

# John K. Murray

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

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- 2024 – Present      **Glendale Community College**  
OYO Anthropology Faculty  
Adjunct Lecturer
- 2021 – Present      **Mesa Community College**  
Adjunct Lecturer
- 2017 – Present      **Arizona State University**  
Graduate Research Associate  
Graduate Teaching Associate
- 2015 – 2017        **University of Victoria**  
Teaching Assistant Consultant for Anthropology  
Teaching Assistant

## Education

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- 2017 – Present      **Arizona State University**  
PhD in Anthropology
- 2017                **University of Victoria**  
MA in Anthropology  
Graduate Certificate in Learning and Teaching in Higher Education
- 2015                **Johns Hopkins University**  
Graduate Certificate in Geographic Information Systems (GIS)
- 2014                **SUNY at Stony Brook**  
BA in Anthropology

## Research Experience

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### Lab Experience

- 2024 – Present      SACP4 Speleothem Processing (PI: Kerstin Braun/Curtis Marean)
- 2023 – Present      Bandafassi Regional Archaeology Project Lithic Analysis
- 2022 – Present      Knysna Eastern Head – 1 Lithic Analysis

2018 – Present Pinnacle Point Lithic Analysis

**Field Experience**

2018 – Present Knysna Eastern Head – 1, South Africa  
 2017 Mughr el-Hamamah, Jordan Rift Valley  
 2014 – 2015 Azraq Marshes Archaeological and Paleoecological Project, Jordan  
 2014 The Louis Berger Group, Inc., New York  
 2013 Turkana Basin Institute Field School, Kenya

**Grants**

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**External Grants**

Summer 2024 NSF/GSA Graduate Student Geoscience Grant (\$2,500)  
 Summer 2023 NSF Doctoral Dissertation Improvement Grant (\$30,216)  
 Spring 2023 Society for Archaeological Sciences ECR Support Award (\$500)

**Internal Grants**

2017 – Present SHESC Graduate Research Grant (\$2600, \$1500, \$3000)  
 2017 – Present GPSA Travel Grant (\$950, \$856, \$920, \$950)  
 2017 – Present SHESC Travel Grant (\$500, \$600, \$175)  
 Spring 2022 Elizabeth H. Harmon Research Endowment (\$5000)  
 Fall 2021 GPSA Publication Grant (\$900)  
 Spring 2021 GPSA Independent Research Grant (\$741.20)  
 Fall 2020 Knowledge Mobilization Spotlight Grant (\$100)  
 Spring 2019 Donald C. Johanson Paleoanthropological Research Endowment (\$1000)

**Awards**

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**Teaching**

Spring 2023 SHESC Graduate Student Teaching Award (\$950)  
 Spring 2019 GPSA Outstanding Mentor Award (\$500)  
 Spring 2017 Andy Farquharson Teaching Excellence Award for Graduate Students (\$500)

**Research**

Spring 2023 SHESC Excellence in Graduate Achievement in Archaeology (\$300)  
 Spring 2023 Reynold Ruppé Prize in Archaeology (co-Author, \$500)  
 Spring 2023 The College’s Graduate Excellence Award (\$100)  
 Fall 2022 2<sup>nd</sup> Place ISSR Poster Contest (co-Author, \$1000)  
 Spring 2022 2<sup>nd</sup> Place ISSR Poster Contest (\$1000)  
 Spring 2022 Reynold Ruppé Prize in Archaeology (\$500)  
 Fall 2020 Pandemic Impact Award (\$720)  
 Fall 2019 Reynold Ruppé Prize in Archaeology (\$500)  
 Spring 2019 American Anthropological Association Membership Award (\$100)

Spring 2017

Best Graduate Presentation Award at 3<sup>rd</sup> Currents in Anthropology  
(\$50)**Peer-Reviewed Publications (\*denotes student author)**

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- (7) In Press. Beller, Jeremy A., **John K. Murray**, and Amer S. al-Souliman. Lithic procurement and provisioning at the Palaeolithic site of Shishan Marsh 1 in the Azraq Basin, Jordan. *Jordan Journal of History and Archaeology*.
- (6) 2023. Benitez, Robert Acio, **John K. Murray**, Susan C. Antón. Introduction to the Special Issue: Rethinking human origins with the extended evolutionary synthesis Part I. *PaleoAnthropology*.
- (5) 2022. **Murray, John K.**, Simen Oestmo, and Andrew M. Zipkin. Portable, non-destructive colorimetry and visible reflectance spectroscopy paired with machine learning can classify experimentally heat-treated silcrete from three South African sources. *PLOS One*. <https://doi.org/10.1371/journal.pone.0266389>. Data availability: <https://osf.io/3qkd2/>.
- (4) 2022. Gravel-Miguel, Claudine, Jan De Vynck, Colin D. Wren, **John K. Murray**, and Curtis W. Marean. Were prehistoric coastal sites more intensively occupied? Using an agent-based model to understand the intensity of prehistoric coastal occupation and what it means for the evolution of coastal adaptation. *Quaternary International*. <https://doi.org/10.1016/j.quaint.2022.02.003>.
- (3) 2021. Gravel-Miguel, Claudine, **John K. Murray**, Benjamin Schoville, Colin Wren, and Curtis W. Marean. Exploring variability in lithic armature discard in the archaeological record. *Journal of Human Evolution*. <https://doi.org/10.1016/j.jhevol.2021.102981>. Data availability: <https://osf.io/w2f9q/>
- (2) 2021. **Murray, John K.**, Robert Acio Benitez, and Michael J. O'Brien. The extended evolutionary synthesis and human origins: Archaeological perspectives. *Evolutionary Anthropology*. 1-4. <https://doi.org/10.1002/evan.21837>
- (1) 2020. **Murray, John K.**, Jacob A. Harris, Simen Oestmo, Miles Martin\*, and Curtis W. Marean. A new approach to identify heat treated silcrete near Pinnacle Point, South Africa using 3D microscopy and Bayesian modeling. *Journal of Archaeological Science: Reports*. 34, 102622. <https://doi.org/10.1016/j.jasrep.2020.102622> Data availability: <https://osf.io/fvw2k/>

