

The 38th Great Basin Anthropological Conference

Preliminary Program
Final Schedule Subject to Change



October 18th-21st, 2023
Riverhouse on the Deschutes
Bend, Oregon

Great Basin Anthropological Association
greatbasinanthropologicalassociation.org

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University of Nevada Reno

Richie Rosencrance

University of Nevada Reno

This year's conference logo was designed by artist-archaeologist **Megan McGuinness**. To learn more about Megan's work, including archaeological illustration, visit askthemoonart.com. **Shannon Hataway** provided webpage and social media support. To learn more about Shannon's business, Tangerine Design & Web, visit tangerinedesignweb.com.

President's Welcome

It is with great pleasure that I welcome you to the 38th Great Basin Anthropological Conference in beautiful Bend, Oregon. I am very excited about this meeting as we move past the pandemic and into what I hope is the “new normal” of vibrant, in person fieldwork, lab work, and conference attendance. I hope you’ll have the time and opportunity these next few days to catch up with old friends and colleagues and meet some new ones along the way. Reviewing the program for this year’s meeting, I’m struck by the quantity, diversity, and impact of papers that will be presented. People are doing great research out there and I’m overjoyed we get to hear about it these next three days. The GBAC doesn’t happen without scholars like you, so first and foremost, thank you GBAA members and GBAC presenters for doing the work that will make this conference a success. Thank you also GBAA members for generously adapting to paying membership dues – we just couldn’t run the website and keep the ship afloat without your regular financial support. Likewise, thank you corporate sponsors and private donors – your support is crucial to the continuing success of the GBAA and GBAC. This conference could not have happened without the considerable efforts of the 2023 GBAC Planning Committee: Dennis Jenkins, Geoffrey Smith, Pamela Endzweig, Thomas Connolly, Richard Rosencrance, Katelyn McDonough, and our tireless webmaster Shannon Hataway. Thanks also to the outgoing GBAA Board who have unselfishly shepherded us through two GBACs: Nate Thomas, Joanna Roberson, Lisa Krussow, Lindsay Johansson, and Ashley Losey. To conclude, I sincerely hope all of you take advantage of all that Bend has to offer and have a great conference. All who are interested in the Great Basin and its people, past and present, are welcome.

Christopher Morgan



GBAA Land Acknowledgement

The Great Basin Anthropological Association (GBAA) recognizes *all* Tribes who have called the Great Basin and adjacent regions home since time immemorial. We appreciate the opportunity to work in the region and will continue to work to create a more inclusive and welcoming space where Indigenous and Western communities may pursue questions about the past, present, and future together.

Code of Conduct

The GBAA is committed to providing a safe and welcoming environment for all. It is important that we remain respectful of our fellow conference participants, venue staff, and all members of the public. The GBAA will not tolerate harassment, bullying, discrimination, or intimidation of any kind directed at any person, including verbal or written comments related to gender, sexual orientation, disability, physical appearance, body size, race, religion, or national origin.

If you see or hear something that is not right, speak up and report the incident by email or phone to GBAA President Christopher Morgan (ctmorgan@unr.edu 775-682-8992), the GBAC Conference Co-Chairs Geoffrey Smith (geoffreys@unr.edu 775-682-7687), Dennis Jenkins (djenkins@uoregon.edu 541-514-1228), or any member of the Conference Planning Committee with whom you feel comfortable.



The Great Basin Anthropological Association

The Great Basin Anthropological Association (GBAA) promotes the study of the peoples and cultures of the Great Basin of the Western United States and its relationship to adjacent regions. The Association serves:

- as the coordinator of the biennial Great Basin Anthropological Conference (GBAC);
- to enhance communication within the anthropological community in the Great Basin and with the greater anthropological community;
- to exchange ideas to help promote teaching, research, and service in the area of Great Basin anthropology;
- to improve communication among individual practitioners whether they work in government service, the private sector, education, or other organizations; and
- to review and make recommendations on government policies, regulations, and laws deemed to be in accord with the subject matter of the Association.

GBAA Board of Directors

Christopher Morgan

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Member at Large

Ashley Lohse

Member at Large

For more information about the GBAA, please visit greatbasinanthropologicalassociation.org.

Corporate Sponsors

This year's conference would not be possible without generous support from dozens of sponsors. Foremost, we recognize and appreciate the University of Oregon Museum of Natural and Cultural History, the official partner of the 38th Great Basin Anthropological Conference. The Museum has committed generous financial and logistical support for this year's conference. For more information, please visit <https://natural-history.uoregon.edu>.



Our other corporate sponsors include (arranged alphabetically within sponsorship level):

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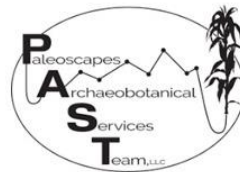


Great Basin Consulting Group, LLC



IAOS

International Association for Obsidian Studies



Rondeau
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Chewaucan Level



Warner Level



Preliminary List of Vendors

Be sure to visit the book room to check out these organizations. There is still time to reserve a table. To do so, please visit greatbasinanthropologicalassociation.org/gbac/vendors/.

Archaeological Society of Central Oregon

Bryan Hockett-Eric Dillingham-Jason Spidell Publications

Chronicle Heritage

Codifi LLC

GeoVisions

International Association for Obsidian Studies

InTerris – Registries/QLC Inc.

