

Sean M. Bergin

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ACADEMIC EMPLOYMENT

Current Position Assistant Research Professor, School of Complex Adaptive Systems, Arizona State University, Tempe, AZ.

2017-2019 Postdoctoral Research Scholar, School of Human Evolution and Social Change, Arizona State University, Tempe, AZ.

EDUCATION

2016 Ph.D., Anthropology, Arizona State University

2005 M.A., Anthropology, University of Tulsa

2003 B.A., Anthropology, University of Notre Dame

RESEARCH INTERESTS

Long-term Socioecological Dynamics, Agent Based Modeling, GIS and Spatial Analysis, Complex Adaptive Systems, Subsistence Change, and Prehistoric Migration

RESEARCH

Major Research Projects

Network for Computational Modeling for Socio-ecological Science (CoMSES)

Position: Researcher. Host Institution: Arizona State University. Principle Investigators: C. M. Barton and Marco Janssen. Objective: The development and maintenance of a research network of computational modeling as well as the preservation and development of computational models. Period of affiliation: 2008–Present.

Cascade Corridor Landuse Project

Position: Principle Investigator, Co- Principle Investigator Grant Snitker. Host Institution: Arizona State University. Objective: The first systematic study of human-

environmental relationships in the high-elevation, alpine and subalpine meadows within the Central Cascade Mountains of Washington State. Period of affiliation: 2019–Present.

Communicating Hazard Information in the Modern Environment (CHIME) ABM

Position: Researcher. Host Institution: Arizona State University. Objective: Continuing the development of an agent-based model to study the flow of information leading up to and during hazardous weather events and how people who may be affected assess risk and make protective decisions. Period of affiliation: 2020–Present.

Mediterranean Landscape Dynamics Project

Position: Senior Researcher. Host Institution: Arizona State University. Principle Investigator: C. M. Barton. Field work locations: Jordan, Spain, Italy. Objective: Interdisciplinary project investigating early coupled human-natural systems in the Mediterranean, combining field survey with computational modeling. Period of affiliation: 2007–Present.

PUBLICATIONS

Books and Monographs

2021 Pardo Gordó, S. and **S. Bergin** (Eds). *Simulating Transitions to Agriculture in Prehistory*. Computational Social Sciences. Cham: Springer International Publishing.

Articles in Peer-Reviewed Journals

- In Review **Bergin, S.**, Joshua Alland, Rebecca Morss, and Michael Barton. CHIME ABM: Modeling information flow and decision making during hurricane threats. *The Journal of Open Source Software*.
- 2017 Henry, D. O., M. Belmaker and **S. Bergin**. The effect of terrain on Neanderthal ecology in the Levant. *Quaternary International*. 435: 94-105.
- 2016 Barton, C. M., I. Ullah, **S. Bergin**, H. Sarjoughian, G. Mayer, J. Bernabeu Aubán, A. Heimsath, M. Acevedo, J. Riel Salvatore, J. Arrowsmith. Experimental socioecology: Integrative science for anthropocene landscape dynamics. *Anthropocene*. 13: 34-45.
- 2015 Pardo Gordó, S., J. Bernabeu Aubán, O. García Puchol, C. M. Barton, **S. Bergin**. The origins of agriculture in Iberia: a computational model. *Documenta Praehistorica*, XLII: 117-131.
- 2015 Bernabeu Aubán, J., C. M. Barton, S. Pardo Gordó, **S. Bergin**. Modeling initial Neolithic dispersal. The first agricultural groups in West Mediterranean. *Ecological Modelling*. 307: 22–31.

- 2014 Henry, D. O., S. Kadowaki and **S. Bergin**. Reconstructing Early Neolithic Social and Economic Organization Through Spatial Analysis at Ayn Abū Nukhayla. American Antiquity. 79(3): 401-424.
- 2014 Rollins, N. D., C. M. Barton, **S. Bergin**, M. Janssen and A. Lee. A Computational Model Library for publishing model documentation and code. Environmental Modelling & Software. 61: 59-64.
- 2012 Barton, C. M., I. Ullah, and **S. Bergin**, H. Mitasova, and H. Sarjoughian. Looking for the Future in the Past: Long-Term Change in Socioecological Systems. Ecological Modelling. 241: 42-53.
- 2010 Barton, C. M., I. Ullah, and **S. Bergin**. Land use, water, and Mediterranean landscapes: modelling long-term dynamics of complex socio-ecological systems. Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences. 368 (1931): 5275 -5297.
- 2008 Janssen, M., L. Na Alessa, C. M. Barton, **S. Bergin** and A. Lee. Towards a Community Framework for Agent-based Modelling. Journal of Artificial Societies and Social Simulation. 11(2).