**Manuscripts in Preparation or Under Review**

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- (3) Submitted. Hirniak, Jayde N., **John K. Murray**, and Andrew M. Zipkin. A microanalytical source discrimination study of South African silcrete using a minimally invasive technique. *ACS Omega*.

- (2) In prep. **Murray, John K.**, Jayde N. Hirniak, Mary Kate Donais, and Andrew M. Zipkin. An empirical calibration for elemental characterization and sourcing of South African silcrete with pXRF. *Journal of Archaeological Science*.
- (1) In prep. **Murray, John K.**, B. Patrick Fahey, and Cindy Hsin-yea Huang. Further considerations of the tip cross-section methods for determining projectile systems. *TBD*.

## **Edited Volumes**

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- (2) 2023. Robert Acio Benitez, **John K. Murray**, and Susan Antón. Niche construction, developmental plasticity, and inclusive inheritance: Rethinking human origins with the Extended Evolutionary Synthesis. Special issue in *PaleoAnthropology*.
- (1) 2021. **Murray, John K.**, Robert Acio Benitez, and Michael J. O'Brien. The extended evolutionary synthesis and human origins: archaeological perspectives. Special issue in *Evolutionary Anthropology*.

## **Teaching Experience**

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- 2024 – Present      **Glendale Community College**  
*Residential Faculty*  
ASM 104 – Bones, Stones, and Human Evolution  
ASM 275 – Forensic Anthropology  
  
*Adjunct Lecturer*  
ASM 104 – Bones, Stones, and Human Evolution (Hybrid)
- 2021 – Present      **Mesa Community College**  
*Adjunct Lecturer*  
ASM 104 – Bones, Stones, and Human Evolution
- 2017 – Present      **Arizona State University**  
*Instructor of Record*  
ASB 222 – Buried Cities and Lost Tribes  
  
*Graduate Teaching Associate*  
ASB 222 – Buried Cities and Lost Tribes  
ASB 223 – Aztecs, Incas, and Maya  
ASB 333 – Pseudoscience and Archaeology (x2)  
ASB 452 – Community Partnerships in Global Health  
ASB 484 – Collections Practicum (x3)  
  
*Graduate Service Assistant*  
ASM 350 – Geoarchaeology

ASB 370 – Ethics of Eating

*Guest Lecturer*

ASB 223 – Aztecs, Incas, and Maya

ASB 335 – Southwest Archaeology (Flintknapping demonstration)

ASB 344 – Fossil Hominids (Flintknapping demonstration)

ASB 452 – Community Partnerships in Global Health (CV tips)

ASB 452 – Community Partnerships in Global Health (Grad apps)

ASB 580 – Graduate Teaching Seminar (Experiences as IOR)

2015 – 2017

**University of Victoria**

*Teaching Assistant*

ANTH 240 – Introduction to Archaeology Lab (x3)

ANTH 349 – Paleolithic Art

ANTH 351 – Human Origins Lab (x2)

ANTH 392 – Perishable Technologies

ANTH 393 – Drinking Culture – Anthropology of Alcohol

ANTH 394 – The Human Animal

*Guest Lecturer*

ANTH 100 – Introduction to Anthropology (x5)

ANTH 250 – Introduction to Biological Anthropology

ANTH 341 – Paleolithic Archaeology

ANTH 394 – The Human Animal

*Teaching Observations with Feedback Letter*

Nick Wees – MA Candidate in Anthropology

Gerry Gourlay – PhD Candidate in Forest Biology

Fred Mullen – LATHE Student

## **Leadership Activities**

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2017 – Present

**Arizona State University**

*Organizer of the Silent Auction for the Bill Kimbel Impact Fund at IHO*

- Started a research award for undergraduate students within the Bill Kimbel Impact Fund that focuses on independent research projects, conference travel reimbursement, and field work.
- This endowment is funded through flintknapping and auctioning stone tools made by myself and fellow graduate student, Nicolas Hansen.

