the Prehispanic U.S. Southwest: The Salinas Region in the Broader Southwest World*. Paper presented at the 82<sup>nd</sup> Annual Meeting of the Society for American Archaeology, Vancouver, B.C. March 29-April 2, 2017.
- 2016 **Snitker, Grant**. *Fire, Humans, and Landscape Evolution: Modeling Anthropogenic Fire and Neolithic Landscapes in the Western Mediterranean*. Paper presented at the 81<sup>st</sup> Annual Meeting of the Society for American Archaeology, Orlando, FL. April 6-10, 2016.
- 2015 **Snitker, Grant**. *Linking the Social and Ecological Dynamics of Anthropogenic Fire Regimes through Agent-Based Modeling (ABM) and Geographic Information Systems (GIS)*. Paper presented at the 6<sup>th</sup> Association for Fire Ecology Fire Congress, San Antonio, TX. November 16-20, 2015.
- 2013 McGovern, Thomas, Jette Arneborg, Seth Brewington, Laura Comeau, Andrew Dugmore, George Hambrecht, Keith Kintigh, Christian Madsen, Michelle Hegmon, Scott Ingram, Margaret Nelson, Richard Oram, Matthew Peeples, Brenda Shears, Ian Simpson, Konrad Smiarowski, **Grant Snitker**, Katherine Spielmann, Colleen Strawhacker, Andrea Torvinen, and Orri Vésteinsson. *Completed Long-Term Experiments? Mobilizing Archaeology in the Anthropocene*. Paper presented at the Theoretical Archaeology Group, Chicago, IL. May 9-11, 2013.

#### **Contributed Presentations and Posters**

- n.d. **Snitker, Grant** and Sean Bergin. *Did the Neolithic Revolution Revolutionize the European Landscape? An analysis of the relationship between climate, vegetation, and the arrival of agro-pastoral subsistence*. Poster to be presented at the 84<sup>th</sup> Annual Meeting of the Society for American Archaeology, Albuquerque, NM. April 10-14, 2019.
- 2018 Bergin, Sean and **Grant Snitker**. *Large-Scale Socioecological Transformation: The Effects of Subsistence Change on Holocene Vegetation across Europe*. Poster presented at the 83<sup>rd</sup> Annual Meeting of the Society for American Archaeology, Washington, D.C. April 11-15, 2018.
- 2017 Díez Castillo, A., **Grant Snitker**, Joan Bernabeu Aubán, Oreto García Puchol, Salvador Pardo Gordó, and C. Michael Barton. *Examen de las dinámicas socio-ecológicas en el valle medio del Xuquer (Valencia) desde el Paleolítico Medio hasta el Calcolítico*. Paper presented at the XII Congreso Ibérico de Arqueometría, Burgos, Spain. October 25-28, 2017.
- 2017 Ullah, Isaac I., Nicholas Gauthier, Nari V. Miller, and **Grant Snitker**. *Connecting the Human and Natural: Coupled Human-Earth Systems Models and the "Digital Proxy Record."* Poster presented at the 2017 Community Surface Dynamics Modeling System Annual Meeting, Boulder, CO. May 23-25, 2017.
- 2017 **Snitker, Grant**. *Reconstructing Anthropogenic Fire Regimes Using*

*Multidisciplinary Methods: Preliminary Results from the Neolithic (7,700–4,500 cal. BP) in Eastern Spain.* Paper presented at the 82<sup>nd</sup> Annual Meeting of the Society for American Archaeology, Vancouver, B.C. March 29-April 2, 2017.

