

Florida Museum of Natural History, University of Florida

<https://nick-gauthier.github.io>

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RESEARCH INTERESTS

Human ecology, land use, climate dynamics, social simulation, cultural evolution, Earth system science, social-ecological networks, environmental data science

EDUCATION

- 2019 **Ph.D.** in Anthropology, **Arizona State University**
Committee: C. Michael Barton (chair), John M. Anderies, Matthew Peeples
- 2015 **M.A.** in Anthropology, **Arizona State University**
Advisor: C. Michael Barton
- 2013 **B.A.** in Archaeology, **Boston University**
Advisor: Christopher H. Roosevelt

ACADEMIC EMPLOYMENT

- 2022- | **Assistant Curator** Florida Museum of Natural History, University of Florida.
Artificial Intelligence for Cultural and Biological Diversity.

Affiliate UF Department of Geography, Department of Anthropology, School of Natural Resources and the Environment, Emerging Pathogens Institute, Florida Climate Institute.
- 2021 | **Postdoctoral Scholar**, Scripps Institution of Oceanography.
Geosciences Research Division: Holocene climate reconstruction in east and southeast Asia, Jade d’Alpoim Guedes (PI).
- 2019-21 | **Postdoctoral Research Associate**, University of Arizona.
Employed under NSF-supported “**P2C2**: Spatiotemporal variability in western United States snowpack during the Common Era,” Kevin Anchukaitis (PI).
- 2015-18 | **Graduate Research Associate**, Arizona State University.
Employed under NSF-supported “**CNH**: The emergence of coupled natural and human landscapes in the western Mediterranean,” C. Michael Barton (PI).
- 2013-19 | **Graduate Research Associate**, Arizona State University.
Employed under NSF-supported “Collaborative research **EaSM2**: Linking human and Earth System models to assess regional impacts and adaptation in urban systems and their hinterlands,” Brian O’Neill (PI).

- 2024 | J. Brame, C. Liddicoat, C. Abbott, R. Edwards, J.M Robinson, **N. Gauthier**, M. Breed. “The macroecology of butyrate-producing bacteria via metagenomic assessment of butyrate production capacity” **Ecology and Evolution**, 14 (5). e11239. doi:10.1002/ece3.11239.
- 2023 | Lobo, J., R.M. Aggarwal, M. Alberti, M. Allen-Dumas, L. Bettencourt, C. Boone, C. Brelsford, V. Castán Broto, H. Eakin, S. Bagchi-Sen, S. Meerow, C. D’Cruz, A. Revi, D. C Roberts, M.E. Smith, A. York, T. Lin, X. Bai, W. Solecki, D. Pataki, L. Bojorquez Tapia, M Rockman, M Wolfram, P Schlosser, **N Gauthier**. “Integration of urban science and urban climate adaptation research: opportunities to advance climate action.” **npj Urban Sustainability**, 3 (32). doi:10.1038/s42949-023-00113-0.
- Crawford, K., A. Huster, M. Peeples, **N. Gauthier**, Smith, M.E., J. Lobo, A. York, D. Lawrence. “A systematic approach for studying the persistence of settlements in the past.” **Antiquity**, 97 (391). 213-230. doi:10.15184/aqy.2022.175.
- 2022 | **Gauthier, N.**, K.J. Anchukaitis, B. Coulthard. “Pattern-based downscaling of snowpack variability in the western United States.” **Climate Dynamics**, 58 (11). 3225-3241. doi:10.1007/s00382-021-06094-z.
- Degroot, D., K.J. Anchukaitis, J. Tierney, F. Riede, A. Manica, E. Moesswilde, **N. Gauthier**. “The history of climate and society: A review of the influence of climate change on the human past.” **Environmental Research Letters**, 17 (103001). doi:10.1088/1748-9326/ac8faa.
- 2021 | Ellis, E.C., **N. Gauthier**, K. Klein Goldewijk, R. Bliege Bird, N. Boivin, S. Diaz, D. Fuller, J. Gill, J. Kaplan, N. Kingston, H. Locke, C. McMichael, D. Ranco, T. Rick, M.R. Shaw, L. Stephens, J.C. Svenning, J.E.M. Watson. “People have shaped most of terrestrial nature for at least 12,000 years.” **PNAS**, 118 (17). doi:10.1073/pnas.2023483118.
- Smith, M.E., J. Lobo, M. Peeples, A. York, B. Stanley, K. Crawford, **N. Gauthier**, A. Huster. “The persistence of ancient settlements and urban sustainability.” **PNAS**, 118 (20). doi.org/10.1073/pnas.2018155118.
- Quinn, J., E. Cook, **N. Gauthier**. “Patterns of vertebrate richness across global anthromes: prioritizing conservation beyond biomes and ecoregions.” **Global Ecology and Conservation**, 27. doi::10.1016/j.gecco.2021.e01591
- Gauthier, N.** “Hydroclimate variability influenced social interaction in the prehistoric American Southwest.” **Frontiers in Earth Science**, 8 (731). doi:10.3389/feart.2020.620856
- 2019 | Stephens, L., D. Fuller, N. Boivin, T. Rick, **N. Gauthier**, A. Kay, B. Marwick (lead authors, with 113 contributing authors). “Archaeological assessment reveals Earth’s early transformation through land use,” **Science**, 365 (6456). 897-902. doi:10.1126/science.aax1192
- Khider, D., J. Emile-Geay, N.P. McKay, Y. Gil, D. Garijo, V. Ratnakar (lead authors, with 87 contributing authors including **N. Gauthier**). “PaCTS 1.0: A Crowdsourced Reporting Standard for Paleoclimate Data,” **Paleoceanography and Paleoclimatology**. doi:10.1029/2019PA003632