*Co-founder of the SHESC Graduate Mentorship Program*

- As the President of the Association of All Graduate students (AAGS), I collaborated with the SHESC Diversity, Equity, and Inclusion (DEI) committee and departmental leadership to develop a new peer-to-peer, identity-based mentorship program in SHESC.

- Created a canvas training with mentorship resources for graduate student mentees and mentors.

*Co-organizer of the Institute of Human Origins Journal Club*

- Collaboratively led the IHO journal club with another graduate student.
- Responsible for finding new and interesting research and soliciting fellow graduate students to present on this research.
- Scheduled weekly presentations and discussions.

2015 – 2017

**University of Victoria**

*Teaching Assistant Consultant for Anthropology Department*

- Created and facilitated workshops for new and experienced TA's to help teach them important skills in teaching and professional development
- Worked on two primary goals for the 2016-2017 academic year: continue to sustain a community of practice among the department's TAs, particularly focusing on integrating biological anthropology and archaeology TAs with sociocultural TAs; and to foster the growth of basic TA skills while also raising awareness about the importance of professional development and being a self-reflective teacher
- Utilized experiential learning techniques in the workshops to inspire TAs to try to incorporate them in their tutorials (e.g., jigsaw method, role playing, creating mock lectures)
- Conducted observations of guest lectures and provided feedback letters for fellow TAs

*Co-founder and President of the UVic Flintknapping Club*

- Fostered interest in archaeology through hands-on learning experiences.
- Developed and co-led workshops to teach undergraduate students and the general public how to manufacture stone tools.
- Collaborated with local cub scouts to teach children between the ages of six to eight to manufacture stone tools.
- Passed off the club to the next generation of graduate students where it was reworked to the "UVic Experimental Archaeology Club" and still exists today; however, it is now run by undergraduates.

## **Mentorship**

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2022 – Present

**Mesa Community College Honors Program**

*ASM 104 Honors Contract*

Fall 2022 - Blake Randall

2020 – Present

**Barret, the Honors College, Arizona State University**

*Honors Project Committee Member*

Chloe Hoelzel – Honors title: “Using Raman spectroscopy to differentiate silcrete heat treatment methods”

Ribhu Mukherjee – Honors title: “Design, Prototyping, and Testing of a Controllable Striker for Flintknapping Experiments”

Nicolas Hansen - Honors title: “Variance in response to heat treatment of Perkinsville Jasper”

*ASB 222 Honors Contract – Variation in silcrete flake metrics*

Students: Lydia-Ann Snyder, Caroline Caito, Alexander LaTone, Hana Zainea

2019 – Present

**HOMER Field Program**

*Lithic Analysis Training*

Students: Miles Martin, Peyton Carroll, Chloe Hoelzel, J. Ivan Anderies, Maria

2017 – Present

**SHESC Research Apprenticeship Program, ASU**

*Mentor (\* = went on to graduate school)*

Miles Martin, Lily Emery, Xavier Jenkins\*, Micah Gumaru, Grace Auclair, Haylee Allen, Scott Keohane, Shyan Bannon, Emily Arellano, Michael Valenzuela, Alexa Ferrer, Hanah Edington, Emelia Dolson, Nicolas Hansen\*, Lourdes Loera, Brooke Mangum, Dwight Courtney, Elie Knight, Swanny Jurczak\*, Alicia Fritz, Jingyu Liang\*, Hannah Holtz\*, Bailey Goodling\*, Dylan Myers, Katharine Namchek, Lilyann Nunley, Chloe Hoelzel, J. Ivan Anderies, Yu-Wei Huang, Ryan Meinhart, David Pooler, Anna Almeida, Kiersten Velasquez, Zoie Hardison

2019

**Gary K. Herberger Young Scholars Academy, ASU**

*Mentor*

Emily Tenaglia (High School Student)

## **Invited Lectures**

- (13) 2023. Diversity in Stone Tool Production in Human Evolution (and flintknapping demonstration). Deer Valley Petroglyph Preserve.
- (12) 2023. Middle Stone Age heat treatment technology and the origins of modern human behavior. Online guest lecture for Dr. Yin Lam’s Stone Age of Africa course at the University of Victoria.