- 2014 Diez Castillo, Agustín, Joan Bernabeu Aubán, Michael C. Barton, Oreto García Puchol, Sean Bergin, Salvador Pardo Gordó, Wendy H. Cegielski, and **Grant Snitker**. *Paperless survey? New methodological approaches to archaeological fieldwork, the case of La Canal de Navarrés (València).* Paper presented at the *Workshop: Dando sentido a la prospección arqueológica*, Jaén, Andalucía, Spain. November 13-14, 2014.
- 2014 **Snitker, Grant**. *Exploring the Dynamics of Anthropogenic Fire Regimes through Agent Based Modeling (ABM) and Geographic Information Systems (GIS).* Poster presented at the 79<sup>th</sup> Annual Meeting of the Society for American Archaeology, Austin, TX. April 23-27, 2014.
- 2014 Cegielski, Wendy, **Grant Snitker**, Gayle Timmerman, C. Michael Barton, and Bette Otto-Bliesner. *Reconstructing Local Paleoclimate Data with Global and Local Variables: A Re-examination of “Downscaling” with Updated Paleoclimate Models.* Poster presented at the 79<sup>th</sup> Annual Meeting of the Society for American Archaeology, Austin, TX. April 23-27, 2014.
- 2013 **Snitker, Grant**, Andrea Torvinen, and Rhian Stotts. *Testing the Application of Adaptive Governance of Common Pool Resources: An Archaeological Perspective.* Poster presented at the 78<sup>th</sup> Annual Meeting of the Society for American Archaeology, Honolulu, HI. April 3-7, 2013.
- 2012 Torvinen, Andrea, **Grant Snitker**, and Rhian Stotts. *Testing the Application of Adaptive Governance of Common Pool Resources: An Archaeological Perspective.* Poster presented at the 1<sup>st</sup> Annual Human Ecodynamics Research Center Open Workshop in Sustainability and Education, New York, NY. October 15, 2012.
- 2010 Jenkins, Dennis L., **Grant Snitker**, Craig E. Skinner, Jennifer J. Thatcher, Thomas M. Origer, and Janine M. Loyd. *Current Results of Obsidian Sourcing and Hydration Studies at the Paisley Caves, Oregon.* Paper presented at the 63<sup>rd</sup> Northwest Anthropological Conference, Ellensburg, WA. March 25-28, 2010.

## SERVICE

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### *Reviewer*

*Quaternary International; Palaeogeography, Palaeoclimatology, Palaeoecology*

### *Departmental Service*

- 2013-14 Treasurer, Association of All Graduate Students (AAGS), School of Human Evolution and Social Change, Arizona State University
- 2012-13 Mentor for incoming graduating students, School of Human Evolution and Social Change, Arizona State University

### *Public Lectures*



- 2017      *Anthropogenic Fire and the Origins of Agricultural Landscapes Human Niche Construction (HNC) during the Neolithic (7,700-4,200 cal. BP) in Eastern Spain.*  
University of Washington, Department of Anthropology, Friday Afternoon Archaeology Lecture Series.
- 2015      *Summary of 2015 Fieldwork.* Arizona State University, School of Human Evolution and Social Change, Summer Research and Fieldwork Symposium (SuRFS).

### ***Other Service***

- 2017-Present      Co-Organizer of Interagency Fire Archaeology Cohort monthly calls and meetings
- 2016      Intel International Science and Engineering Fair Grand Awards Judge, Behavioral and Social Sciences, Phoenix, AZ
- 2014-16      Conference Volunteer - 81<sup>st</sup> Annual Meeting of the Society for American Archaeology, Orlando, FL; 6<sup>th</sup> Annual Congress for the Association for Fire Ecology, San Antonio, TX; 79<sup>th</sup> Annual Meeting of the Society for American Archaeology, Austin, TX

### **OTHER PROFESSIONAL EXPERIENCE**

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- 2012-2018      Digital Curator, the Digital Archaeological Record (tDAR), Digital Antiquity, Arizona State University
- 2010-2018      Archaeology Technician, Archaeological Resource Advisor, and Qualified Wildland Firefighter (FFT2 Qualified and FFT1 Trainee) with the United States Forest Service (Okanogan-Wenatchee National Forest, WA; Coconino National Forest, AZ; Deschutes National Forest, OR)
- 2016      Klamath River Prescribed Fire Training Exchange (TREX), Collaboration between the United States Forest Service, the Nature Conservancy, and the Karuk Tribe.
- 2011-13      Exhibits and Collections Manager, Deer Valley Petroglyph Preserve, Center for Archaeology and Society, Arizona State University

### **PROFESSIONAL MEMBERSHIPS**

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ASU Graduate and Professional Student Association  
Interagency Fire Archaeology Cohort  
Society for American Archaeology

### **ADDITIONAL SKILLS**

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Advanced knowledge of R  
Intermediate knowledge of Python  
Advanced knowledge of GIS/Remote Sensing Software (QGIS, ESRI, GRASS GIS, MultiSpec) Trained Wildland Firefighter (ARCH Qualified, FFT2 Qualified, FFT1 Trainee)  
Advanced knowledge Microsoft Office products: Word, PowerPoint, Excel, Access