Articles in Edited Volumes

- 2021 **Bergin, Sean**. The Essential Geography of the Impresso-Cardial Neolithic Spread. In Simulating Transitions to Agriculture in Prehistory. Salvador Pardo-Gordó and Sean Bergin, eds. Pp. 29–46. Computational Social Sciences. Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-83643-6_3
- 2021 **Bergin, Sean**, and Salvador Pardo-Gordó. An Introduction to Simulating Transitions to Agriculture in Prehistory. In Simulating Transitions to Agriculture in Prehistory. Salvador Pardo-Gordó and Sean Bergin, eds. Pp. 1–16. Computational Social Sciences. Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-83643-6_1
- 2017 Pardo Gordó, S., **S. Bergin**, J. Bernabeu Aubán, C. M. Barton. Alternative Stories of Agricultural Origins: The Neolithic Spread in the Iberian Peninsula. In Times of Neolithic Transition Along the Western Mediterranean, edited by O. García Puchol and D. C. Salazar García. Springer, New York pp 101-134.
- 2014 **Bergin, S**. Under the Microscope: Edge Wear Analysis of Chipped Stone Artifacts. In The Sands of Time: The Desert Neolithic Settlement at Ayn Abū Nukhayla, edited by D. Henry and J. Beaver, Ex Oriente: Berlin pp 193-203.
- 2014 Henry, D. O., S. Kadowaki and **S. Bergin**. Stratigraphic Identification and Spatial Examination of House Floors at Ayn Abū Nukhayla. In The Sands of Time: The Desert Neolithic Settlement at Ayn Abū Nukhayla, edited by D. Henry and J. Beaver, Ex Oriente: Berlin pp 287-313.

- 2012 Ullah, I. and **S. Bergin**. Modeling the Consequences of Village Site Location: Least Cost Path Modeling in a Coupled GIS and Agent-Based Model of Village Agropastoralism in Eastern Spain. In Least Cost Analysis of Social Landscapes: Archaeological Case Studies, edited by D.A. White and S. L. Surface-Evans, University of Utah Press, Salt Lake City, pp 155-173.
- 2011 Henry, D. O., **S. Bergin** and S. Kadowaki. Tracing Floors and Fills in Early Neolithic Pithouses: An Example from the Excavation of Ayn Abū Nukhayla, Southern Jordan. In Between Sand and Sea. The Archaeology and Human Ecology of Southwestern Asia, edited by N.J. Conard, R.H. Meadow, A. Morales, and P. Drechsler. Festschrift in Honor of Hans-Peter Uerpmann. pp. 91-112. Kerns Verlag: Tübingen.

Additional Published Reports and Articles

- 2016 Diez-Castillo, A., O. Garcia-Puchol, J. Bernabeu Aubán, C. M. Barton, S. Pardo Gordó, G. Snitker, W. Cegelski, **S. Bergin**. Resiliencia y cambio durante el Holoceno en La Canal de Navarrés (Valencia): recientes trabajos de prospección. Archivo de Prehistoria Levantina. XXXI: 169-185.
- 2006 **Bergin, S.** and M. Senn. Book Review: Shovel Bum: Comix of Archaeological Field Work by Trent de Boer. *Lithic Technology* 31(2):147

Peer-Reviewed Computational Models

- 2022 Bergin, S., Michael Barton, Joshua Watts, Joshua Alland, and Rebecca Morss. CHIME ABM of Hurricane Evacuation. The Communicating Hazard Information in the Modern Environment (CHIME) agent-based model (ABM) is a Netlogo program that facilitates the analysis of information flow and protective decisions across space and time during hazardous weather events. Retrievable from: CoMSES Computational Model Library, doi:[10.25937/fqah-sj53](https://doi.org/10.25937/fqah-sj53).
- 2015 Barton, C. M., Isaac Ullah, Gary Mayer, **Sean Bergin**, Hessam Sarjoughian, Helena Mitasova. MedLanD Modeling Laboratory v.1. This is a modeling environment that couples an agent-based model of small-holder agropastoral households with a cellular landscape evolution model that simulates changes in erosion, deposition, soils, and vegetation. Retrievable from: CoMSES Computational Model Library, www.openabm.org/model/4609/
- 2012 **Bergin, S.** Torsten Hägerstrand's Spatial Innovation Diffusion Model. The purpose of this model is to understand the processes which create a "nebula-distribution," a common spatial pattern. This model explores the way that the diffusion of ideas across a social network might produce this pattern. Retrievable from: CoMSES Computational Model Library, www.openabm.org/model/3163/

