

Jayde N. Hirniak

School of Human Evolution and Social Change
Institute of Human Origins, Arizona State University
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EDUCATION

- 2019- Current Ph.D. Anthropology Program, Arizona State University
Committee: Dr. Curtis W. Marean, Dr. Christopher Campisano, and Dr. Eugene I. Smith
- 2019 M.A. in Anthropology, Arizona State University
Committee: Dr. Curtis W. Marean, Dr. Christopher Campisano, and Dr. Michael Barton
- 2016 Bachelor of Science in Evolutionary Anthropology, Rutgers University
Senior Honors Thesis: Spatial and temporal analysis of paleoanthropological data associated with paleo-Lorenyang Lake
Primary Advisor: Dr. Craig S. Feibel
Secondary Advisor: Dr. Gail M. Ashley

RESEARCH INTERESTS

Tephrochronology, cryptotephra, modern human origins, geoarchaeology, site formation processes, reconstructing paleoenvironments, paleoclimate, sedimentology, stratigraphy

ACADEMIC APPOINTMENTS

- 2019- Current **Institute of Human Origins Presidential Research Assistant**, Arizona State University, Tempe, AZ
Co-manager of Sediment and Tephra Preparation (STEP) Laboratory
Supervisors: Dr. Curtis W. Marean, Dr. Chris Campisano
- 2017- 2021 **Graduate Research Associate**, School of Human Evolution and Social Change, Arizona State University, Tempe, AZ
South African Coast Paleoclimate, Paleoenvironment, Paleoecology, Paleoanthropology Project (SACP4)
Supervisor: Dr. Curtis W. Marean
- 2014-2017 **Research Assistant**, Rutgers Paleoenvironmental Reconstruction Lab- New Brunswick, NJ
Hominins Sites and Paleolakes Drilling Project, Geoinformatics Project of the Turkana Basin
Supervisor: Dr. Craig S. Feibel

PEER-REVIEWED PUBLICATIONS

- In Prep **Hirniak, Jayde N.**, Murray, John K., and Zipkin, Andrew M. ‘Impact of heat treatment on the geochemistry of four South African silcrete sources’, *Journal of Archaeological Science*.
- 2020 **Hirniak, Jayde N.**, Smith, Eugene I., Johnsen, Racheal, Ren, Minghua, Hodgkins, Jamie, Orr, Caley, Negrino, Fabio, Riel-Salvatore, Julien, Fitch, Shelby, Miller, Christopher E., Zerboni, Andrea, Mariani, Guido S., Harris, Jacob A., Gravel-Miguel, Claudine, Strait, David, Peresani, Marco, Benazzi, Stefano, Marean, Curtis W. ‘Discovery of cryptotephra at Middle–Upper Paleolithic sites Arma Veirana and Riparo Bombrini, Italy: a new link for broader geographic correlations’, *Journal of Quaternary Science*. John Wiley & Sons, Ltd, pp. 1–14. doi: 10.1002/jqs.3158

TEACHING EXPERIENCE

- 2019-2022 **Teaching Assistant**, School of Human Evolution and Social Change, Arizona State University, Tempe, AZ
ASB 100: Introduction to Global Health
ASB 355: Traditional Medicine and Healing
ASB 305: Poverty and Global Health
ASB 330: Understanding Archaeology
- 2021-Current **Instructor**, Robinson Ranch, Phoenix, AZ
Foundations of Horsemanship
Horsemanship I
Horsemanship II
- 2019-Current **Lecturer**, Arizona State Prison Complex, Florence, AZ
Prison Geology Education Program
Prison Biology Education Program
- Fall 2016 **Teaching Assistant**, Turkana Basin Institute Origins Field School, Turkana, Kenya
GEO 303/GEO 504: Sedimentary Geology and Geochronology
ANP 304/ANT 505: Ecology: Linking People and Nature
ANP 305/ANT505: Earth & Life Through Time
ANP 306/ANT 506: Human Evolution
ANT 307/ANT 507: Prehistoric Archaeology of Africa

UNDERGRADUATE MENTORSHIP

- 2019-Current **SHESC Research Apprenticeship Program**, Arizona State University
- Research Project: The use of cryptotephra to more accurately date and link archaeological sites
2022-2023: Kimberly Hartle
2020-2022: Felicia King