- 2018 | Barton, C. M., E. Tortosa, O. Puchol, J. Riel-Salvatore, **N. Gauthier**, M. Conesa, G. Pothier-Bouchard. “Risk and resilience in the Late Glacial: A case study from the western Mediterranean,” **Quaternary Science Reviews**, 184. 68-84. doi:10.1016/j.quascirev.2017.09.015
- 2016 | **Gauthier, N.** “The spatial pattern of climate change during the spread of farming into the Aegean,” **Journal of Archaeological Science**, 75. 1-9. doi:10.1016/j.jas.2016.09.004.
- 2012 | **Gauthier, N.** “Pax Seleuciana: Archaeological approaches to ethnicity in the Hellenistic east,” **Vexillum** 2 (2012). www.vexillumjournal.org.

BOOK CHAPTERS

- 2024 | Pailles, M.C., L.M. Norman, C.H. Baisan, D.M. Meko, **N. Gauthier**, J. Villanueva-Diaz, J. Dean, J. Martínez, N.V. Kessler, R. Towner. “Ancient Infrastructure Offers Sustainable Agricultural Solutions to Dryland Farming.” In *Soil and Drought*, edited by R. Lal. **CRC Press**. doi:10.1201/b22954-11
- 2021 | **Gauthier, N.** “The dynamics of risk perception in a Mediterranean agroecosystem.” In *Simulating the Transition to Agriculture and Its Ecological and Cultural Consequences*, edited by S. Pardo-Gordó and S. Bergin. **Springer International**. doi:10.1007/978-3-030-83643-6_7.
- Barton, C.M., I. Ullah, **N. Gauthier**, N. Miller, G. Snitker, I. Esteban, J. Bernabeu-Aubán, A. Heimsath. “Digital Proxies for Validating Models of Past Socio-Ecological Systems in the Mediterranean Landscape Dynamics Project.” In *Simulating the Transition to Agriculture and Its Ecological and Cultural Consequences*, edited by S. Pardo-Gordó and S. Bergin. **Springer International**. doi:10.1007/978-3-030-83643-6_10.