Computational Models

- 2021 **Bergin, S. and J. Applegate.** Model of Rental Evictions in Phoenix During the Covid-19 Pandemic. The purpose of this model is to explore the dynamics of residency and eviction for households renting in the greater Phoenix (Arizona) metropolitan area. Retrievable from: CoMSES Computational Model Library, <https://www.comses.net/codebases/4db84f11-90a2-4d2e-a2c9-ea43574b5c46/>
- 2020 **Bergin, S.** The Geographic Expansion Model. This model simulates different the effect of ecological conditions upon the spread of agriculture in the Western Mediterranean. Retrievable from: CoMSES Computational Model Library, <https://www.comses.net/codebases/d57eded8-0513-43a1-9842-7a8404c32472/>
- 2020 Claudine Gravel-Miguel, **Sean Bergin.** Game of Thrones model. CoMSES Computational Model Library. Retrievable from: <https://www.comses.net/codebases/08e45650-f6a9-4c26-a99f-2938e7d8cbdc/releases/1.7.0/>
- 2016 **Bergin, S.** The Cardial Spread Model. This model simulates different ecological conditions and spread hypotheses proposed for the introduction of agriculture in the Western Mediterranean. Retrievable from: CoMSES Computational Model Library, www.openabm.org/model/5278/
- 2015 **Bergin, S.,** C. Michael Barton, Salvador Pardo Gordó, Joan Bernabeu Aubán. Neolithic Spread Model Version 1.0. This model simulates different spread hypotheses proposed for the introduction of agriculture on the Iberian peninsula. We include three dispersal types: neighborhood, leapfrog, and ideal despotic distribution (IDD). Retrievable from: CoMSES Computational Model Library, www.openabm.org/model/4447/
- 2013 **Bergin, S.,** and Christopher Roberts. Relational Social Interaction Model of Migration (RSIMM). Current trends suggest that when individuals of different cultural backgrounds encounter one another, their social categories become entangled and create new hybridized or creole identities. To understand the effects this entanglement has on styles of material culture we created an agent-based model that plays out the process of cultural entanglement and tracks the results this has on human action. Retrievable from: CoMSES Computational Model Library, www.openabm.org/model/2297/
- 2008 **Bergin, S.** Hegmon's Model of Sharing. This is a replication of a model developed by Michelle Hegmon to aid an understanding the effect sharing strategies have on household survival. Retrievable from: CoMSES Computational Model Library, www.openabm.org/model/2217/

GRANTS, FELLOWSHIPS & AWARDS

Research Grants

- 2021-2026 Frameworks: Collaborative Research: Integrative Cyberinfrastructure for Next-Generation Modeling Science. NSF 20-592 Cyberinfrastructure for Sustained Scientific Innovation (CSSI). PI: Michael Barton, co-PI: Marco Janssen, Allen Lee, Sean Bergin and Kenneth Buetow.
- 2014-2016 New Perspectives in Archaeology: The Socio-ecological Agent-based Modeling of the Early Bronze Age I of Arslantepe (Malatya). PI: B. Arıkan. Foreign Researchers: I.I.T. Ullah, and S. Bergin (PI's/CI's limited to Turkish nationals only). Research grant from TUBITAK, The Scientific and Technological Research Council of Turkey, Research and Development Funding Program.

Fellowships

- 2015-2016 Arizona State University Dissertation Completion Fellowship

Awards

- 2012 The Reynold Ruppé Prize in Archaeology, awarded each year to the best paper in archaeology by a graduate student at Arizona State University. Paper entitled: Complex objects, entangled lives: using Germanic animal art as a record of culture contact in early medieval England.
- 2012 Outstanding Graduate Student Paper Award – Arizona Center for Medieval and Renaissance Studies.
- 2003 Rev. Raymond W. Murray C.S.C. Award: award in Anthropology, for the outstanding senior majoring in Anthropology, University of Notre Dame.