Research Project: Mediterranean and African Volcanic Database Project
2021-2022: Andriana Means
2020-2021: Alexander Seng

Research Project: Pilot Study: Ostrich Eggshell Use-wear
Co-Mentor: John Murray
2021-2022: Elie Knight
2020-2022: Dwight Courtney
2020-2021: Brooke Mangum

Research Project: Building high-resolution archives of archaeological sites through the production of photomosaics
2019-2020: Horacio Cabadas

FIELD EXPERIENCE

- 2022 **Field Specialist**, Boomplaas Cave, Cango Valley, South Africa
Co-directors: Dr. Justin Pargeter and Dr. Tyler Faith
- 2021-2022 **Independent Researcher**, Arizona State University, Ehrenberg Field Survey and Sample Collection, Chemehuevi Formation, AZ
- 2019 **Student**, The International Field School on Site Formation, Stratigraphy, and Geoarchaeology in the Athenian Agora, The Malcom H. Wiener Laboratory for Archaeological Sciences, Athens, Greece
Supervisors: Dr. Takis Karkanis and Dr. Paul Goldberg
- 2019 **Student Researcher**, University of Nevada Las Vegas Field Survey, Millard County, NV
- 2018 **Field Specialist**, Riparo Bombrini Archaeological Project, Balzi Rossi, Italy
Co-directors: Dr. Julien Riel-Salvatore and Dr. Fabio Negrino
- 2017-2018 **Field Specialist**, Arma Veirana Archaeological Project, Erli, Italy
Co-directors: Dr. Jamie Hodgkins and Dr. Caley Orr
- 2017 **Student Researcher**, Vleesbaai Archaeological Project, Vleesbaai,
Director: Dr. Simen Oestmo
- 2017 **Student Researcher**, South African Coast Paleoclimate, Paleoenvironment, Paleoecology, Paleoanthropology Project (SACP4), Mossel Bay, South Africa –Archaeological excavations at site Pinnacle Point 5-6
Director: Dr. Curtis W. Marean
- 2016, 2018 **Student Researcher**, Knysna Archaeological Project, Knysna, South Africa
Director: Dr. Naomi Cleghorn

Spring 2015 **Student**, Turkana Basin Institute Origins Field School, Turkana, Kenya-
Student
Projects: The role of *Musca sorbens* and livestock in the transmission of
Trachoma, Mesowear analysis of local livestock
Director: Dr. Jason Lewis

LABORATORY AND MUSEUM EXPERIENCE

2022 **Visiting Researcher**, GFZ German Research Centre for Geosciences,
Potsdam, Germany

2021-Current **Independent Researcher**, Accessory Mineral (Apatite-Zircon) IN-situ
Geochronology (AMAZING) Lab, Arizona State University, Tempe, AZ
Supervisor: Dr. Melanie Barboni

2021 **Visiting Researcher**, Continental Scientific Drilling (CSD) Facility,
University of Minnesota, Minneapolis, MN

2020 **Student Researcher**, UCLA Ion Microprobe Student Workshop

2017, 2019 **Visiting Researcher**, Cryptotephra Laboratory for Archaeological
and Geological Research (CLAR), University of Nevada Las Vegas,
Las Vegas, NV
Supervisor: Dr. Eugene Smith

2015 **Research Assistant**, NJ State Museum, Trenton, NJ
Microfaunal analysis on fossiliferous material from Red Hills Road Cave
in the parish of St. Andrews, Jamaica
Supervisors: David C. Parris, Rodrigo Pellegrini

INTERNAL GRANTS

2022 Donald C. Johanson Paleoanthropological Research Endowment,
Institute of Human Origins, Arizona State University (\$1000)

2018, 2021, School of Human Evolution and Social Change (SHESC) Travel Grant,
2022 Arizona State University (\$130)

2021 School of Human Evolution and Social Change (SHESC) Dissertation
Research Award, Arizona State University (\$3000)

2021 Graduate & Professional Student Association (GPSA) Support for Gold
Dissertation Writing Camp, ASU (\$50)

2018-2021 Graduate & Professional Student Association (GPSA) Travel Grant,
Arizona State University (\$652, \$730, \$907, \$950)