CODE AND DATA

- 2022 | **Gauthier, N.** “R source code for *The dynamics of risk perception in a Mediterranean agroecosystem*” **Zenodo**. doi:10.5281/zenodo.4927097.
- 2021 | **Gauthier, N.**, K. Anchukaitis, B. Coulthard “Downscaled 8km March Snow Water Equivalent Estimates for the Western US, 1901-2010”. **Zenodo**. doi:10.5281/zenodo.5110319.
- Gauthier, N.** “R source code for *Pattern-based downscaling of snowpack variability in the western United States*.” **Zenodo**. doi:10.5281/zenodo.5110395.
- Gauthier, N.**, E.C. Ellis, K.K. Goldewijk. “Anthromes 12K DGG (V1) Full Dataset.” **Harvard Dataverse**. doi:10.7910/DVN/E3H3AK.
- Gauthier, N.** “Anthromes 12K DGG (V1) analysis code and R research compendium.” **Harvard Dataverse**. doi:10.7910/DVN/6FWPZ9.
- 2019 | **Gauthier, N.**, B. Marwick, ArchaeoGLOBE Project. “ArchaeoGLOBE Repository.” **Harvard Dataverse** doi:10.7910/DVN/6ZXAGT.
- Gauthier, N.** “ArchaeoGLOBE Animations.” **Harvard Dataverse**. doi:10.7910/DVN/SFGZBS.

PREPRINTS AND WORKING PAPERS

- 2019 | **Gauthier, N.** “Multilevel simulation of demography and food production in ancient agrarian societies: A case study from Roman North Africa.” **SocArXiv** preprint doi:10.31235/osf.io/5be6a.
- Gauthier, N.** “Trade, migration, and the dynamics of spatial interaction.” **SocArXiv** preprint: doi:10.31235/osf.io/trbf8.

POPULAR ARTICLES

- 2021 | **Gauthier, N.** “Droughts, Floods, and Social Infrastructure in the Pre-Hispanic US Southwest.” **Bulletin of the Old Pueblo Archaeology Center**. June 2021 Edition, Number 85. Tucson.

AWARDS AND HONORS

- 2024 | **Eric Grimm Award for Excellence in Open Science and Data Stewardship**. American Quaternary Association.
- 2023 | **Convergence Research (CORE) Institute Fellow**. “Tackling Climate Induced Challenges with AI.” San Diego Supercomputing Center & NSF Convergence Accelerator.
- 2020 | **University of Arizona Sursum Fellow**. University of Arizona.
- 2017 | **Graduate Excellence Award**. College of Liberal Arts and Sciences Arizona State University.
- 2015 | **Reynold Ruppé Prize in Archaeology** for best paper in archaeology by a graduate student at ASU: “The spatial pattern of climate change during the spread of farming into the Aegean.” School of Human Evolution and Social Change, Arizona State University.

GRANTS AND FELLOWSHIPS

- 2024 | “**NSF DISES-EX**: Simulating social-ecological cascades during the second plague pandemic.” **PI**. \$749,786.
- “**UF Research Opportunity Seed Fund**: AI-Enable Virtual Microscopy for Museum Collections and Geoscience Research.” **PI**. \$97,984.
- “**NSF DEB**: Collaborative Research: Diversification, Disjunction, and Decline in the Mediterranean Basin: Insights from Endemic Bellflowers (Campanulaceae).” **Co-PI**. \$1,126,562
- 2023 | **Burroughs Wellcome Fund Climate Change and Human Health Seed Grant**. “Detecting long-term patterns of climate-pathogen covariability.” **PI**. \$49,824.
- UF Biodiversity Institute Seed Grant**. “Biodiversity survey in the Calusa realm: Bridging biological and cultural heritage conservation.” **Co-PI**.
- UF Smathers Library Graduate Internship** “Integrating Natural Language Processing and Computer Vision for Natural History Collections.” **Co-PI**.