- (11) 2023. Middle Stone Age Heat Treatment Technology in South Africa. Online guest speaker for Dr. Sarah Hlubik at Harvard University.
- (10) Spring and Fall 2023. Field Schools and Graduate Programs in Human Evolution. Online guest lecture for Dr. Jeremy Beller for Research Methods and Professional Development in Archaeology at the University of Victoria.
- (9) 2022. Developing a multi-proxy approach to distinguish above-ground and below-ground lithic heat treatment methods. Online guest lecture for Dr. Yin Lam's Stone Age of Africa course at the University of Victoria
- (8) 2022. Field Schools and Graduate Programs in Human Evolution. Online guest lecture for Dr. Jeremy Beller for ANTH 341 – Paleolithic Archaeology at the University of Victoria.
- (7) 2021. Middle Stone Age heat treatment technology and its implications for the origins of modern human behavior. Online guest lecture for Dr. Jeremy Beller for ANTH 341 – Paleolithic Archaeology at the University of Victoria
- (6) 2021. Developing a multi-proxy approach to distinguish above-ground and below-ground lithic heat treatment methods. Online guest lecture for Dr. Yin Lam's Stone Age of Africa course at the University of Victoria.
- (5) 2021. Method development in stone tool research. Online guest lecture for Dr. Naomi Cleghorn's course at the University of Texas – Arlington.
- (4) 2021. Middle Stone Age heat treatment technology: implications for the origins of modern human behavior. Early Career Research Brown Bag. Society for Archaeological Sciences.
- (3) 2020. Middle Stone Age heat treatment technology and the origins of modern human behavior. Online guest lecture for Dr. Yin Lam's Stone Age of Africa course at the University of Victoria.
- (2) 2019. Middle Stone Age heat treatment technology and its implications for the origins of modern human behavior. Invited guest lecture for Dr. Yin Lam's Stone Age of Africa course at the University of Victoria.
- (1) 2019. Middle Stone Age heat treatment technology and its implications for modern human behavior. Colloquium presentation at the Department of Anthropology, University of Victoria colloquium series.

## **Symposia Organized or Chaired**



- (4) 2023. **Murray, John K.** Tracking Populations, Resources, and Knowledge Across Space and Time Part I. 88<sup>th</sup> Annual Meeting of the Society for American Archaeology in Portland, Oregon from March 29 –April 22.
- (3) 2022. **Murray, John K.** Student Research in Archaeological Chemistry. The Great Scientific Exchange (SciX) Meeting in Covington, Kentucky from October 2-7.
- (2) 2020. Benitez, Robert Acio, and **John K. Murray.** The Extended Evolutionary Synthesis and Human Origins: Paleoanthropological perspectives. 89<sup>th</sup> Annual Meeting for the American Association of Physical Anthropology in Los Angeles, California. Meetings cancelled due to COVID-19 pandemic; but abstracts are published online.
- (1) 2019. **Murray, John K.,** Robert Acio Benitez. 2019. The Extended Evolutionary Synthesis and Human Origins: Archaeological Perspectives. 84<sup>th</sup> Annual Meeting for the Society for American Archaeology in Albuquerque, New Mexico.

### **Conference Presentations (\* denotes student author)**

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- (39) 2025. **Murray, John K.** A proposed comparative research strategy to investigate the heat treatment of stone raw material in northern and southern Africa. Paper abstract submitted to the 91<sup>st</sup> Annual Meeting of the Society for American Archaeology.
- (38) 2025. Borges-Eckert, Samantha\*, **John K. Murray**, Maria Eduarda Donegá\*, and Curtis W. Marean. A preliminary analysis of the stone artifacts from Pinnacle Point 5-6 South, South Africa. Poster abstract submitted to the 91<sup>st</sup> Annual Meeting of the Society for American Archaeology.
- (37) 2025. Hoelzel, Chloe\*, Aaron Celestian, **John K. Murray**, and Curtis W. Marean. Using Raman spectroscopy to identify the type of process used to heat-treat silcrete lithics. Poster abstract submitted to the 91<sup>st</sup> Annual Meeting of the Society for American Archaeology.
- (36) 2024. Cleghorn, Naomi. Ximena Villagran, Rosaria B. K. Saktura, Zenobia Jacobs, Bongekile Zwane, Irene Esteban, Sara Watson, **John K. Murray**, Benjamin Schoville, Hannah M. Keller, Dominic Stratford. Knysna Eastern Heads Cave 1 from MIS 3 through MIS 2: A unique record of intensive site use across Middle to Later Stone Age transitions on the African south coast and Palaeo-Agulhas Plain. Paper presentation at the SASQUA meetings in Oudtshoorn, South Africa.
- (35) 2024. Cleghorn, Naomi. Ximena Villagran, Rosaria B. K. Saktura, Sara E. Watson, **John K. Murray**, Benjamin Schoville, Bongekile Zwane, Irene Esteban, Erich C. Fisher, Hannah M. Keller, Dominic Stratford. From the Middle to Later Stone Age on the African south coast and Palaeo-Agulhas Plain: A detailed sequence of transitions from Knysna Eastern Heads Cave 1. Paper presentation at the Annual Meeting of the Paleoanthropology Society.