TEACHING EXPERIENCE

University Courses

- 2022 Socioecological Complex Systems. Fall Session, Arizona State University, Tempe, AZ.
- 2022 International Winter School: Agent-Based Modeling of Social-Ecological Systems. January 18-28, Arizona State University, Tempe, AZ.
- 2021 Socioecological Complex Systems. Fall Session, Arizona State University, Tempe, AZ.
- 2021 International Winter School: Agent-Based Modeling of Social-Ecological Systems. January 4-15, Arizona State University, Tempe, AZ.

- 2020 International Winter School: Agent-Based Modeling of Social-Ecological Systems. January 6-10, Arizona State University, Tempe, AZ.
- 2019 Fall Session. Arizona State University, Tempe, AZ.
“Agent-based Modeling in Archaeology.”
- 2019 International Winter School: Agent-Based Modeling of Social-Ecological Systems. January 7-11, Arizona State University, Tempe, AZ.
- 2018 Spring Session. Arizona State University, Tempe, AZ.
“Human Impacts on the Environment: An Archaeological Perspective.”
- 2015 Spring Session. Arizona State University, Tempe, AZ.
“Buried Cities and Lost Tribes.” Guest Lecturer
- 2011 Summer Session. Arizona State University, Tempe, AZ.
“Castro de Néixon International Field School.” Summer field-school, core-curriculum course.
- 2006 Spring Semester. University of Tulsa, Tulsa OK.
“Prehistory of the Near East.” Upper division elective course.

PROFESSIONAL PRESENTATIONS

Symposia Organized

- 2018 Modeling the Spread of Agriculture: The Application of Computational Modeling Techniques to the Neolithic Transition. Symposium organized by Sean Bergin and Salvador Pardo-Gordó for the European Archaeological Association in Barcelona, Spain.
- 2017 Simulation in Archaeology: New Approaches to Old Questions. Symposium organized by Sean Bergin for the CoMSES Net Virtual Conference, Fall.
- 2016 Human-Environmental Interactions in the Mediterranean Basin. Symposium organized by Sean Bergin and Grant Snitker at the 81st annual meeting of the Society for American Archaeology, in Orlando, FL.
- 2013 New Directions in Modeling Dynamics in Coupled Social-Natural Systems. Symposium organized by Sean Bergin and chaired by C. Michael Barton and Sander van der Leeuw at the 78th annual meeting of the Society for American Archaeology, in Honolulu, HI.
- 2007 The Multi-Disciplinary Research Results: Investigation of Ayn Abū Nukhayla, An Early Neolithic Settlement in Southern Jordan. Symposium organized by Donald Henry, Joseph E. Beaver and Sean Bergin at the 72nd annual meeting of the Society for American Archaeology, in Austin, TX.

Presented Papers and Posters

- 2021 Snitker, G. and **S. Bergin**. *R-based solutions for synthesizing archaeological survey data to assess changing land-use patterns in the Okanagan-Wenatchee National Forest, WA*. Poster Presentation at the 85th Annual Meeting of the Society for American Archaeology.
- 2021 Alland, Joshua J. Rebecca E Morss, Christopher A Davis, Jennifer Boehnert, Olga Wilhelmi, **Sean Bergin**, and C Michael Barton. *Evacuation Decision-Making During Hurricane Michael (2018): A Comparison Between Perfect and Imperfect Forecasts*. Paper Presented at the 34th Conference on Hurricanes and Tropical Meteorology.
- 2019 Barton, C. M., J. Demuth, R.E. Morss and **S. Bergin**. *Modeling risk and decision-making in an information-rich social environment: the CHIME project*. Presentation at the Annual Meeting of the Society for Risk Analysis in Arlington, VA.
- 2019 Snitker, G. and **S. Bergin**. *Did the Neolithic Revolution Revolutionize the European Landscape? An Analysis of the Relationship between Demography, Vegetation, and the Arrival of Agro-pastoral Subsistence*. Poster Presentation at the 84th Annual Meeting of the Society for American Archaeology in Albuquerque, NM.
- 2018 **Bergin, S.**, and G. Snitker. *Vegetation Transformation During the European Neolithic: The Effects of Agro-pastoral Subsistence on Plant Communities in Europe*. Presentation at the European Archaeological Association in Barcelona, Spain.
- 2018 **Bergin, S.** Discussant for the symposium: *The nuts and bolts of agent-based modelling for archaeological science* at the 83rd Annual Meeting of the Society for American Archaeology in Washington D.C.
- 2018 **Bergin, S.**, and G. Snitker. *Large-scale Socioecological Transformation: The Effects of Subsistence Change on Holocene Vegetation Across Europe*. Poster Presentation at the 83rd Annual Meeting of the Society for American Archaeology in Washington D.C.
- 2017 **Bergin, S.**, Salvador Pardo Gordó, Michael Barton, Joan Bernabeu Aubán, Nicolas Gauthier, and Ricky Robertson. *Testing Social and Ecological Drivers for the Initial Spread of Agriculture in the Western Mediterranean*. Invited paper presented at the 82nd Annual Meeting of the Society for American Archaeology in Vancouver, Canada.
- 2017 **Bergin, S.** *Neolithic Agropastoral Expansion: An Evaluation of Theoretical Models Using an Agent-Based Model of the Neolithic Spread in the Western Mediterranean*. Paper presented at the CoMSES Net Virtual Conference.