Logan Simpson

Nevada Archaeological Association

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Phoenix Obsidian Designs

The Archaeological Conservancy

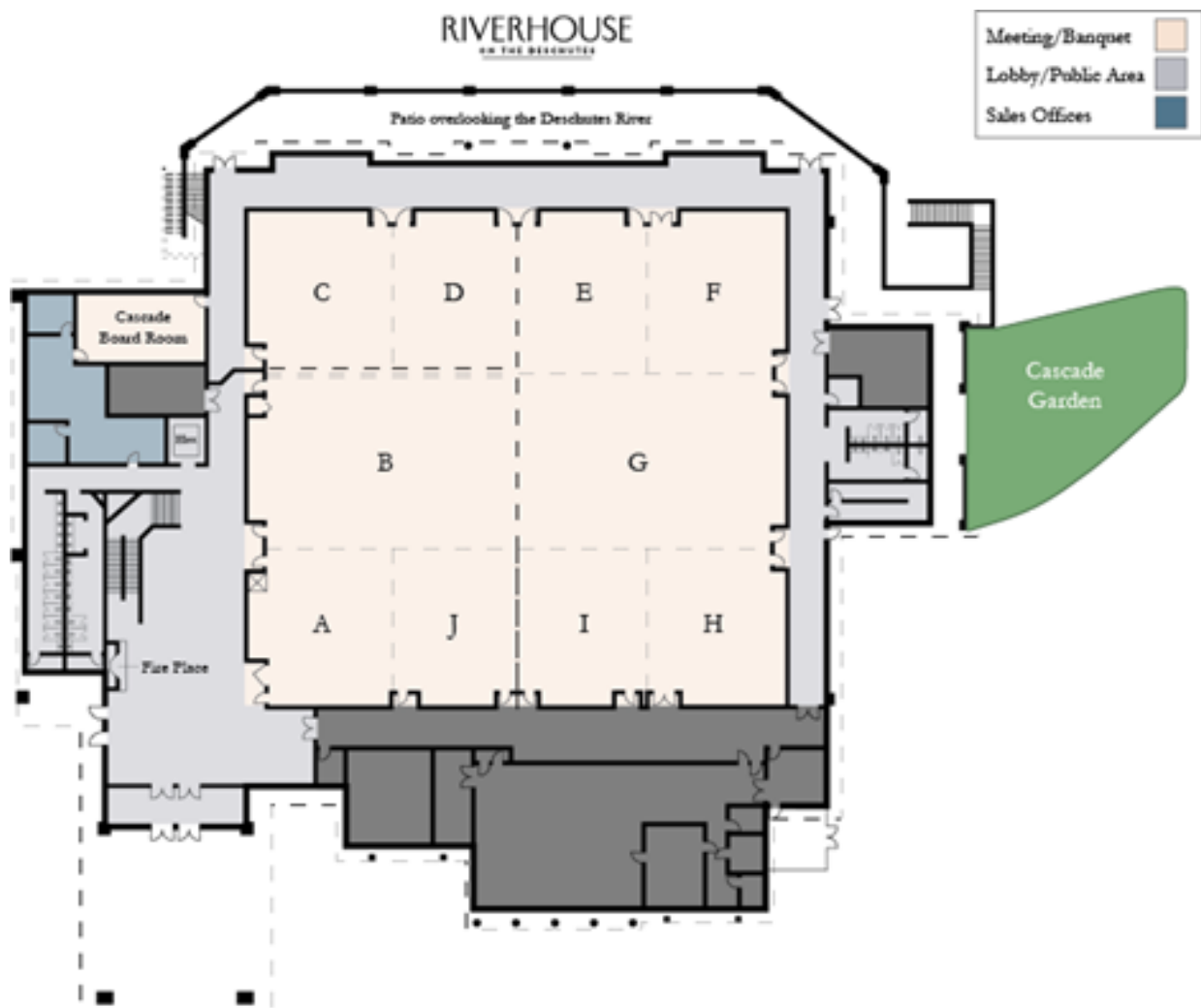
University of Utah Press

U.S. Forest Service Region 6

Utah State University Anthropology

The Riverhouse on the Deschutes

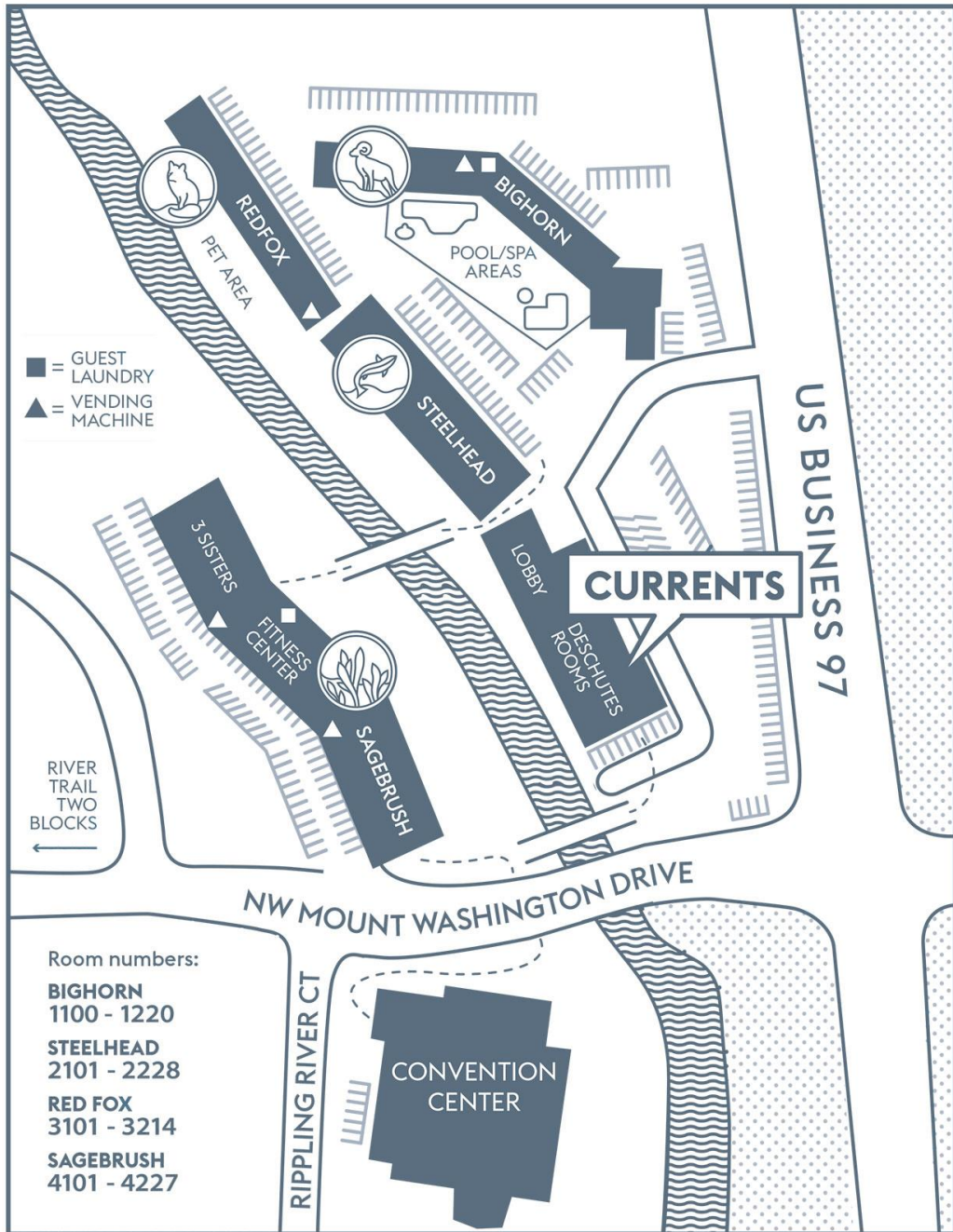
The 38th GBAC will take place at the Riverhouse on the Deschutes (riverhouse.com). All paper and poster sessions, the book room, receptions, and banquet will be held in Cascade Rooms A-J. The Cascade Board Room will be reserved for Indigenous registrants and their guests for the duration of the conference. Please respect that space.





RIVERHOUSE

ON THE DESCHUTES



(541)-389-3111
(800)-547-3028

Riverhouse on the Deschutes
3075 N. Business 97 Bend, OR 97703

www.riverhouse.com

City Map

-  Highway 97 is also known as "The Parkway"
-  3rd Street, north of Greenwood is also Business 97
-  Greenwood, east of 3rd Street is also Highway 20
-  Designates exits off Bend Parkway (HWY 97)
-  Designates roundabout location
-  Hawthorne Station - Bend Transit Center

Map not drawn to scale



Schedule at a Glance

Wednesday, October 18th

- 3:00-7:00 Registration and Check-In
- 5:00-7:30 Welcome Reception

Thursday, October 19th

- 7:30-5:00 Registration and Check-In
- 8:00-5:30 Book Room
- 8:00-12:00 Plenary Session: Beyond Boundaries
- 12:00-1:30 Lunch
- 1:30-4:30 Symposium 1: From Channel Flakes to Bison Jumps: Current Archaeological Investigations in Southern Idaho
- 1:30-3:45 Symposium 2: A 6,500 Year Record of Indigenous Occupation and Environmental Change at *Patsiata* (Owens Lake)
- 1:30-5:00 General Session 1: Interpreting Toolstone Conveyance, Site Location, and Land Use
- 4:00-5:30 Poster Session 1: Recent Research in Great Basin Anthropology I
- 5:00-7:00 Reception

Friday, October 20th

- 7:30-5:00 Registration and Check-In
- 8:00-5:30 Book Room
- 8:00-11:15 Symposium 3: Tracking the Human Landscape of the Old River Bed Delta at the Pleistocene-Holocene Transition
- 8:00-10:00 Symposium 4: In His Footsteps: Tom Connolly's Legacy in Oregon Archaeology

- 10:15-12:00 Symposium 5: Beyond Stones and Bones: Current Research on Fiber Artifacts in the Great Basin
- 8:00-12:00 Symposium 6: Recent Research in Fremont Studies
- 12:00-1:30 Lunch
- 12:00-1:00 GBAA Board Meeting (Closed to Public)
- 1:30-4:00 Symposium 7: Multi-Disciplinary Investigation of Cultural and Ecological Assemblages at the Paisley Caves in the Chewaucan Basin, South-Central Oregon
- 1:30-4:15 Symposium 8: Exploring the Intersections of Human Ecology and Culture History in the Great Basin
- 1:30-4:15 General Session 2: The Archaeology of the Recent Past and Present
- 4:00-5:30 Poster Session 2: Recent Research in Great Basin Anthropology II
- 5:00-6:30 Reception
- 6:30-8:30 Banquet, Awards Presentation, and Keynote Lecture
- 8:30-10:30 Dancing

Saturday, October 21st

- 8:00-12:00 Registration and Check-In
- 8:00-12:00 Book Room
- 8:00-11:45 Symposium 9: Tradition, Teaching, and Technology: Papers in Honor of Dan Stueber
- 8:00-11:00 General Session 3: Traditional Foodways and Technology
- 12:00-1:00 Lunch
- 1:00-5:30 Newberry Crater Fieldtrip I

Sunday, October 22nd

- 9:00-1:30 Newberry Crater Fieldtrip II

Conference Schedule

Wednesday, October 18th

Registration and Check-In

3:00-7:00

Welcome Reception

5:00-7:30

Thursday, October 19th

Registration and Check-In

7:30-5:00

Book Room

8:00-5:30

Plenary Session: Beyond Boundaries

8:00-12:00

Organizers: Geoffrey M. Smith, Katelyn McDonough, and Richard Rosencrance

Bend sits in the heart of Oregon, where the Great Basin, Columbia Plateau, and Pacific Northwest come together. The people who have lived in the area since time immemorial defy easy assignment to one of these culture areas. Instead, their traditional lifeways feature elements drawn from each region, emphasizing that the Great Basin has always been part of a broad social and economic fabric. In recognition of this fact, the theme of this year's Plenary Session is Beyond Boundaries. Our carefully curated set of presentations highlights recent work that crosscuts geographic boundaries, like those which intersect near this year's conference location, but also methodological, political, temporal, and theoretical boundaries. We hope that the plenary presentations will collectively inspire attendees to reflect on their own work and consider how they might move beyond boundaries to conduct more innovative, collaborative, and relevant research as our field continues to evolve.