- 2022 | “**NSF RAPID**: Collaborative Research: Assessing Archaeological Storm Damage from Hurricane Ian.” **Co-PI**. \$43,563.
- 2020 | **Postdoctoral Research Development Grant**. “Towards integrated hindcasts of past socio-environmental systems.” University of Arizona. \$1,955.
- Travel Grant**. PAGES-INQUA ECR workshop: Past Socio-Environmental Systems. \$750.
- 2018 | **Collaborative Research Grant. Co-PI**. ASU Center for Bioarchaeological Research. \$4,850
- Travel Grant**. ASU Graduate and Professional Student Association. \$950.
- 2017 | **Graduate Visitor Fellowship**. National Center for Atmospheric Research, Advanced Study Program. Host: Peter Lawrence. \$6,750.
- Graduate College Travel Award**. ASU Graduate College. \$200.
- Travel Grant**. ASU Graduate and Professional Student Association. \$950.
- Nick Ryan Bursary**. Computer Applications in Archaeology Conference. \$295.
- 2016 | **Group Travel Grant**. ASU Graduate and Professional Student Association. \$630.
- 2015 | **Travel Grant**. ASU Graduate and Professional Student Association. \$950.
- 2013 | **Graduate Research Associate Fellowship**. ASU. \$18,000/yr through 2020.
- Conference Travel Grant**. ASU SHESC Research Committee. \$250.
- Conference Participation Travel Award**. Boston University Undergraduate Research Opportunities Program. \$350.
- “Quantifying the Spatial Variability of Archaeological Sediments in Thin Section.” **Student Research Award, Renewal**. Boston University Undergraduate Research Opportunities Program. \$1,600.
- 2012 | “Quantifying the Spatial Variability of Archaeological Sediments in Thin Section.” **Student Research Award**. Boston University Undergraduate Research Opportunities Program. \$1,200.
- Mapping Responses to Climate Change in Bronze Age Lydia. **CAS Summer Research Scholar**. Boston University. Undergraduate Research Opportunities Program. \$4,000.
- Platt Fellowship**. American Schools of Oriental Research. \$1,000.
- 2009 | **Dean’s Scholarship**. Boston University. \$30,000/yr, through 2013.

- 2024 | **Gauthier, N.**, D. Bird,[‡] and K. Blahnik.[‡] “Variational Autoencoders for Efficient and Interpretable Climate Downscaling.” Poster to be presented at the **American Geophysical Union Fall Meeting**, Washington, DC.
- Gauthier, N.** and D. Bird.[‡] “Climate variability synchronizes long-term human population dynamics.” Poster presented at the **Society for American Archaeology** New Orleans.[†]
- Rutkoski, A.[‡], **N. Gauthier**, N. Wallis, A. Torvinen, A. Cordell. “Enhancing Ceramic Petrography Through Deep Learning.” Poster presented at the **Society for American Archaeology** New Orleans.[†]
- 2023 | **Gauthier, N.** and G. Hamerlinck. “Climate Variability Shaped the Course of the Black Death and Second Plague Pandemic.” Paper presented at the **American Geophysical Union Fall Meeting**, San Francisco.
- Anchukaitis, K., B. Coulthard, **N. Gauthier**, J. Adler, G. Pederson, S. Gray, S. Hostetler. “Reconstructed snowpack variability in the western United States over the last millennium.” Paper presented at the **American Association of Geographers Annual Meeting**, Denver.
- 2022 | Bird, D., **N. Gauthier**, J. Freeman. “Lucky Latitudes: The Geography of Prehistoric Human Population Growth.” Paper presented at the **28th Annual Meeting of the European Association of Archaeologists**, Budapest.
- Gauthier, N.** “Simulating agropastoral land use and landscape change in the Mediterranean.” Paper presented at the **2022 Gwendolen Carter Conference**, online.[†]
- 2021 | **Gauthier, N.** “Toward a data assimilation paradigm for paleodemography.” Paper presented at the **PAGES/PEOPLE 3k** fall workshop, Tempe. †
- Anchukaitis, K., B. Coulthard, **N. Gauthier**, G. Pederson, S. Gray. “Reconstructed and simulated snowpack variability in the western United States over the last millennium.” Paper presented at the **American Geophysical Union Fall Meeting**, New Orleans.
- Gauthier, N.** “An open-source modeling pipeline for past demography and land use.” Paper presented at the **PAGES/PEOPLE 3k** virtual workshop. †
- 2020 | **Gauthier, N.** “Simulating Population Growth, Food Production, and Social Interaction in Semiarid Environments: Pattern, Process, and Feedbacks.” Paper to be presented at the **PAGES-INQUA joint ECR workshop: Past Socio-Environmental Systems**, La Serena, Chile. (Postponed due to Covid-19)
- Gauthier, N.** “Drought regimes influenced social interaction in the US Southwest.” Poster presented at the **17th biennial Southwest Symposium Archaeological Conference**, Tempe.
- Aldenderfer, M., D. Bird, K. Douglass, **N. Gauthier**, S. Ingram, B. Scaffidi. “Climate migrants of the past, present, and future.” Paper presented at the **26th Annual Meeting of the European Association of Archaeologists**, Budapest. †