- (34) 2024. Hansen, Nicolas R., **John K. Murray**, J. Ivan Anderies\*, Chloe Hoelzel\*, and Curtis W. Marean. Identifying the lithic reduction strategy at Middle Stone Age Vleesbaai (south coast, South Africa) using a novel refitting approach. Poster presentation at the Annual Meeting of the Paleoanthropology Society.
- (33) 2024. **Murray, John K.**, J. Ivan Anderies\*, Swanny Jurczak\*, Chloe Hoelzel\*, Nicolas R. Hansen, and Curtis W. Marean. How did Middle Stone Age humans heat-treat silcrete at Pinnacle Point 13B approximately 162,000 years ago? Paper presentation at the Annual Meeting of the Paleoanthropology Society.
- (32) 2024. **Murray, John K.**, B. Patrick Fahey, Cindy Hsin-Yee Huang. Further considerations of the tip cross-sectional methods for determining projectile systems. Paper presentation at the 90<sup>th</sup> Annual Meetings of the Society for American Archaeology.
- (31) 2023. Kroot, Matthew V., **John K. Murray**, Sarah Marie Konecki-Brazeal, Chiara Umbriano, and Cameron Gokee. Long-term changes in knapped stone economies: results of the Bandafassi Regional Archaeological Project survey. AOAA conference in Dakar, Senegal.
- (30) 2023. **Murray, John K.**, Alicia Fritz\*, Bailey Goodling\*, Swanny Jurczak\*, Jacob A. Harris, and Andrew M. Zipkin. 2022. Re-visiting the earliest evidence for silcrete heat treatment technology at Pinnacle Point 13B, South Africa using a new multi-proxy approach. Poster at the Annual Meeting of the Paleoanthropology Society.
- (29) 2023. Goodling, Bailey\*, Alicia Fritz\*, Jingyu Liang\*, Swanny Jurczak\*, Katharine Namchek\*, Dylan Myers\*, Lilyann Nunley\*, J. Ivan Anderies\*, Chloe Hoelzel\*, Hana Zainea\*, Lydia-Ann Snyder\*, Caroline Caito\*, Alexander LaTone\* and **John K. Murray**. An assemblage level comparison of silcrete flake attributes across three methods of heat treatment: preliminary results from actualistic experiments. Poster presentation at the 89<sup>th</sup> Annual Meetings of the Society for American Archaeology.
- (28) 2023. Huang, Cindy Hsin-ye, **John K. Murray**, Sydney E. James, Nicolas Hansen, Jonathan Paige, and Kathryn L. Ranhorn. Quality Control: The impact of raw material quality on inter-analyst variation and interpretation of lithic assemblages. Poster presentation at the 89<sup>th</sup> Annual Meetings of the Society for American Archaeology.
- (27) 2023. **Murray, John K.**, Jacob A. Harris, Andrew M. Zipkin, Simen Oestmo, Nicolas Hansen, Swanny Jurczak\*, Bailey Goodling\*, Alicia Fritz\*, and Kyle S. Brown. Silcrete heat treatment technology across the MIS 5/4 transition at Pinnacle Point 5-6 and Vleesbaai, South Africa. Paper presentation at the 89<sup>th</sup> Annual Meetings of the Society for American Archaeology.
- (26) 2022. **Murray, John K.**, Jayde N. Hirniak, and Andrew M. Zipkin. 2022. Developing an empirical calibration for elemental characterization and sourcing of South African silcrete with pXRF. Paper presentation at SciX 2022 in Covington, KY.

- (25) 2022. Zipkin, Andrew M., Jayde Hirniak, **John K. Murray**. Silcrete geological source discrimination with LA-ICP-MS for minimally destructive archaeological stone tool provenience studies. Poster presentation at SciX 2022 in Covington, KY.
- (24) 2022. Jayde Hirniak, **John K. Murray**, and Andrew M. Zipkin. Developing an empirical calibration for elemental characterization and sourcing of South African silcrete with pXRF. Poster presentation at the 88<sup>th</sup> Annual Meeting of the Society for American Archaeology in Chicago, IL.
- (23) 2022. Huang, Cindy Hsin-Yee, **John K. Murray**, Sydney James, Alexa Ferrer\*, Jonathan Paige, Nicolas Hansen, Kathryn Ranhorn. Sedimental Value: The effects of raw material quality on inferring lithic skill variation in stone tools. Poster presentation at the 88<sup>th</sup> Annual Meeting of the Society for American Archaeology in Chicago, IL.
- (22) 2022. Carroll, Peyton\*, Miles Martin\*, **John K. Murray**, and Curtis W. Marean. Comparing piece-plotted and sieved stone artifacts from the Middle Stone Age site Pinnacle Point 5-6 and its implications for interpreting human behavior. Poster presentation at the 88<sup>th</sup> Annual Meeting of the Society for American Archaeology in Chicago, IL.
- (21) 2022. **Murray, John K.**, Jacob A. Harris, Andrew M. Zipkin, Simen Oestmo, Emelia Dolson\*, and Curtis W. Marean. A new multi-proxy approach to distinguish above-ground and below-ground lithic heat treatment methods. Poster presentation at the 88<sup>th</sup> Annual Meeting of the Society for American Archaeology in Chicago, IL.
- (20) 2021. **Murray, John K.**, Jayde Hirniak, and Andrew M. Zipkin. Impact of heat treatment on geochemistry of three silcrete sources near Pinnacle Point, South Africa. Online presentation at the Annual Meeting of the Geological Society of America. Portland, Oregon.
- (19) 2021. **Murray, John K.**, Emelia Dolson\*, Jacob A. Harris, Andrew M. Zipkin, Simen Oestmo, and Curtis W. Marean. 2021. Developing a multi-proxy approach to distinguish above-ground and below-ground lithic heat treatment methods: preliminary results from actualistic experiments. Online presentation for the 13<sup>th</sup> International Symposium on Knappable Materials. October 4<sup>th</sup>-7<sup>th</sup> Tarragona, Spain.
- (18) 2021. Hirniak, Jayde, **John K. Murray**, and Andrew M. Zipkin. 2021. Impact of heat treatment on silcrete geochemistry. Poster at the ISSR Graduate Student Research Symposium in Tempe, Arizona.
- (17) 2021. Zipkin, Andrew, and **John K. Murray**. Visible reflectance spectroscopy paired with k-NN lazy learning for detection of heated silcrete. Online Presentation at the Australian Research Cluster for Archaeological Science (ARCAS) Virtual Conference.
- (16) 2021. **Murray, John K.**, Scott Keohane\*, and Andrew M. Zipkin. Experimental identification of heat-treated silcrete using colorimetry and reflectance spectrophotometry. Poster at the virtual 86<sup>th</sup> Annual Meeting of the Society for American Archaeology.