- 8:00 **Welcome and Invocation**
Perry Chocktoot
- 8:10 **Opening Remarks**
Dennis Jenkins
- 8:20 **Studying Late Pleistocene-Aged Sites in the Far West: Some Perspectives from Beyond the Great Basin**
Loren Davis
- 8:40 **Archaeology and Traditional Lifeways in a Borderland: Research at the Kelly Forks Work Center Site, Bitterroot Mountains, Idaho**
John Blong
- 9:00 **The Longue Durée of Kalispel Food Security: A Multiproxy Approach to Food Processing, Preference, and Access in the Past**
Molly Carney, Naomi Scher, and Shannon Tushingham
- 9:20 **The Place Where Antelope Go to Dream: Collaborative and Historical Archaeology at *Tunna' Nosi' Kaiva' Gwaa***
Isabelle Guerrero
- 9:40 **Archaeology's Self-Reflexive Turn: Decolonizing Archaeology Toward a More Ethically Sound Future**
Diane Teeman
- 10:00 **Break**
- 10:20 **Towards Establishing a High-Resolution Chronological Record of the Atlatl-and-Dart to Bow-and-Arrow Transition in the Great Basin**
Richard Rosencrance, Geoffrey Smith, and Christopher Jazwa
- 10:40 **Fiber Artifact Dating and Relevance to Continuing Research in the Northern Great Basin**
Thomas Connolly

11:00 **Domestication of the Four Corners Potato: The Genetic Signature of Indigenous People on the Landscape**

Lisbeth Louderback, Bruce Pavlik, Alfonso del Rio, John Bamberg, and Cynthia Wilson

11:20 **Taking a Shot at Ethnohistoric Sites**

Robert McQueen

11:40 **Fremont Farmer-Foragers on the Margins of Agriculture**

David Madsen

Symposium 1: From Channel Flakes to Bison Jumps: Current Archaeological Investigations in Southern Idaho

1:30-4:30

Organizer: L. Suzann Henrikson

Analysis of the *Pewaishe Suakiga* debitage assemblage sheds light on Folsom technology in the Pioneer Basin, while new AMS assays and protein residue analyses address the Folsom mammoth hunting proposition in Owl Cave. The source attributions of volcanic glass Haskett points from the eastern Snake River Plain (including the Haskett type site specimens) suggest land use patterns in contrast with regional fluted assemblages. Recent analyses indicate that the Owl Cave bison bone bed represents a single early Holocene mass kill likely executed as an organized communal event with strong evidence for gourmet processing behaviors. Stable isotope values provide much needed insights regarding the seasonality of the mass kill. Potential changes in land use and mobility at the Early Holocene/Middle Holocene transition are examined via geospatial and XRF analyses of volcanic glass projectile points. Recent excavations in the Birch Creek Valley provide evidence of increased hunting success during the late Holocene, due in part to the use of bow and arrow technology. The natural landscape at Buffalo's Little Brother Hill was utilized as a bison jump following the Medieval Warm Period, when bison herds in southern Idaho rebounded.

1:30 **Putting the Owl Cave Mammoth Hunters to Bed: New Dates from Layer 18**

L. Suzann Henrikson and Daron Duke

1:45 **Farthering Folsom: A Technological Analysis of the "It Still Breathes" Site in Eastern Idaho's Pioneer Basin**

Daron Duke and L. Suzann Henrikson

- 2:00 **Protein Residue Analysis in Archaeology: Preliminary Results of a Contamination Experiment**
Theresa Popp
- 2:15 **Late Pleistocene Haskett Toolstone Use in Southern Idaho**
Richard Rosencrance, Amy Commendador, Joshua Clements, and Alex Nyers
- 2:30 **Sourcing the Obsidian Haskett Projectile Points recovered from the Haskett Type Site (10PR37) in Lake Channel, Idaho**
Taylor Haskett
- 2:45 **Break**
- 3:00 **Investigating the Owl Cave Bison Bone Bed Lithic Assemblage**
Joshua Clements
- 3:15 **The Owl Cave Bison Bone Bed: Evidence of an Early Holocene Mass Kill**
Kristina Frandson and L. Suzann Henrikson
- 3:30 **Isotopic Studies on Faunal Remains from Owl Cave Shed Light on Bison Predictability on the Eastern Snake River Plain**
Geena Black and Andrew Boehm
- 3:45 **Mobility on the Eastern Snake River Plain: Obsidian Conveyance and Spatial Analysis of Early Holocene and Northern Side-notched Projectile Points**
Jennifer Finn
- 4:00 **Reconstructing Ancient Subsistence Practices: The Fauna from Three Prehistoric Sites in Birch Creek Valley, Eastern Idaho**
Brooke Arkush and Matthew Hill, Jr.
- 4:15 **Buffalo's Little Brother Hill (10BT2303): A Late Holocene Bison Jump in Eastern Idaho**
Alexandra Wolberg and Anna Bowers

Symposium 2: A 6,500 Year Record of Indigenous Occupation and Environmental Change at *Patsiata* (Owens Lake)

1:30-3:45

Organizers: Kelly McGuire and Bill Hildebrandt

This symposium reports on the results of recent archaeological investigations at 59 component areas within a highway construction zone situated on the west shore of Owens Lake, near Cartago, California. Dating from the Middle Holocene through the mid-20th Century ethno-historic period, the archaeological record provides a window into Native responses to changing climates and lake levels, as well as to colonial intrusion. The project area is the ancestral home of the Paiute/Shoshone and is also of high significance to other Native tribes of eastern California. The symposium reviews Native perspectives of the archaeological record and other important tribal resources through the development of a Traditional Cultural Landscape.

1:30 **An Introduction to the Archaeology and History of the Western Shore of Patsiata**

Jay King

1:45 **A Dynamic Piedmont at Owens Lake and the Geoarchaeological Setting of the Olancha Project**

D. Craig Young

2:00 **Chronological Data from the Olancha-Cartago Project**

Laura Harold and Jay King

2:15 **A Six Thousand-Year Profile of Subsistence at Owens Lake: The Faunal and Archaeobotanical Records from the Olancha-Cartago Project**

Kelly McGuire, Bill Hildebrandt, Angela Armstrong-Ingram, and Tim Carpenter

2:30 **Break**

2:45 **Changing Adaptations along the Shores of Owens Lake: Artifact Assemblages from the Olancha-Cartago Project**

Bill Hildebrandt, Katie Hanrahan, and Lucas Johnson

- 3:00 **Complexities in Recognizing Historic-Period Indigenous Settlements**
Bridget Wall, Douglas Ross, and Esther Fillingame
- 3:15 **Challenges and Opportunities for Preserving Indigenous Landscapes in the Face of Highway Construction**
Amanda Hill, Bridget Wall, Kathy Bancroft, Esther Fillingame, Janice Gonzales, Jeremiah Joseph, and Seth Tsosie
- 3:30 **Summary and Discussion**
Bill Hildebrandt

General Session 1: Interpreting Toolstone Conveyance, Site Location, and Land Use