- 2019 | **Gauthier, N.** “Generalized Additive Mixed Models for Spatial Networks.” Poster presented at the **84th Annual Meeting of the Society for American Archaeology**, Albuquerque.
- Wissler, A., and **N. Gauthier.** “The Frailty-Mortality Paradox: Insights from the Spanish Flu Pandemic of 1918.” Poster presented at the **84th Annual Meeting of the Society for American Archaeology**, Albuquerque.
- 2018 | **Gauthier, N.** “Agent-based modeling of anthropogenic land cover change: A case study from Roman North Africa.” Paper presented at the **NCAR Land Model, Biogeochemistry, and Social Dimensions Working Group** meetings, Boulder.
- Gauthier, N.** “Forum: the nuts and bolts of agent-based modelling for archaeological science.” Invited discussant at the **83rd Annual Meeting of the Society for American Archaeology**, Washington, D.C. †
- Gauthier, N.** “Agricultural niche construction in Roman North Africa: Simulating irrigation and deforestation on a desert margin.” Poster presented at the **83rd Annual Meeting of the Society for American Archaeology**, Washington, D.C.
- Barton, C. M., I. Ullah, **N. Gauthier**, N. Miller, G. Snitker, I. Esteban, J. Bernabeu-Aubán, A. Heimsath. “Digital Proxies for Validating Models of Past Socio-Ecological Systems in the Mediterranean Landscape Dynamics Project.” Paper presented at the **24th Annual Meeting of the European Association of Archaeologists**, Barcelona. †
- 2017 | **Gauthier N.** “Placing people in the environment: Coupling agent-based land-use and earth system models.” Symposium paper presented at the **CoMSES Net Virtual Conference**. †
- Gauthier, N.** “Parametric uncertainty in a simple model of a social-ecological network.” Symposium paper presented at the **2017 Computer Applications and Quantitative Methods in Archaeology** conference, Atlanta. †
- Gauthier, N.**, M. Peeples. “Drought variability and the robustness of agrarian social networks.” Poster presented at the **82nd Annual Meeting of the Society for American Archaeology**, Vancouver.
- Ullah, I., **N. Gauthier**, N. Miller, G. Snitker. “Connecting the human and the natural: Coupled human-earth systems models and the digital proxy record.” Poster presented at the **Community Surface Dynamics Modeling System Annual Meeting**, Boulder.
- Bergin, S., S. Pardo-Gordó, C. M. Barton, J. Bernabeu-Aubán, **N. Gauthier.** “Testing social and ecological drivers for the initial spread of agriculture on the Iberian Peninsula.” Paper presented at the **82nd Annual Meeting of the Society for American Archaeology**, Vancouver. †