- (15) 2021. Hansen, Nicolas\*, **John K. Murray**, Alexa Ferrer\*, Hanah Edington\*, and Kathryn L. Ranhorn. Variation in response to heat treatment in jasper from the Perkinsville Valley, Arizona. Poster at the 86<sup>th</sup> Annual Meeting of the Society for American Archaeology in San Francisco, CA.
- (14) 2020. Martin, Miles\*, **John K. Murray**, Jacob A. Harris, and Curtis W. Marean. Heat treatment of silcrete during the MIS 5 to 4 Transition at Pinnacle Point, South Africa. Poster abstract accepted at the 85<sup>th</sup> Annual Meeting of the Society for American Archaeology in Austin, Texas. **Meetings Cancelled due to COVID-19 pandemic.**
- (13) 2020. Beller, Jeremy A., April Nowell, Christopher J.H. Ames, James Pokines, Carlos Cordova, Cameron Walker, Amer Asuliman, **John K. Murray**, and Dan Stueber. Hominin survival at a Desert Refugium during the Middle Pleistocene: Results from the AMAPP excavations in Azraq, Jordan. Canadian Contributions to the Archaeology of Jordan (and Other Places): W. E. Aufrecht Occasional Workshops in Archaeology. Lethbridge, AB. January 24-26, 2020.
- (12) 2019. Huang, Cindy Hsin-ye, **John K. Murray**, Claudine-Gravel Miguel, and Andrew M. Zipkin. What the shell? An assemblage theory perspective on Middle Stone Age shell beads. Paper presented at Annual Meeting of the American Anthropological Association in Vancouver, British Columbia.
- (11) 2019. Benitez, Robert Acio, and **John K. Murray**. Rethinking the origin(s) of biocultural evolution: a niche construction perspective. Presented at the Annual Meeting of the American Anthropological Association in Vancouver, British Columbia.
- (10) 2019. **Murray, John K.**, Robert Acio Benitez, and Polly Wiessner. Weaving knowledge through stories: oral tradition as inclusive niche construction. Paper presented at the Annual Meeting of the American Anthropology Association in Vancouver, British Columbia.
- (9) 2019. Auclair, Grace\*, **John K. Murray**, Jacob A. Harris, Curtis W. Marean. Comparative Analysis of stone tool cut marks to determine raw material type. Poster presented at the SHESC 8<sup>th</sup> Annual Undergraduate Student Symposium.
- (8) 2019. Huang, Cindy Hsin-ye, **John K. Murray**, Claudine Gravel-Miguel, Micah Gumaru\*, and Andrew Zipkin. An experimental use-wear analysis of drilled gastropod operculum using 3D microscopy and its implications for Middle Stone Age symbolic behaviour. Poster presented at the Annual Meeting of the Paleoanthropology Society in Albuquerque, New Mexico.
- (7) 2019. **Murray, John K.**, Claudine Gravel-Miguel, Benjamin Schoville, Erik Otarola-Castillo, Jacob A. Harris, Colin D. Wren, Brian Wood, and Curtis W. Marean. An agent-based modeling approach to explain the rarity of projectile points in archaeological sites. Poster presented at the Annual Meeting of the Paleoanthropology Society in Albuquerque, New Mexico.