1:30-5:00

Chair: Shelby Saper

- 1:30 **Illuminated Rocks: Paleoindian Use of Quartz Crystals in the Western US**
Daniel Meatte
- 1:45 **Got Glass? Distribution of Glass Buttes Obsidian from the Northern Great Basin and Implications for Indigenous Social Networks**
Jacob Arnzen
- 2:00 **Source Analysis of Cascade Points from the Connley Caves, Oregon (35LK50)**
Shelby Saper, Richard Rosencrance, and Katelyn McDonough
- 2:15 **Geochemical Analysis of Felsite Quarries at Pluvial Lake Mojave**
Alexandra Jonassen, Lucas Johnson, Edward Knell, and David Schroeder
- 2:30 **Over Uplands and Across Valleys: A Test of Ideal Free Distribution of Human Settlement During the Terminal Pleistocene/Early Holocene in the Northwestern Great Basin, USA**
Megan McGuinness

- 2:45 **Diachronic Use of Upland Springs in Northwestern Nevada**
Jen Rovanpera
- 3:00 **Break**
- 3:15 **Testing the Dry Stretch: Assessing the Archaeological Visibility of an Ethnographic Buffer Zone through the Etcharren Valley, Inyo County, California**
Ryan Byerly and Shannon DeArmond
- 3:30 **Why Do People Leave? Settlement Persistence in the Central Mesa Verde Region (Hint: It's Rarely Because of Changing Climate)**
Darcy Bird
- 3:45 **Landforms Matter: A Geoarchaeological Approach to Meadow Valley Wash Archaeology**
Teresa Wriston, Kenneth Adams, David Rhode, and Mark Estes
- 4:00 **Utilizing Surface Assemblages to Assess Regional Site Distributions in Southern Idaho**
Alberto Conti
- 4:15 **The Hotbed Site: A Basketmaker II Women's Retreat for Birthing or Menarche in Southwestern Utah**
Heidi Roberts, Keith Hardin, and Lisbeth Louderback
- 4:30 **The ROC (Rockshelters, Overhangs, and Caves) of Lincoln County, Nevada**
Teresa Wriston
- 4:45 **Recent Advances in Obsidian Hydration Dating**
Alexander Rogers and Robert Yohe II

Poster Session 1: Recent Research in Great Basin Anthropology I

4:00-5:30

Intersecting Geomorphic Features Structure the Fremont Agricultural Landscape on Clear Creek, Fremont Indian State Park, Utah

Michael Bianchini, Judson Finley, and Erick Robinson

Resource Availability, Diet, and 4600-year Old Maize, Hogup Cave, UT

Savannah Bommarito and Andrea Brunelle

Fremont Legacy in Capitol Reef and the Waterpocket Fold: A Radiocarbon Analysis of the Pectol Collection Coiled Basketry Using Bayesian Modeling

Chelsea Cheney, Judson Finley, Erick Robinson, Tim Riley, and Molly Cannon

Ethnohistoric Land Use on Peavine Mountain, Washoe County, Nevada

Vickie Clay

The Age and Function of Slab-Lined Stone Features Associated with a Fremont Foraging-Farming Landscape in Cub Creek, Dinosaur National Monument, Northeastern Utah

David Harvey, Judson Finley, Erick Robinson, and Edward Hermann

The Effects of Fermentation on Maize Starch Grains: An Experimental Archaeology Study to Identify Brewing Practices from Ceramic Vessel Residues

Haden Kingrey, Laura Brumbaugh, and Sonya Sobel

Cambium Peeled Trees in the Southern Blue Mountains of Eastern Oregon

Desiree Quintanilla

Fire and the Fremont at Cub Creek, Dinosaur National Monument, Utah

Mariah Walzer, Judson Finley, Erick Robinson, and R. Justin DeRose

Did Arroyo Formation Impact the Occupation of Snake Rock Village, A Fremont Dryland Agricultural Community in Central Utah ca. AD 1000-1200?

Alexandra Wolberg, Judson Finley, and Erick Robinson

'The Finest and Most Beautiful Camp and Home': The Brief History of Millspaugh, 1899-1915

Eleni Ziogas, Lucinda Simpson, and Bridget Wall

Reception

5:00-6:30

Friday, October 20th

Registration and Check-In

7:30-5:00

Book Room

8:00-5:30

Symposium 3: Tracking the Human Landscape of the Old River Bed Delta at the Pleistocene-Holocene Transition

8:00-11:15

Organizers: Daron Duke and D. Craig Young

The latest archaeological finds from the Old River Bed delta reveal a distinguishing terminal Pleistocene component alongside telling new information about its ancient environment. The delta is best known for its early Holocene record, but these data allow for a richer temporal, spatial, and social context to be developed. The finding of human footprints presents an opportunity for even finer resolution. This symposium highlights the interdisciplinary and collaborative efforts now underway centered on examining people's relationship with a once vast deltaic wetland as it rose, fell, and disappeared in the Bonneville Basin, the largest lacustrine basin in the desert west.

- 8:00 **Introduction to the Old River Bed Delta**
Daron Duke
- 8:15 **Lake Currey and the Origins of the Old River Bed Delta Wetlands**
D. Craig Young and Charles Oviatt
- 8:30 **Human Footprints at the Trackway Site**
Daron Duke, D. Craig Young, and Kyle Freund
- 8:45 **A Novel Method for Radiocarbon Dating Ancient Footprints**
Allison Damick
- 9:00 **A Synthesis of Fire History from the Bonneville Basin, Utah for the last ~20,000 years: A Multi-proxy Approach to Examining the Archaeological Record**
Jennifer DeGraffenried, Isaac Hart, and Andrea Brunelle
- 9:15 **Geochemistry of Lake Bonneville from Dugway Proving Grounds**
Lee Drake
- 9:30 **Break**
- 9:45 **Mollusks and Ostracodes Biofaces of the Old River Bed Delta between ~13,000 and 7500 cal yr BP**
Manuel Palacios-Fest and Daron Duke
- 10:00 **Terminal Pleistocene Environments and Human Foraging in the Old River Bed Delta: Evidence from the Wishbone Site Fauna**
Jack Broughton
- 10:15 **A Post-Clovis Fluted Point and Crescent Component on the Distal Old River Bed Delta, Utah**
Kyle Freund, Daron Duke, Jennifer DeGraffenried, Nate Nelson, and D. Craig Young
- 10:30 **Collaborative X-ray Fluorescence Sourcing and Changes in Lithic Resource Use Through Time on the Old River Bed Delta**
Lucas Johnson, Daron Duke, and Jennifer DeGraffenried

10:45 **Documenting Potential Gathering Areas of Ethnographically Significant Plant Species on the Utah Test and Training Range**

Bruce Pavlik, Heidi Simper, Stefania Wilks, and Lisbeth Louderback

11:00 **Partnering Today for Future Generations: Innovation Approaches to Preservation and Outreach**

Anya Kitterman and Ashley Parker

Symposium 4: In His Footsteps: Tom Connolly's Legacy in Oregon Archaeology

8:00-10:00

Organizers: Jaime Kennedy and Andrew Boehm

After 40+ years, Tom Connolly recently retired as the Director of Archaeological Research at the University of Oregon's Museum of Natural and Cultural History. In addition to extensive work on the Pacific coast and western inland valleys, his contributions to Great Basin archaeology span several decades. Tom's research on perishable artifacts, lithics, and his decades-long collaborations to refine regional cultural chronologies spurred significant developments in our understanding of the Great Basin in deep history and will undoubtedly influence the trajectory of the discipline for years to come. He's literally written the book on Oregon Archaeology and inspired generations of academic, agency, and CRM archaeologists. This symposium honors Tom's legacy through a series of papers presented by friends, colleagues, and others influenced by his impressive career.