- 2020 Graduate & Professional Student Association (GPSA) Graduate Research Grant for Independent Research, Arizona State University (\$730)
- 2018 Graduate & Professional Student Association (GPSA) Graduate Research Grant for master's research, Arizona State University (\$780)
- 2015 Bigel Scholarship, Rutgers University (\$1000)

EXTERNAL GRANTS

- 2021 LacCore/CSDCO Visiting Graduate Student Travel Grant (\$1000)
- 2018 INTAV Early Career Researcher (ERC) Travel Grant, International Field Conference on Tephrochronology (\$500)

AWARDS

- 2018-2022 The College Graduate Excellence Award, Arizona State University
- 2021 Art, Archaeology and Conservation Science Division of the American Ceramic Society Best Student Paper Award, Geological Society of America
- 2021 School of Human Evolution and Social Change (SHESC) Award for Excellence in Graduate Achievement in Archaeology, Arizona State University
- 2020 The College Student Leader 2020-2021, College of Liberal Arts and Sciences, Arizona State University
- 2020 Reynold Ruppé Prize in Archaeology
- 2019 Developing International Geoarchaeology (DIG) Best Student Paper Award
- 2019 Graduate & Professional Student Association (GPSA) Outstanding Mentor Award, Arizona State University
- 2019 2nd Place, Graduate & Professional Student Association (GPSA) Research Grant Ceremony
- 2018 INTAV Best Student Poster Award, International Field Conference on Tephrochronology
- 2016 Senior Thesis High Honors, Rutgers University

ACADEMIC AND COMMUNITY ENGAGEMENT

- 2021-2022 Co-founder and head organizer of School of Human Evolution and Social Change (SHESC) Mentorship Program
- 2021-2022 Association of All Graduate Students (AAGS)
Vice President (2021-2022)
Secretary (2020-2021)
Events Committee (2020-2021)
Mentor for incoming students (2018)
- 2020-2022 Student Representative for Geological Society of America (GSA) Continental Scientific Drilling Division (CSDD)
- 2019-2022 Student Ambassador for the Society for Archaeological Sciences
- 2018-2022 Graduate & Professional Student Association (GPSA) Grant Reviewer
Research Grants (2018-2022)
Publication Grants (2020)
- 2017-2022 Volunteer, Institute of Human Origins
Judge for Lucy Space Contest (2021)
Arizona Museum of Natural History: Meet the Scientist (2018-2022)
Writer, BecomingHuman.org (2020)
Lead volunteer for visiting high schools (2019)
ASU Open Door (2018-2019)
Judge at the Self Development Academy (2017)
- 2020 Organizer, Virtual Cryptotephra Journal Club
- 2018-2020 Mentor and Lead Teacher, Graduate Partners in Science Education (GPSE) Advanced Science Club (<http://gpse.asu.edu/>)
- 2019 Co-organizer for SHESC Archaeology Brown Bag

VOLUNTEERED PRESENTATIONS

- 2022 **Hirniak, Jayde N.** *The potential for building a late Pleistocene tephrochronological framework for archaeological sites in South Africa using cryptotephra.* 2022, GFZ German Research Centre for Geosciences, Potsdam, Germany.
- 2021 **Hirniak, Jayde N.** *Constructing a late Pleistocene tephrochronological framework for archaeological sites in South Africa using cryptotephra.* 2021, Continental Scientific Drilling (CSD) Facility, University of Minnesota, Minneapolis, MN.
- 2018 **Hirniak, Jayde N.** *Examining the details: How cryptotephra can transform archaeology.* 2018 Arizona Museum of Natural History Archaeological Expo, Mesa, AZ.

2017, 2019 Volunteer Speaker at Annual Summer Research and Fieldwork Symposium, Arizona State University

PROFESSIONAL AFFILIATIONS

2022 International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI)

2022 New York Academy of Sciences

2019-2022 Society for Archaeological Sciences

2019-2022 Geological Society of America

2018-2022 Society for American Archaeology

2021 European Geosciences Union

2018-2020 Paleoanthropology Society

2015 Undergraduate Affiliate of Center of Human Evolutionary Studies (CHES)

CONFERENCE ABSTRACTS

2022 **Hirniak, Jayde N.**, 2022, *Challenges working in archaeological sediments*, Presentation at the UK Tephra Workshop, Royal Holloway University of London in Egham, United Kingdom.