- 2016 | **Gauthier, N.** “Agricultural risk management in Mediterranean environments: a computational modeling approach.” Symposium paper presented at the **81st Annual Meeting of the Society for American Archaeology**, Orlando. †
- Barton, C. M., E. Tortosa, O. Puchol, J. Riel-Salvatore, **N. Gauthier**, M. Conesa, and G. Pothier-Bouchard. “Risk and Resilience in the Late Glacial: a Case Study from the Western Mediterranean.” Keynote presentation at **MEDINES - Late Glacial to Early Holocene Socio-ecological responses to climatic instability within the Mediterranean Basin**, Tarragona. †
- 2015 | **Gauthier, N.** “Creating high resolution climate reconstructions from statistically downscaled palaeoclimate simulations.” Paper presented at the **21st Annual Meeting of the European Association of Archaeologists**, Glasgow.
- Gauthier, N.**, C. Luke, and C. Roosevelt. “Extreme Weather Events and 10,000 Years of Land-Use Change in the Gediz River Valley.” Symposium poster presented at the **80th Annual Meeting of the Society for American Archaeology**, San Francisco. †
- 2014 | Luke, C., C. Roosevelt, **N. Gauthier**, K. Egerer. “Water and People in the Marmara Lake Basin (Middle Gediz), Western Turkey.” Paper presented at **QuickLakeH 2014 - An International Workshop on Lakes and Human Interactions**, Ankara.
- 2013 | **Gauthier, N.** and E. Wallace. “Image Analysis, GIS, and the Microstratigraphy of Occupation Deposits from Tell es-Sweyhat, Syria.” Paper presented at the **2013 Annual Meeting of the American Schools of Oriental Research**, Baltimore.
- Gauthier, N.** “Quantifying the Spatial Variability of Archaeological Sediments in Thin Section.” Paper presented at the **78th Annual Meeting of the Society for American Archaeology**, Honolulu.

INVITED PUBLIC TALKS

- 2024 | **Randell Research Seminar Seminar Series.** Pine Island, FL.
- 2023 | “Extending the Data Revolution for Biological and Cultural Diversity,” **UF AI Days** (with Rob Guralnick, Arthur Porto, and Jacob Idec). AI² Center, University of Florida.
- 2022 | “Computational ge archaeology across scales,” **Geological Sciences Seminar Program.** University of Florida.
- “Putting People in the Earth System,” **Department of Geography Colloquium.** University of Florida.
- Biology and Paleo Environment Seminar Series.** Lamont-Doherty Earth Observatory, Columbia University.
- Early Career Scientists Symposium.** University of Michigan Department of Ecology and Evolutionary Biology.
- Florida Museum of Natural History Seminar Series.** Oak Hammock Institute for Learning in Retirement.
- 2021 | “**Third Thursday Food for Thought**” dinner series. Old Pueblo Archaeology Center, Tucson.
- 2020 | **School of Geography and Development Colloquium.** University of Arizona, Tucson.
- 2019 | “Reconstructing land use and global environmental change in the Holocene,” **School of Anthropology Lecture Series.** University of Arizona, Tucson.
- “Hydroclimate variability influenced social interaction in the prehistoric American Southwest,” **Laboratory of Tree-Ring Research Brown-Bag Talk.** University of Arizona, Tucson.