8:00 **Tom Connolly and the Ties That Bind**

Katelyn McDonough and Richard Rosencrance

8:15 **Modern Science and the Native View: Tom Connolly's 40 Year Effort to Bridge the Gap**

Perry Chocktoot

8:30 **Textiles from the Paisley Caves: 14,000 Years of Plant Selection in the Northern Great Basin**

Elizabeth Kallenbach

8:45 **The Fort Rock Sandal Pollen Project: New Paleoecological Data for the Fort Rock Basin**

Jaime Kennedy and Thomas Connolly

- 9:00 **Redating the Last Supper Cave Cultural Features: Moving Towards an Understanding of When and How People Used the High Rock Country of Northwestern Nevada**
Geoffrey Smith, Richard Rosencrance, and Katelyn McDonough
- 9:15 **Milking Trash Data: Ongoing Analysis of a Historic Dairy's Domestic Refuse**
Brian Lane and Marlene Jampolksy
- 9:30 **Discussion**
Dennis Jenkins
- 9:45 **Reflections**
Thomas Connolly

Symposium 5: Beyond Stones and Bones: Current Research on Fiber Artifacts in the Great Basin

10:15-12:00

Organizer: Thomas Connolly and Elizabeth Kallenbach

While much of the global archaeological record is dominated by stone and bone, the Great Basin boasts perhaps the most extensive, diverse, and ancient records of fiber artifacts in the world. Studies of plant and animal fiber artifacts in the region have traditionally focused on normative analysis, using structural traits to explore geographic and chronological patterning. More recent work has pioneered fiber identification techniques to better understand environmental context and land use strategies, explored the use of radiocarbon dating of fiber artifacts to achieve chronological control of disturbed contexts, and extracted microfossils from basketry to interpret dietary uses. This symposium examines the status of current research in Great Basin fiber artifacts and explores future directions for fiber investigations.

- 10:15 **The Fiber Artifacts from the Paisley Caves, Oregon**
Thomas Connolly and Elizabeth Kallenbach
- 10:30 **Testing the Feasibility of Fiber Identification for Fine Cordage Artifacts from the Paisley Caves, Oregon**
Elizabeth Kallenbach

- 10:45 **12 Millennia of Perishable Technologies at Cougar Mountain Cave, Oregon**
Richard Rosencrance
- 11:00 **A 2,000-year-old Cradle Basket from Leonard Rockshelter: A New Look at a 70-year-old Collection**
Anna Camp and Misty Benner
- 11:15 **Twist Again Like We Did Last Summer: Cordage and Seasonal Scheduling at Four Siblings Rockshelter, Nevada**
Marion Coe
- 11:30 **The Fiber Artifacts from Floating Island Cave, Utah**
Anne Lawlor
- 11:45 **Some More Comments on Fremont Basketry**
James Adovasio

Symposium 6: Recent Research in Fremont Studies

8:00-12:00

Organizers: David Yoder, Scott Ure, and Michael Searcy

Fremont cultures of the eastern Great Basin and northern Colorado Plateau continue to simultaneously fascinate and puzzle archaeologists working in the region. Recent excavations, analysis of museum collections, application of technology, and reanalysis of previous held ideas and data are helping us to better understand Fremont peoples and systems. The papers in this symposium highlight some of the current Fremont studies being performed by archaeologists in academia, government, museums, and the private sector.

- 8:00 **Experimental Reconstruction of Fremont Granaries**
Ian Farrell, Shannon Boomgarden, and Jenna Foster
- 8:15 **Stream Advantages for Irrigation in Range Creek Canyon**
Jenna Foster, Shannon Boomgarden, and Ian Farrell
- 8:30 **Current Fremont Farming Studies in Range Creek Canyon, Utah**
Shannon Boomgarden, Jenna Foster, Ian Farrell, and Duncan Metcalfe

- 8:45 **Late Fremont Occupation in Utah Valley: Evidence of Lacustrine and Riverine Life at the Hinckley Mounds**
Michael Searcy, Scott Ure, and David Yoder
- 9:00 **Beneath the Surface: Geophysical Investigations of Fremont Sites in Southern Utah Valley**
Jacob Jepsen
- 9:15 **Fremont Architecture: Evidence for Regional Consistency**
Lindsay Johansson
- 9:30 **Exploring the Social Context of Fremont Painted Bowls**
Katie Richards
- 9:45 **Touch of Red: Exploring the Significance of Fremont Red-on-gray Pottery**
Scott Ure and Joseph Bryce
- 10:00 **Break**
- 10:15 **Spatial Distribution and Intrasite Patterning of Binary Fremont Structures in the Tavaputs Plateau and San Rafael Swell Regions of East-Central Utah**
Jody Patterson
- 10:30 **Fremont Perforated Disks: New Spin on an Old Topic**
Joseph Bryce
- 10:45 **The Behunin Figurines: An Archaeological Fraud of Miniature Proportions**
David Yoder
- 11:00 **Exploring Perishable Weaponry Components from the Northern Colorado Plateau**
Tim Riley
- 11:15 **Fremont Figures: A Systematic Approach to Fremont Anthropomorphic Rock Art**
Christopher Watkins, Alyssa Merrill, and Maya Watkins

11:30 **Old Wood Problems and the Dating of Fremont Villages**
James Allison

11:45 **Problems and Prospects in Fremont Chronology**
Judson Finley, Erick Robinson, R. Justin DeRose, and James Allison

GBAA Board Meeting (Closed to Public)

12:00-1:00

Symposium 7: Multi-Disciplinary Investigations of Cultural and Ecological Assemblages at the Paisley Caves in the Chewaucan Basin, South-Central Oregon

1:30-4:00

Organizer: Dennis Jenkins

The Paisley Caves are unusually rich repositories of cultural and natural materials accumulated in deposits spanning 16,000 years in age. Located on the high shoreline of pluvial Lake Chewaucan in the Summer Lake subbasin of the Chewaucan basin, these caves and rockshelters have been professionally investigated twice. First, by Luther Cressman in the period 1937 - 1940 and later by Dennis Jenkins and the University of Oregon field school between 2002 and 2011. Analyses of fish bone, isotopes, megafauna, small mammals, pollen, macrobotanical remains, birds, and insects assist in reconstructing the local ecology over a period of 16,000 years. A total of 353 radiocarbon dates has been obtained on artifacts, bones, cultural features, coprolites (human and non-human), and naturally accumulated plant and animal remains. Obsidian sourcing and hydration performed on >500 specimens provide new insight into the demography and mobility of local populations spanning >14,000 years. The analysis of human coprolites, perishable and non-perishable artifacts, and cultural features provides clarity into the lifeways and challenges of some of the Great Basin's earliest occupants.

1:30 **Pluvial Lake Level Records of the Northwest Great Basin since the Last Glacial Maximum: What We Knew Then and Now, and What We Could Know Better**

Adam Hudson, Meaghan Emery-Wetherell, Patrick Lubinski, Virginia Butler, Katelyn McDonough, and Richard Rosencrance

- 1:45 **Studies of Paisley Caves Fish Remains to Explore Human Lifeways, Biogeography, and Lake History**
Patrick Lubinski, Virginia Butler, Meaghan Emery-Wetherell, Adam Hudson, Thomas Royle, and Dennis Jenkins
- 2:00 **Late Glacial through Early Holocene Environments Inferred from Coprolite and Sediment Pollen Recovered from the Paisley Caves**
Chantel Saban, Daniel Gavin, Erin Herring, and Dennis Jenkins
- 2:15 **Large Mammal Paleontology of the Paisley Caves**
Edward Davis, Rebecca Terry, Meaghan Emery-Wetherell, Katelyn McDonough, Mariya Antonosyan, and Noel Amano
- 2:30 **The Potential of Zooarchaeology by Mass Spectrometry to Reveal Taxonomy of Small Nondiagnostic Bone Fragments Recovered from Paisley Caves**
Mariya Antonosyan, Eden Hill, Noel Amano, Dennis Jenkins, and Nicole Boivin
- 2:45 **Break**
- 3:00 **The Small Mammals of the Paisley Caves: Tracking Diversity and Compositional Turnover Against a Backdrop of Environmental and Cultural Change**
Rebecca Terry, Edward Davis, and Meaghan Emery-Wetherell
- 3:15 **Radiocarbon Dating the Paisley Caves: Artifacts, Features, Human Coprolites/Hair, Paleontology, and Geochronology**
Dennis Jenkins
- 3:30 **Almost Twenty Years of Obsidian Hydration Analysis at Paisley Caves**
Tom Origer
- 3:45 **Paisley Caves: Stone Tools and Debitage**
Daniel Stueber