- 2017 **Bergin, S.** Discussant for the symposium *Modeling Agro-Pastoralism in Eurasia*. At the 82nd Annual Meeting of the Society for American Archaeology in Vancouver, Canada.
- 2016 **Bergin, S.** *Neolithic Spread Models, Agricultural Islands and Pivotal Parameters: Impressions Gleaned from Simulating the Spread of Agriculture in the West Mediterranean*. Invited paper presented at the 81st Annual Meeting of the Society for American Archaeology in Orlando, FL.
- 2015 Barton, C. M., M. A. Janssen, D. Parker, A. Lee, **S. Bergin**, N. D. Rollins. *Opening the Black Box: Enabling Transparency in Scientific Computation*. Invited paper presented at the 80th Annual Meeting of the Society for American Archaeology in San Francisco, CA.
- 2015 **Bergin, S.** *Modeling the Influx of Agriculture: An Agent-Based Model Exploring Agricultural Spread Scenarios in the Western Mediterranean*. Poster Presentation at the 80th Annual Meeting of the Society for American Archaeology in San Francisco, CA.
- 2014 **Bergin, S.**, C. M. Barton, S. Pardo Gordó and J. Bernabeu Aubán. *Alternative Histories of Agricultural Origins: Testing models for the spread of food producing economies in the Iberian Peninsula*. Invited paper presented in the symposium “Dispersión humana y cultural durante la transición neolítica. Expansiones humanas y culturales durante la Transición Neolítica: Sistemas Complejos y Prehistoria” at the XVII Mundial Congress of Prehistoric and Protohistoric Sciences, Burgos.
- 2014 Henry, Donald O., M. Belmaker and **S. Bergin**. *The Influence of Landscape on Neanderthal Range Viewed from the Levant*. Presented in the session “Neanderthals on their own terms: new perspectives for the study of Middle Paleolithic behavior” at the XVII Mundial Congress of Prehistoric and Protohistoric Sciences, Burgos.
- 2014 **Bergin, S.** *The agent-based modeling of agropastoral land use during the Early Bronze Age-I Arslantepe-Malatya*. Invited paper presented in the symposium “Environmental Change: Data, Process, and Integrated Modeling” at the European Archaeological Association Annual Meeting, Istanbul.
- 2014 Diez Castillo, A., J. Bernabeu Aubán, C. M. Barton, O. García Puchol, **S. Bergin**, S. Pardo Gordó, W. H. Cegielski, and G. 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, Making sense of archaeological survey,” Jaén.
- 2013 Barton, C.M., **S. Bergin**, J. Bernabeu Auban and S. Pardo Gordo. *Modeling Neolithic Dispersal in Iberia*. Invited paper presented in the session “Complex Systems in Prehistoric Research” at the European Conference on Complex Systems, Barcelona.
- 2013 **Bergin, S.** and C. M. Barton. *Dimensions of Human Land-Use Practices: An Exploration of Socio-Natural Interactions in Neolithic Spain*. Invited paper presented in the

symposium “New Directions in Modeling Dynamics in Coupled Social-Natural Systems” at the 78th annual meeting of the Society for American Archaeology, Honolulu, HI.