TEACHING AND MENTORING

- 2024 | **Instructor**, “ANG6930 Advanced Data Analysis for Archaeology.” UF Department of Anthropology.
Mentor, Olivia Zhang and Daniel Cho, “FLMNH Undergraduate Internship Program.”
Mentor, Kyle Stamm, “Undergraduate Research Scholars Program” & “ANT4907: Undergraduate Research in Anthropology.”
- 2023 | **Instructor** “GEO4938/6938 & ANT4930/6930 Artificial Societies and Social Simulation.” UF Departments of Geography and Anthropology.
Mentor, William Pitts, “UF Emerging Scholars Program” & “GIS4911: Undergraduate Research in Geospatial Trends.”
Mentor, Aniruddh Chandrasekhar, “BSC 4913: Independent Research in Bioinformatics.”
Mentor, Heon Heo, “AI Scholars Fellow.”
Mentor, Daniel Cho, “Florida Climate Institute Student Climate Fellow.”
Mentor, Llilimar Aguila Ramos and Jessica McCarten. “FLMNH IDEA Internship Program.”
Mentor, Jackson Grieser and Qingyu Zhang. “GeoGator Summer Research Program.”
- 2022 | **Instructor**, “GEO3930 Spatial Agent-Based Modeling.” UF Department of Geography.
- 2020 | **Panelist**, “LGBTQ+ Fieldwork Panel.” Out in STEM (oSTEM) at the University of Arizona.
Judge, “Earth Week Lightning Talks.” University of Arizona School of Earth and Environmental Sciences.
- 2019 | **Instructor**, “Building a Website.” University of Arizona School of Geography and Development professional development seminar.
- 2018 | **Instructor**, “Winter School: Agent-Based Modeling of Social-Ecological Systems.” Arizona State University Global Biosocial Complexity Initiative.
Guest Lecturer, “ASB 326: Human impacts on the environment: An archaeological perspective.” Arizona State University, Spring semester.
- 2014 - 16 | **Mentor**, “Undergraduate Apprenticeship Program.” Arizona State University School of Human Evolution and Social Change.

FIELDWORK

- 2016 **Bova Marina Archaeological Project.** Calabria, Italy. Pedestrian survey, architectural recording, geodatabase management.
- 2016 **Eastern Cibola Archaeological Project.** New Mexico, USA. Pedestrian survey, ceramic analysis.
- 2014 - 15 **Kaymakçı Archaeological Project.** Manisa Province, Turkey. Stratigraphic excavation, flotation, soil-chemistry sampling, 3-d photography of excavation areas.
- 2014 **US-Mexico Border Water and Environmental Sustainability Training Program.** Sonora, Mexico. Field spectrometry, micro UAV and balloon aerial photography, electrical resistivity survey, seismic refraction survey.
- 2012 - 14 **Central Lydia Archaeological Survey.** Manisa Province, Turkey. Pedestrian survey, electrical resistivity survey, 3-d scanning and photogrammetry.

COMPUTER SKILLS

- Technical: Agent-based social simulation, climate modeling, GIS, remote sensing/image analysis, statistical and machine learning.
- Software: AgiSoft Photoscan, ArcGIS, Blender, CESM, GRASS GIS, ImageJ, L^AT_EX, NetLogo, NextEngine Scanstudio, Python, R, SQL, Unix.

WORKSHOPS AND TUTORIALS

- 2023 **AI Strategic Communications Program.** UF Center for Public Interest Communications.
- 2022 **Applications of AI for Anomaly Detection.** NVIDIA Deep Learning Institute.
- 2018 **Functionally Assembled Terrestrial Ecosystem Simulator Tutorial.** National Center for Atmospheric Research.
- 2017 **Last Millennium Reanalysis Workshop and Hackathon.** National Oceanic and Atmospheric Administration, National Center for Atmospheric Research.
- 2016 **Community Earth System Model Tutorial.** National Center for Atmospheric Research.

SERVICE AND PROFESSIONAL AFFILIATIONS

- Reviewer: Advances in Archaeological Practice, Environmental Archaeology, Frontiers in Earth Science, Global and Planetary Change, Human Ecology, Journal of Archaeological Science, Journal of Computer Applications in Archaeology, Journal of Field Archaeology, Journal of Human Evolution, Journal of Mountain Science, Journal of Open Source Software, Nature Communications, Nature Sustainability, Network for Computational Modeling in Social and Ecological Sciences, Springer Nature, Trends in Ecology and Evolution, ASU Graduate and Professional Student Association Travel Program, UA Postdoctoral Research Development Grant Program.
- Member: American Geophysical Union, Global Land Programme, Past Global Changes, PEOPLE-3k, Society for American Archaeology, Coalition for Archaeological Synthesis.