2022 **Hirniak, Jayde N.**, Smith, Eugene I., Johnsen, Racheal, Ren, Minghua, Campisano, Chris, Marean, Curtis W., 2022, *Examining the details: The use of extremely low abundance (ELA) cryptotephra in archaeological research*, Presentation at the UK Tephra Workshop, Royal Holloway University of London in Egham, United Kingdom.

2022 **Hirniak, Jayde N.**, Murray, John K., Zipkin, Andrew M., 2022, *Developing an empirical calibration for elemental characterization and sourcing of South African silcrete with pXRF*, Poster presented at the Society for American Archaeology in Chicago, Illinois.

2021 **Hirniak, Jayde N.**, Smith, Eugene I., Johnsen, Racheal, Ren, Minghua, Campisano, Chris, Marean, Curtis W., 2021, *The potential for building a late Pleistocene tephrochronological framework for archaeological sites in South Africa using cryptotephra*, Geological Society of America Abstracts with Programs, v. 53, no. 6, <https://doi.org/10.1130/abs/2021AM-371046>

- 2021 Murray, John K., **Hirniak, Jayde N.**, Zipkin, Andrew M., 2021, *Impact of heat treatment on geochemistry of three silcrete sources near Pinnacle Point, South Africa*, Geological Society of America Abstracts with Programs, v. 53, no. 6, <https://doi.org/10.1130/abs/2021AM-371184>
- 2021 **Hirniak, Jayde N.**, Murray, John K., and Zipkin, Andrew M., 2021, *Impact of heat treatment on silcrete geochemistry*, Institute for Social Science Research Poster Contest, Arizona State University.
- 2021 Smith, Eugene I., Johnsen, Racheal, Ren, Minghua, **Hirniak, Jayde N.**, Fisher, Campisano, Chris, Marean, Curtis W., 2021, *Discovery of the Youngest Toba Tuff in South Africa; Challenges of Extremely Low Abundance Cryptotephra*, Paper presented at the Goldschmidt Conference in Lyon, France, <https://par.nsf.gov/biblio/10278334>
- 2020 **Hirniak, Jayde N.**, Smith, Eugene I., Johnsen, Racheal, Ren, Minghua, Hodgkins, Jamie, Negrino, Fabio, Marean, Curtis W., 2020, *Tephrochronological dating of archaeological deposits using non-visible glass shards*, Virtual live paper presentation at The Great Scientific Exchange 2020.
- 2019 **Hirniak, Jayde N.**, Smith, Eugene I., Johnsen, Racheal, Ren, Minghua, Fitch, Shelby, Marean, Curtis W. *Discovery of cryptotephra at Middle-Upper Paleolithic sites Arma Veirana and Riparo Bombrini, Italy: A new link for broader geographic correlations*, Paper presented at the Developing International Geoarchaeology meeting in Burnaby, Canada.
- 2019 **Hirniak, Jayde N.**, Smith, Eugene I., Johnsen, Racheal, Ren, Minghua, Fitch, Shelby, Marean, Curtis W. *Using cryptotephra in archaeology: precise correlations and improved age estimates*, Paper presented at the Society for American Archaeology meeting in Albuquerque, New Mexico.
- 2019 Smith, Eugene I., Johnsen, Racheal, **Hirniak, Jayde N.**, Marean, Curtis W. *Cryptotephra studies in Africa: a tool for precise dating and continental correlation of archaeological sites*, Paper presented at the Society for American Archaeology meeting in Albuquerque, New Mexico.
- 2019 Butts, Clancey, Murray, John K., **Hirniak, Jayde N.**, Keller, Hannah, Cleghorn, Naomi. *An undisturbed Earlier Stone Age locality on the southern coast of South Africa, exposed by fire*. Poster presented at the Society for American Archaeology meeting in Albuquerque, New Mexico.
- 2018 **Hirniak, Jayde N.**, Smith, Eugene I., Johnsen, Racheal, Fitch, Shelby, Orr, Caley, Strait, David, Ren, Minghua, Miller, Christopher E., Negrino, Fabio, Riel-Salvatore, Julien, Peresani, Marco, Benazzi, Stefano, Gravel-Miguel, Claudine, Marean, Curtis W., Hodgkins, Jamie. *Using Cryptotephra to Link Neanderthal and Modern Human Middle Paleolithic Sites in NW Italy*, Poster presented at the INQUA-INTAV International

Field Conference and Workshop: Crossing New Frontiers in Transylvania, Romania.