General Session 2: The Archaeology of the Recent Past and Present

1:30-4:30

Chair: Teresa Wriston

- 1:30 **Bonanza or Baloney? History, Archaeology, and Reality in the Weepah Mining District, Esmeralda County, Nevada**
Sarah Branch
- 1:45 **The Saline Valley Salt Tram: A Virtual Tour**
Jay King
- 2:00 **Grizzly Gulch: A Mining Landscape Through Time Along the Wasatch Front**
Michael Ligman and Seth Button
- 2:15 **Modern Data Recovery Approaches for a Mid-Century Modern Mine**
Margo Memmott
- 2:30 **Hi, Barbie: A Celebration of the Historical Women of the Greenlink West Project**
Maisie Schwartz
- 2:45 **Break**
- 3:00 **Glen Alpine Springs Resort and Landscape Transitions in the Tahoe Sierra**
Stuart Rathbone
- 3:15 **Diversity in the Archive(s): Results from the George Whittell Forest and Wildlife Area**
Pamela Pierce
- 3:30 **Living Artifacts: Culturally Modified Trees in the La Sal Mountains of Eastern Utah**
David Hencmann and Alain Pollock

3:45 **The Archaeological Conservancy and Site Preservation**
Linsie Lafayette

4:00 **The Aerial Perspective: Using sUAS-mounted Sensors to Analyze
Known Archaeological Sites in Lincoln County, Nevada**
Teresa Wriston

Symposium 8: Exploring the Intersections of Human Ecology and Culture History in the Great Basin

1:30-4:15

Organizer: Christopher Morgan

Evolution and ecology-minded Great Basin archaeologists are often frustrated when their research ultimately falls back on historical explanation. Culture historians increasingly incorporate paleoecological information in their analyses, albeit often in the absence of models that might elucidate causal links between environmental and behavioral variability. This symposium presents the latest in research from these competing but also clearly interrelated (and arguably complementary) perspectives with an eye towards exploring how they might better inform one another to provide comprehensive explanation for the diversity of human behavior across the Great Basin.

1:30 **What the Radiocarbon Record Can and Can't Tell Us About Great
Basin Prehistory**
Christopher Morgan

1:45 **The Origin and Intensification of Pinyon Use in the Aboriginal
Western Great Basin**
Robert Bettinger and Michael Delacorte

2:00 **A Wave from the Desert: Tracking Arrow Technology and Style
from the Great Basin to California and Back Again**
Nathan Stevens

2:15 **The Case of the Conspicuously-Absent Greater-Sage Grouse**
Jacob Fisher, Allison Wolfe, and George Ellis

- 2:30 **On the Edge: A Case Study of Late Holocene Hunter-Gatherer Mobility and Intensification at the Poison Creek Rim Site, Abert Rim, OR**
Juan Carlos Jarquin
- 2:45 **Break**
- 3:00 **A Younger Dryas-Early Holocene Occupation in the Central Great Basin**
David Zeanah, Brian Coddling, Robert Elston, and D. Craig Young
- 3:15 **The Traditional Cultural Landscape Type of Significance: A Case Study from the Mojave Desert**
Micah Hale and Loukas Barton
- 3:30 **An Investment Index for Lithic Technology: Implications for Investment, Mobility, and Division of Labor**
Abby Baka
- 3:45 **Cradle Technology and Maternal Foraging Energetics**
Alexandra Greenwald, Alexandra Niclou, Gregory Burns, Hayley Kievman, Abby Baka, and Cara Ocobock
- 4:00 **People and Pinyon Progressing across the Basin: Coincidence or Causality?**
David Thomas and Constance Millar

Poster Session 2: Recent Research in Great Basin Anthropology II

4:00-5:30

Cove Creek Clovis? Exploring Fluted-Point Assemblages in the Eastern Great Basin
Caitlyn Doherty

Cultural Chronology and Late Holocene Features at Connley Cave 6, Oregon
Aiden Hlebechuk, Katelyn McDonough, and Richard Rosencrance

Settlement Patterns Along the Reconstructed Littoral Ecosystems of Carson Sink

Erik Martin

A First Look at the Bone, Stone, Shell, and Glass Beads from the Connley Caves, Oregon

Riley McCormick and Katelyn McDonough

Cody Complexities: Early Holocene Square-based Projectile Points from Southeastern Oregon

Jackson Mueller and Geoffrey Smith

A Survey of Western Stemmed Point Technology in the Harney Basin, Oregon

Jordan Pratt

Raw Material Sourcing of Northern Great Basin Smoking Pipes

Jordan Thompson, Sonya Sobel, and Thomas Connolly

How Attractive Are Those Rocks? Application of a Gravity Model to Predict Toolstone Procurement and Transport

Joshua Trammell, Brendan Ermish, and Ellyse Simons

Rocks are Sometimes Heavy: Applying the Field Processing Model to Bifaces in Hawksy Walksy Valley, Oregon

Kady Walen and Erica Bradley

Abandoned Mine Lands (AML) and Compliance Archaeology

Elisabeth Murphy

Reception

5:00-6:30

Banquet, Awards Presentation, and Keynote Lecture

6:30-8:30

Presentation of the Don D. and Catherine S. Fowler Prize

Donald Fowler, Catherine Fowler, and Justin Bracken

Presentation of the President's and Founders' Lifetime Achievement Awards

Christopher Morgan

Keynote Lecture: Survivance and the Deep Great Basin Past

David Hurst Thomas

Dancing

8:30-10:30

Saturday, October 21st

Registration and Check-In

8:00-12:00

Book Room

8:00-12:00

Symposium 9: Tradition, Teaching, and Technology: Papers in Honor of Dan Stueber

8:00-11:45

Organizers: Geoffrey Smith and Loren Davis

Dan Stueber's career as an archaeologist spans four decades and has been marked by a devotion to understanding flintknapping and lithic technology. During that time, Dan has freely shared his extensive knowledge with both the professional and avocational communities, students, and Tribal members. Today, he is a leading researcher of the Western Stemmed Tradition (WST) in the American West and is working concurrently on several significant late Pleistocene and early Holocene sites in Oregon, Idaho, Nevada, and Utah. He is also committed

to collaboration with Tribal nations and works to share his knowledge with Indigenous communities. Finally, Dan has played an important role in the lives of countless students and professional researchers who share his passion for lithic technology. Papers in this symposium honor Dan by focusing on projects in which he has played an integral role or helped shape through his mentorship of researchers who will continue his legacy for decades to come.

8:00 **Paleoarchaic Land Use of the Camas-Washougal Uplands, Clark County, Washington**

Donald Pattee and Bill Roulette

8:15 **Preliminary Results of the 2022 Excavations at Silvies Cave, Northern Great Basin**

Zachary Newell, Loren Davis, Geoffrey Smith, and Alex Nyers

8:30 **Radiocarbon Dating the Cultural Chronology of the Northern Great Basin**

Dennis Jenkins, Thomas Connolly, Richard Rosencrance, Geoffrey Smith, Katelyn McDonough, and Pamela Endzweig

8:45 **Defining Haskett with Dan Stueber**

Daron Duke and Daniel Stueber

9:00 **Haskett in the Columbia River Basin? A Preliminary Digital Comparison**

Samantha Stone, Loren Davis, Daniel Bean, and Alex Nyers

9:15 **Projectile Point Chronology and Technological Evolution at Cooper's Ferry from ~15,800-10,700 cal BP**

Loren Davis, Daniel Bean, Alex Nyers, Nathan Stevens, and Richard Rosencrance

9:30 **Obsidian and Chert Provenance Studies at the Cooper's Ferry site, Idaho: A Preliminary View**

Alex Nyers and Loren Davis

9:45 **Break**

10:00 **The Value of Aligning Flintknapping Experiments with Digital Geometric Morphometric Analysis**

Loren Davis, Sarah Skinner, Daniel Stueber, and Daniel Bean

- 10:15 **Karuk Master Flintknapper, *Mus-su-peta-na* – Theodore (Ted) Orcutt: Lessons from the Past**
Pamela Endzweig and Daniel Stueber
- 10:30 **Cross Cultural Opportunities for Dialogue and Learning: Sharing Values of Lithics Among and Between Northern Paiute and Western Archaeological Traditions**
Diane Teeman
- 10:45 **Practice Makes Permanent: Stone Tools, Friendship, and Mentorship with Dan Stueber**
Richard Rosencrance and Katelyn McDonough
- 11:00 **An Update on Discriminating Black Rock Concave Base Points from Windust Points Using Basal Metrics**
Erica Bradley, Richard Rosencrance, and Daniel Stueber
- 11:15 **The Form and Function of Oversized Parman Stemmed Points of the Western Stemmed Tradition**
Geoffrey Smith, Daniel Stueber, Erica Bradley, Richard Rosencrance, and Daron Duke
- 11:30 **Reflections**
Daniel Stueber