- (6) 2019. Benitez, Robert, and **John K. Murray**. The Coevolution of Niche Construction and Niche Adaptation in the Hominin Lineage: Toward Understanding Culture. Presented at the 84<sup>th</sup> Annual Meeting for the Society for American Archaeology in Albuquerque, New Mexico.
- (5) 2019. Butts, Clancey\*, **John K. Murray**, Jayde Hirniak, Hannah Keller, and Naomi Cleghorn. An undisturbed Earlier Stone Age locality on the southern coast of South Africa, exposed by fire. Poster presented at the 84<sup>th</sup> Annual Meeting for the Society for American Archaeology in Albuquerque, New Mexico.
- (4) 2018. Martin, Miles\*, **John K. Murray**, Jacob A. Harris, Simen Oestmo, Curtis W. Marean. Inter-source variation in surface roughness between heat-treated and untreated silcrete stone tools. Poster presented at the SHESC 7<sup>th</sup> Annual Undergraduate Student Symposium.
- (3) 2018. **Murray, John K.**, Jacob A. Harris, Simen Oestmo, Curtis W. Marean. Using surface roughness to identify heat treatment in lithic technology. Paper presented at the 83<sup>rd</sup> Annual Meeting of the Society for American Archaeology in Washington, DC.
- (2) 2017. **Murray, John K.**, April Nowell, and Daniel Stueber. Handaxe function at SM-1: preliminary results of an experimental use-wear analysis. Paper presented at the 82<sup>nd</sup> Annual Meeting of the Society for American Archaeology in Vancouver, British Columbia.
- (1) 2017. **Murray, John K.** Investigating handaxe function at SM-1: preliminary results of an experimental use-wear analysis. Paper presented at 3<sup>rd</sup> Annual Currents in Anthropology: A Student Research Conference. University of Victoria. Victoria, British Columbia.

### **Non Peer-Reviewed Publications (\* denotes student author)**

- (4) 2022. **Murray, John K.** Conference Review: The Great Scientific Exchange (SciX) 2022. *SAS Bulletin Online*. November, 25, 2022. <http://socarchsci.blogspot.com/2022/11/conference-review-great-scientific.html>
- (3) 2020. **Murray, John K.**, and Robert Acio Benitez. Weaving environmental knowledge and oral tradition. *Anthropology News*. October 23, 2020. <https://www.anthropology-news.org/index.php/2020/10/23/weaving-environmental-knowledge-and-oral-tradition/>
- (2) 2020. Hsin-Yee Cindy Huang and **John K. Murray**. What the (prehistoric) shell? *Anthropology News*. September 29, 2020. <https://www.anthropology-news.org/index.php/2020/09/29/what-the-prehistoric-shell/>
- (1) 2020. **Murray, John K.** PhD research during a pandemic. *SAS Bulletin Online*. September 28, <http://socarchsci.blogspot.com/2020/09/phd-research-during-pandemic.html>

## Academic Service

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|                | <b>Association of All Graduate Students (AAGS), ASU</b>            |
| 2022 – 2023    | Archaeology Approach Representative                                |
| 2021 – 2022    | President  |
| 2020 – 2021    | Vice President   |
| 2018 – 2019    | Archaeology Approach Representative                                |
|                | <b>Graduate &amp; Professional Student Association (GPSA), ASU</b> |
| 2020 – Present | Publication Grant Reviewer   |
| 2017 – Present | Research Grant Reviewer  |
| 2018 – 2019    | Teaching Award Reviewer  |
| 2019 – Present | <b>Ad-Hoc Peer Reviewer</b>  |
|                | <i>Journal of Human Evolution</i>                                  |
|                | <i>Proceedings of the National Academy of Sciences</i>             |
|                | <i>Archaeological and Anthropological Sciences</i>                 |
|                | <i>Evolutionary Anthropology</i>                                   |
|                | <i>Journal of Archaeological Science: Reports</i>                  |

## Academic and Community Engagement

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|            |  |
|------------|--|
| 05/20/2024 | <b>Vi Senior Living</b><br>Outreach Lecture on Modern Human Origins                            |
| 04/26/2024 | <b>ASU Experimental Archaeology Club</b><br>Flintknapping Demonstration                        |
| 02/24/2024 | <b>Glendale Community College Anthropology Club</b><br>Flintknapping Demonstration             |
| 02/24/2024 | <b>ASU Open Door</b><br>Flintknapping Demonstration  |
| 01/26/2024 | <b>Phoenix College ACE Program</b><br>Flintknapping Demonstration                              |
| 10/18/2023 | <b>Undergraduate Anthropology Association Grad Meet and Greet</b><br>Graduate Student Panelist |
| 09/02/2023 | <b>Phoenix College ACE Program</b><br>Flintknapping Demonstration                              |
| 08/10/2023 | <b>SHESC TA/RA Training</b><br>Graduate Student Panelist                                       |

03/04/2023      **AZMNH I Love Science Day**  
Public Flintknapping Demonstration

02/25/2023      **ASU Open Door – IHO Exhibits**  
Public Flintknapping Demonstration

11/09/2022      **Undergraduate Anthropology Association Virtual Event**  
Graduate Student Panelist

09/16/2022      **IHO 6<sup>th</sup> Grade Laboratory Tour**  
Flintknapping Demonstration

09/15/2022      **Unified Anthropology Association at ASU Online Event**  
Graduate Student Panelist

11/10/2021      **Undergraduate Anthropology Association Virtual Event**  
Graduate Student Panelist

10/15/2021      **AZMNH Meet the Scientist Event**  
Volunteer Scientist

08/12/202      **SHESC Early Start Program Lab Tour**  
Flintknapping Demonstration

2021              **IHO Becoming Human Article on Projectile Technology**  
Volunteer Contributor