- 2013 Roberts, C. and **S. Bergin**. *Hypothesis Testing in the Humanities? A Digital Contribution to the Debate on Early “Germanic” Identity*. Presented in the session “The Sciences and Medieval Studies: New Approaches, New Questions,” sponsored by the Department of History, University of Southern California and organized by J. Haar. 48th International Congress on Medieval Studies, Kalamazoo, MI.
- 2012 **Bergin, S.**, I. Ullah, C. M. Barton, and C. Gravel-Miguel. *Human-Environment Interactions in a Changing Environment: A Computational Model of Agropastoral Practices and Landscapes in Neolithic Spain*. Invited paper presented in the symposium “Socio-natural systems in pastoral and agro-pastoral societies: Archaeological investigations of pastoral landscapes” at the 77th annual meeting of the Society for American Archaeology, Memphis, TN.
- 2011 Roberts, C. and **S. Bergin**. Complex objects, entangled lives: using Germanic animal art as a record of culture contact in early medieval England. Paper presented at the 76th Annual Meeting of the Society for American Archaeology in Sacramento, CA.
- 2011 **Bergin, S.** Isaac Ullah, Bulent Arikian, C. Michael Barton, Gary Mayer and Hessam Sarjoughian. *Simulating Neolithic Landscape Dynamics: A Coupled ABM-GIS Model of Agro-Pastoral Systems in Eastern Spain*. Poster Presentation at the 76th Annual Meeting of the Society for American Archaeology in Sacramento, CA.
- 2011 Ullah, I. C. M. Barton, **S. Bergin**, H. Sarjoughian and G. Mayer. *Simpler is better: lessons from modeling coupled human and natural systems in the Mediterranean Landscape Dynamics Project*. Poster Presentation at the 76th Annual Meeting of the Society for American Archaeology in Sacramento, CA.
- 2010 Barton, C. Michael, I. Ullah, G. Mayer, H. Sarjoughian, **S. Bergin**, A. Miller, & H. Mitasova. *Coupled Models for Coupled Systems: Land-Use and Landscape Dynamics in the Mediterranean*. Invited symposium paper presented to the Annual Meeting of the American Association of Geographers, Washington, DC.
- 2010 **Bergin, S.** Isaac Ullah, Michael Barton, Gary Mayer and Hessam Sarjoughian. *Coupled ABM-GIS Modeling of Agro-Pastoral Systems in Eastern Spain*. Poster Presentation at the 75th Annual Meeting of the Society for American Archaeology in St. Louis, MO.
- 2009 **Bergin, S.**, Isaac Ullah and Gary Mayer. *A Coupled ABM-GIS model of small-scale farming*. Poster Presentation at the North American Association for Computational Social and Organizational Sciences Meeting in Tempe, AZ.
- 2009 **Bergin, S.**, and Alexandra E. Miller. *Paleoclimate Modeling and the Drivers of Early Neolithic Expansion in Mediterranean Europe*. Presentation at the 74th annual meeting of the Society for American Archaeology in Atlanta, GA.

- 2007 **Bergin, S.**, Donald Henry, and Seiji Kadowaki. *The Development of Occupational Histories at Ayn Abū Nukhayla, an 8,500 Year Old Early Neolithic Settlement in Southern Jordan*. Presentation at the 72nd annual meeting of the Society for American Archaeology in Austin, TX.
- 2007 Janssen, M. and **S. Bergin**. *Developing a Model Library*. Presentation at the Integrating Socio-Ecological Sciences Through a Community Modeling Framework, Workshop at Arizona State University, Tempe, AZ.
- 2005 **Bergin, S.** *Diachronic Change of Lithic Industries from the Early to Late Medio Period, Chihuahua, Mexico*. Poster Presentation at the 70th annual meeting of the Society for American Archaeology in Salt Lake City, UT.

SERVICE

- 2021-2022 College of Global Futures academic standards committee member.
- 2019 Leader of an Agent-Based Modeling Club for graduate students and faculty in the School of Human Evolution & Social Change. The club is designed to be a forum for reading and discussing research as well as a platform for developing practical Netlogo coding skills.
- 2009-2010 President of the Association of All Graduate Students in SHESC (AAGS). Responsible for the direction of the School of Human Evolution and Social Change graduate student group and for the representation of SHESC graduate students at monthly faculty meetings.
- 2008-2009 Treasurer for the Association of All Graduate Students in SHESC (AAGS). Responsible for the finances of the School of Human Evolution and Social Change graduate student group.

TECHNICAL EXPERTISE

GIS and Geospatial Technologies especially the GRASS GIS and ArcGIS packages as well as the QGIS and MultiSpec Programs.
Agent-based modeling platforms including Repast and Netlogo.
Proficiency in various programming languages including Java, Logo, Python and R.

PROFESSIONAL REFERENCES

C. Michael Barton	Arizona State University	email: Michael.Barton@asu.edu
Isaac Ullah	San Diego State University	email: iullah@sdsu.edu
Marco Janssen	Arizona State University	email: Marco.Janssen@asu.edu