General Session 3: Traditional Foodways and Technology

8:00-11:00

Chair: Kara Jones

- 8:00 **Re-evaluating the Dietary Significance of Gambel Oak Acorns (*Quercus gambelii*) in the Great Basin, Colorado Plateau, and Southwest: Evidence from Experimental Foraging and Direct Bomb Calorimetry**
Hayley Kievman, Gregory Burns, and Alexander Greenwald
- 8:15 **Starch Granule Analysis in the Intermountain West: Best Practices and New Directions**
Stefania Wilks and Lisbeth Louderback

- 8:30 **The Prevalence of Entomophagy in the Americas: A Meta-analysis of Human Coprolites**
Julie Julison
- 8:45 **Exploitation of Greater Sage-Grouse in the Bonneville Basin**
Allison Wolfe
- 9:00 **Pleistocene Horses in the Archaeological Record: A Focus on the Great Basin**
Jerry Jerrems
- 9:15 **NEEF: Stems for STEM**
Thomas Anguiano and Lee Anne Craig
- 9:30 **Break**
- 9:45 **Aldrich #2 and Mud Springs #1: Two Prehistoric Game Corrals in the Western Great Basin**
Eric Dillingham and Bryan Hockett
- 10:00 **The Epistemology of Great Basin Projectile Point Typology**
Bryan Hockett
- 10:15 **Fishing Features in the Mojave Desert and Beyond: Implications at Ivanpah Dry Lake, NV**
Kara Jones
- 10:30 **The Mojave Desert Has More Western Stemmed Tradition Point Types than Lake Mohave and Silver Lake**
Edward Knell and Daron Duke
- 10:45 **Distribution and Chronology of Schist Millingstones in Owens Valley**
Katie Hanrahan

Fieldtrip

1:00-5:30 Newberry Crater I

Sunday, October 22nd

Fieldtrip

9:00-1:30 Newberry Crater II



Abstracts

Adams, Kenneth (Desert Research Institute)

See **Wriston, Teresa**

Adovasio, James (Senator John Heinz History Center)

Some More Comments on Fremont Basketry

Symposium 5: Beyond Stones and Bones: Current Research on Fiber Artifacts in the Great Basin

Recently, David B. Madsen published an extensive and comprehensive synthesis of Fremont ceramics. In that document, he states that due to the vagaries of preservation, basketry is not useful as a marker of Fremont ethnicity. Because of its ubiquity, the unique style of pottery is one of the very few things which can distinguish these farmer/foragers in western North America during the Formative period. Though I concur with Madsen about issues of preservation, I reiterate here, that despite the fact that basketry is not found at all Fremont sites, it remains the most useful marker of Fremont ethnicity. In short, whoever produced Fremont basketry was Fremont and this subclass of material remains the easiest way to distinguish the Fremont as a group from other agriculturalists in North America.

Allison, James (Brigham Young University)

Old Wood Problems and the Dating of Fremont Villages

Symposium 6: Recent Research in Fremont Studies

Despite the large number of radiocarbon dates from the Fremont region, the chronology of most Fremont sites is not well established. Tree-ring dates are rare, and many sites have only a few radiocarbon dates. Chronological uncertainty introduced by low quality dates makes it difficult to recognize temporal and spatial variation in Fremont settlement, subsistence, and cultural practices. In the last few decades, it has become common for archaeologists to date annual plants, especially maize, but dating of some important Fremont sites still relies on charcoal from structural wood. When both charcoal and annual plant dates are available from the same sites, the charcoal dates are often earlier, and the discrepancy between charcoal dates and higher quality dates is often surprisingly large. This paper examines the chronology of several Fremont sites, documents the extent of the old wood dating problems, and explores the implications for our understanding of Fremont prehistory.

Allison, James (Brigham Young University)

See **Finley, Judson**

Amano, Noel (Max Planck Institute for Geoanthropology)

See **Antonosyan, Mariya**

See **Davis, Edward**

Anguiano, Thomas (RISE)

Craig, Lee Anne (RISE)

NEEF: Stems for STEM

General Session 3: Traditional Foodways and Technology

In 2022, RISE (Resources for Indian Student Education, Inc.) received a NEEF (National Environmental Education Foundation) grant to investigate various methods by which to propagate indigenous plants. RISE youth collaborated with the Bureau of Land Management to field study, identify, collect and propagate four traditionally important plants. Over twenty Native youth had roles in the propagation of plants indigenous to Modoc County, using different processes that included stem cuttings and seeds. A PowerPoint will depict stages of the project learning and outcome with project youth narration and adult staff support.

Antonosyan, Mariya (Max Planck Institute for Geoanthropology)

Hill, Eden (Max Planck Institute for Geoanthropology)

Amano, Noel (Max Planck Institute for Geoanthropology)

Jenkins, Dennis (University of Oregon)

Boivin, Nicole (Max Planck Institute for Geoanthropology)

The Potential of Zooarchaeology by Mass Spectrometry to Reveal Taxonomy of Small Nondiagnostic Bone Fragments Recovered from Paisley Caves

Symposium 7: Multi-Disciplinary Investigations of Cultural and Ecological Assemblages at the Paisley Caves in the Chewaucan Basin, South-Central Oregon

Fossils are excellent sources of information for investigating past biodiversity, paleoecology, and human activity. However, the accuracy of fossil identifications mainly relies on the observable morphological characteristics, making the classification of fragmented or taxonomically-mixed bone records challenging, if not impossible. Due to these limitations, the detailed patterns of biodiversity, species range shifts, extinction/adaptation mechanisms, and many other long-standing palaeoecological questions cannot be sufficiently addressed. With the advancement of biomolecular techniques in the past 20 years, novel methods have been developed to back up the identification and the analysis of biological markers preserved in fossil bones. One such biomolecular approach is collagen peptide mass fingerprinting, also known as zooarchaeology by mass spectrometry (ZooMS). This approach allows for taxonomic identification of highly fragmented bones relying on unique protein amino acid sequence variation within collagen type I (COL1) protein between different taxonomic groups. Here we explore the potential of proteomic identification (ZooMS) of morphologically non-diagnostic

bone fragments recovered from the Paisley Caves. Our analysis resulted in successful ZooMS identifications for 85% of a total bone assemblage, with varying success rates across the site. The reconstructed taxonomic composition is mostly represented by medium to large sized mammals with rare occurrence of birds.

Antonosyan, Mariya (Max Planck Institute for Geoanthropology)

See **Davis, Edward**

Arkush, Brooke (Weber State University)

Hill, Matthew, Jr. (University of Iowa)

Reconstructing Ancient Subsistence Practices: The Fauna from Three Prehistoric Sites in Birch Creek Valley, Eastern Idaho

Symposium 1: From Channel Flakes to Bison Jumps: Current Archaeological Investigations in Southern Idaho

Beginning in 2012, the Weber State University Archaeology Program spent nine consecutive summers excavating four prehistoric sites in the upper Birch Creek drainage of far eastern Idaho. Two of these locations (Bobcat Shelter and Cottontail Shelter) date between 7800 and 300 years ago, and yielded large, well-preserved, and taxonomically diverse faunal assemblages. The two other sites (Hidden Springs and Sagebrush Spring) are open air camps dating between 7000 and 300 years ago, and provided smaller, less diverse faunal collections. Our paper examines butchery of large game represented at the two rockshelters and Sagebrush Spring, and addresses related topics such as species abundance/preference, seasonality, and increased hunting success during late prehistoric times.

Armstrong-Ingram, Angela (Far Western Anthropological Research Group)

See **McGuire, Kelly**

Arnzen, Jacob (Bureau of Land Management)

Got Glass? Distribution of Glass Buttes Obsidian from the Northern Great Basin and Implications for Indigenous Social Networks

General Session 1: Interpreting Toolstone Conveyance, Site Location, and Land Use

The systems of trade and/or shared resources that hunter-gatherers created in the past reflect social networks. These networks may have changed in intensity and extent in response to adaptive pressures linked to changes in climate and population density. Here I analyze the distribution of Glass Buttes obsidian throughout northwestern North America as a proxy to infer temporal and spatial changes in hunter-gatherer social networks. I then compare the results of these temporal-spatial distributions with climate and population trends to seek correlations with the changing social network intensity and extent. The analysis indicates that as more people are on the landscape in the Late Holocene (3,000 cal BP to present), with climate warmer

and drier than that of Terminal Pleistocene (14,000-10,000 cal BP) there is a much higher spatial distribution of Glass Buttes obsidian, indicating a more intense system of social networks.