10/30/2021      **5<sup>th</sup> Annual Summer Research and Fieldwork Symposium**  
Volunteer Presenter

10/21/2020      **Undergrad Anthropology Association Grad Panel**  
Graduate Student Panelist

2019              **SHESC Handbook Committee**  
Editor

2019              **SHESC Archaeology Brown Bag**  
Co-Organizer

09/18/2019      **Undergrad Anthropology Association Grad Panel**  
Graduate Student Panelist

03/02/2019      **AZMNH Meet the Scientist**  
Volunteer Scientist

|            |  |
|------------|--|
| 02/23/2019 | <b>ASU Open Door Event</b><br>Flintknapping Demonstration  |
| 12/06/2018 | <b>Ask an Anthropologist, Tempe Academy of International Studies</b><br>Volunteer Anthropologist |
| 12/01/2018 | <b>AZMNH Meet the Scientist</b><br>Volunteer Scientist   |
| 09/28/2018 | <b>4<sup>th</sup> Annual Summer Research and Fieldwork Symposium</b><br>Volunteer Presenter      |
| 03/10/2018 | <b>Arizona Archaeology Expo</b><br>Flintknapping Demonstration                                   |
| 02/24/2018 | <b>ASU Open Door Event</b><br>Volunteer Scientist  |
| 02/24/2018 | <b>SHEEC Meet the Expert</b><br>Volunteer Scientist  |
| 02/10/2018 | <b>AZMNH I Love Science Day</b><br>Volunteer Scientist   |
| 01/06/2018 | <b>AZMNH Meet the Scientist</b><br>Volunteer Scientist   |
| 11/17/2017 | <b>IHO High School Outreach Event</b><br>Volunteer Presenter                                     |
| 09/15/2017 | <b>3<sup>rd</sup> Annual Summer Research and Fieldwork Symposium</b><br>Volunteer Presenter      |
| 02/18/2017 | <b>Explore UVic</b><br>Lab Guide   |
| 01/04/2017 | <b>Spring TA Conference</b><br>Workshop Facilitator  |
| 09/07/2016 | <b>Fall TA Conference</b><br>Workshop Facilitator  |

## **Continuing Education and Training Certificates**



- 2021 An Introduction to Effective Mentoring in Archaeology. RPA certified online seminar from the Society for American Archaeology.
- 2020 Collaborative Institutional Training Initiative (CITI) Human Subjects Protection Certification, Social-Behavioral Sciences (Group 2).
- 2019 XRF in Archaeology: Overview of fundamental concepts and case studies. RPA certified online seminar from the Society for American Archaeology.
- 2016 Teaching Assistant Fundamentals Certificate. University of Victoria.

## **Skills and Expertise**

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Computer programs: ArcGIS, R, Microsoft Office, Slack.

Research Skills: Flintknapping, lithic analysis, experimental archaeology, microscopic analysis.

## **Media Coverage**

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- 2023 ASU New Article covering my NSF DDRIG research.  
<https://news.asu.edu/20230818-paleoanthropology-phd-candidate-receives-notable-national-science-foundation-grant>
- 2023 The Story of Us interview giving advice about applying to graduate school and my research. <https://worldofpaleoanthropology.org/2023/05/18/grad-school-and-flintknapping-with-john-murray/>
- 2023 ASU News Article about my research and the Ancient Technology Lab.  
<https://news.asu.edu/20230110-discoveries-stone-age-toolmaking-lab-rocks-asu-students>
- 2021 Institute of Human Origins Year-End Research Review covered our JHE projectile paper.  
<https://iho.asu.edu/publications/annual-highlights>
- 2021 ASU Institute of Human Origins Press Release, interview for JHE projectile paper. [https://news.asu.edu/20210412-new-research-suggests-projectile-weapons-were-used-regularly-during-middle-stone-age?fbclid=IwAR1Jr42hF\\_ivHER3-tKE1kyEs3WQa0IcCZ9TPb\\_oZNther1ITDSfqO6piAo](https://news.asu.edu/20210412-new-research-suggests-projectile-weapons-were-used-regularly-during-middle-stone-age?fbclid=IwAR1Jr42hF_ivHER3-tKE1kyEs3WQa0IcCZ9TPb_oZNther1ITDSfqO6piAo)
- 2020 PBS Arizona, flintknapping for Dr. Kathryn Ranhorn's segment on stone tools.

- 2016                      The Ring, interview in *Paleolithic Stones Snag 21st-Century Attention*.
- 2016                      UVic Torch, interview about field work with April Nowell's project in *Stone Age Kitchenware*.  
[http://www.issuu.com/uvic\\_torch\\_alumn\\_magazine/docs/2016\\_autumn/25](http://www.issuu.com/uvic_torch_alumn_magazine/docs/2016_autumn/25)

## **Professional Affiliations**

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- 2022 – Present              Society of African Archaeologists
- 2019 – Present              The Society for Archaeological Sciences
- 2018 – Present              PaleoAnthropology Society
- 2017 – Present              Society for American Archaeology
- 2019 – 2021                American Anthropological Association