- 2018 Smith, Eugene I., Johnsen, Racheal, **Hirniak, Jayde N.**, Fitch, Shelby, Orr, Caley, Ren, Minghua, Strait, David, Miller, Christopher, Negrino, Fabio, Riel-Salvatore, Julien, Peresani, Stefano, Gravel-Miguel, Claudine, Marean, Curtis W., Hodgkins, Jamie, 2018, *Rhyolite cryptotephra identified in Mousterian Deposits at Arma Veirana, Italy*, Poster presented at the Paleoanthropology Society 2018 Meeting: Paleoanthropology 2018-A33.

SYMPOSIA ORGANIZED

- 2022 **Jayde N. Hirniak**, Simon Blockley, and Christine Lane. “Correlating Distal Tephra: Methodological Challenges and Solutions”. UK Tephra Workshop at the Royal Holloway University of London, Egham, United Kingdom.
- 2021 **Jayde N. Hirniak** and Marie Jackson. “Reading the record of volcanic tephra in geoarchaeological site studies and drill core correlations”. Geological Society of America meeting in Portland, Oregon.
- 2021 **Jayde N. Hirniak** and Hannah Keller. “Human Origins Migration and Evolution Research Consortium Poster Symposium”. Society for American Archaeology meeting in San Francisco, California.
- 2020 **Jayde N. Hirniak** and Andrew M. Zipkin. “Topics in Art/Archaeology/Forensics 2: Archaeological Chemistry”. The Great Virtual Scientific Exchange 2020 (Virtual version of the Great Scientific Exchange).
- 2020 **Jayde N. Hirniak** and Hannah Keller. “Human Origins Migration and Evolution Research Consortium Poster Symposium”. Virtual HOMER Symposium in September 2020.

FIELD TRIPS ORGANIZED

- 2021 **Jayde N. Hirniak** and Marie Jackson. “A Volcanic Tour of Central Oregon: Newberry Volcano Geothermal Scientific Drilling and Fort Rock Geoarchaeological Sites”. Geological Society of America Annual Meeting Field Trip in October 2021 (canceled due to COVID).

CONTINUING EDUCATION

- 2022 NextProf Science Workshop, University of Michigan: 4 day workshop to develop strategies for an academic career.
- 2022 Inclusive Pedagogy Workshop with Dr. Mary Mathis Burnett: 2-hour online workshop, School of Human Evolution and Social Change, Arizona State University

- 2022 Mentoring Undergraduates: Techniques and Best Practices for Guiding the Next Generation of Scientists: 1-hour online workshop, The National Association of Geoscience Teachers
- 2022 Climate Survey of the Geosciences: Disproportionate impacts on historically excluded groups: 1-hour online webinar, University of Wisconsin-Madison
- 2022 Career Paths 2022 Virtual Series, New York Academy of Sciences
Academic Teaching: 1-hour online workshop
Lab Management: 1-hour online workshop
- 2021 An Introduction to Effective Mentoring in Archaeology: 1-hour online seminar, Society for American Archaeology
- 2021 Pedagogy Mini short course: Teaching about Monitoring Volcanoes and Communicating Risks: 2-hour online workshop, Geodesy Tools for Societal Issues
- 2020 High-Quality Artifact Photography on a Desktop: 1-hour online seminar, Society for American Archaeology, RPA certified
- 2020 A Beginner's Guide to FTIR Spectroscopy: Theory, Sample Prep and Applications Overview: 1-hour online seminar, Perkin Elmer
- 2020 UCLA Ion Microprobe Student Workshop
- 2019 Fundamentals of Radiocarbon Dating: 2-hour online seminar, Society for American Archaeology, RPA certified
- 2019 XRF in Archaeology: Overview of Fundamental Concepts and Case Studies: 2-hour online seminar, Society for American Archaeology, RPA certified
- 2019 Addressing Orphaned Collections: A Practical Approach: 2-hour online seminar, Society for American Archaeology, RPA certified

SKILLS

Emergency Medical Technician Certificate (EMT)

CPR certified

PADI certified Open Water Diver (SCUBA)

Expertise in Carlson SurvCE, ArcGIS, LightRoom, Photoshop, PTGui, R

Night photography