Baka, Abby (University of Utah)

An Investment Index for Lithic Technology: Implications for Investment, Mobility, and Division of Labor

Symposium 8: Exploring the Intersections of Human Ecology and Culture History in the Great Basin

Changes in technological investment may shed light on human responses to social and environmental change, yet these changes are difficult to quantify archaeologically. Here I develop a new technological investment index for examining change in chipped and ground stone tool investment, and apply it to understand human behavioral changes and dietary resource intensification during the early Holocene at North Creek Shelter, southern Utah, USA. The findings of this study suggest continued investment in chipped stone technology across the early Holocene, consistent with steady consumption of artiodactyls. Findings also suggest increased investment in ground stone technology, consistent with increased low-return plant resource consumption. Additionally, application of a quantitative model for lithics and mobility demonstrates increased reliance on local toolstone across the early Holocene, suggesting decreased mobility and longer stays at North Creek Shelter. The results have implications for the division of labor, as some individuals continued to invest in chipped stone tools for hunting unreliable, high-return prey, while others increasingly invested in ground stone tools for processing more reliable, though lower-return, plants, which may have tethered hunter-gatherers to the site.

Baka, Abby (University of Utah)

See **Greenwald, Alexandra**

Bamberg, John (U.S. Potato Genebank)

See **Louderback, Lisbeth**

Bancroft, Kathy (Lone Pine Paiute Shoshone Tribe)

See **Hill, Amanda**

Barton, Loukas (Dudek)

See **Hale, Micah**

Bean, Daniel (Oregon State University)

See **Davis, Loren**

See **Stone, Samantha**

Benner, Misty (Walker River Paiute Tribe)

See **Camp, Anna**

Bettinger, Robert (University of California Davis)

Delacorte, Michael (California State University Sacramento)

The Origin and Intensification of Pinyon Use in the Aboriginal Western Great Basin

Symposium 8: Exploring the Intersections of Human Ecology and Culture History in the Great Basin

Renewed interest in the timing of the development and intensification of aboriginal pine nut (*Pinus monophylla*) use, and hypotheses suggesting environmental and biotic differences produced different trajectories of nut use in the western and central Great Basin, merits review of existing evidence. Interpretation of these data assumes that variations in use are responses to resource supply and demand, not innovations or inventions that made pine nut use more economical later in time; and, more fundamentally, that pine nuts have always been at least a seasonal component of aboriginal diets. The question is when pine nut use intensified to the levels observed ethnographically. Multiple lines of evidence from both surveys and excavations in eastern California – the Coso and Inyo Ranges and the White Mountains – consistently show a major increase in use of the pinyon-juniper community overall, and initial establishment of pinyon camps and associated features, sometime around A.D. 500. Presence of ground stone indicating plant use before A.D. 500 in the Coso and Inyo pinyon-juniper woodlands likely reflects upland spring and summer seed procurement. More limited data suggest much later pattern of pine nut intensification, after A.D. 1300, in central Nevada, likely associated with the Numic spread.

Bianchini, Michael (Utah State University)

Finley, Judson (Utah State University)

Robinson, Erick (Native Environment Solutions)

Intersecting Geomorphic Features Structure the Fremont Agricultural Landscape on Clear Creek, Fremont Indian State Park, Utah

Poster Session 1: Recent Research in Great Basin Anthropology I

Early agricultural landscapes in the Colorado Plateau are understood as bundled agricultural niches designed to provide multiple opportunities to spread risk of failure of any single field across landscapes and promote sustainable agriculture in marginal environments. Local geological and geomorphic conditions underwrite these bundled niches, although few systematic studies exist in Utah's archaeological record to reconstruct Fremont agricultural systems. Here we present new geoarchaeological and geochronological data from Clear Creek in Fremont Indian State Park associated with Five Finger Ridge, one of the largest and mostly completely excavated Fremont villages in the region. Volcanic tuff from the Marysvale Volcanic Field provides the bedrock controls while also supplying abundant sediment for associated

landforms. Side-valley alluvial fans originating on the flanks of the Tushar Range to the south began accumulating 7,000 years ago creating a stepwise longitudinal gradient in the perennial Clear Creek. Gradient changes in Clear Creek caused a perched water table and formation of a riparian environment which was the largest agricultural niche in the valley. Low-order perennial tributaries to Clear Creek flow along the margins of side-valley fans accumulating deep, well-watered, fine-grained alluvium that were ideal agricultural niches. These distinct geomorphic settings were in a phase of construction during the Fremont occupation of Clear Creek and Five Finger Ridge. Significantly, two paleosols date to the Fremont period indicating landscape and environmental stability consistent with our hypothesis linking hydroclimate and geomorphic variability to the growth potential of Fremont agricultural communities.

Bird, Darcy (Washington State University)

Why Do People Leave? Settlement Persistence in the Central Mesa Verde Region (Hint: It's Rarely Because of Changing Climate)

General Session 1: Interpreting Toolstone Conveyance, Site Location, and Land Use

Some places are ones where people revisit again and again, producing an archaeological record spanning hundreds or even thousands of years, even if occupations are not year-round or have large gaps in the archaeological record. These persistent places are important, as are the conditions that encourage people to leave them. Here, I study the ways in which changing conditions affect peoples' decisions to leave their homes using Optimal Foraging Theory, catchment analysis, and the theory of landesque capital. I look at the Central Mesa Verde region, where we have annual resolution data for maize productivity, occupation size, and institutional availability. I first generated annual catchment sizes for all settlements in the VEPIIN area, then I developed a simulation to calculate the probability that potential fields were farmed. I transformed the output into measurements of catchment quality and field contention, which I then combined with institutional data. I then conducted a stepwise analysis to identify causal mechanisms informing differential occupation lengths for small sites and community centers. Changing field contention and population size are key factors in the decision for people in a settlement to leave, while changing catchment quality and institutional availability are only sometimes relevant. These results aid our understanding of settlement persistence and decision-making within the southwest and may be applied to other regions.

Black, Geena (Utah State University)

Boehm, Andrew (University of Oregon)

Isotopic Studies on Faunal Remains from Owl Cave Shed Light on Bison Predictability on the Eastern Snake River Plain

Symposium 1: From Channel Flakes to Bison Jumps: Current Archaeological Investigations in Southern Idaho

Data collected on Central Plains Early Holocene bison kills points to bison as a predictably available resource on the landscape. This predictability allowed bison hunting by indigenous

people on the Great Plains to continue throughout the Holocene. Archaeological evidence suggests contemporaneous usage of bison as a local resource on the Snake River Plain similar to the Great Plains. While multiple studies on bison remains found in the Eastern Snake River Plain, dating to after 8000 cal BP, have been conducted, few studies have examined bison from earlier periods. As stated previously, some of the earliest bison remains from human kill sites on the Great Plains date to well before 8000 cal BP. The Wasden Site and the bison remains from Owl Cave dating to 9000 cal BP and 11,500 cal BP provide an ideal case study to explore bison and human interactions between the Great Plains and the Eastern Snake River Plain during the Terminal Pleistocene-Early Holocene. Do the terminal Pleistocene and early Holocene bison assemblages in Owl Cave represent the predictable year-round availability of bison as a resource on the Eastern Snake River Plain?

Blong, John (Washington State University)

Archaeology and Traditional Lifeways in a Borderland: Research at the Kelly Forks Work Center Site, Bitterroot Mountains, Idaho

Plenary Session: Beyond Boundaries

The Kelly Forks Work Center Site is located on the North Fork of the Clearwater River in the Bitterroot Mountains, Idaho. The site is positioned in *Nimíipuu* (Nez Perce) traditional territory on the border of the Columbia Plateau and Northern Rocky Mountain physiographic regions. The area was known historically as a travel corridor from *Nimíipuu* territory to adjacent culture groups fostering cultural and economic links across linguistic and geographic boundaries. Ongoing archaeological investigations at the Kelly Forks Work Center Site have revealed deeply buried and stratified late Pleistocene to late Holocene archaeological deposits, including terminal Pleistocene Western Stemmed Tradition and early Holocene Cascade Phase archaeological components similar to coeval archaeological assemblages found across the Columbia Plateau and northern Great Basin. Our research at Kelly Forks is focused on evaluating the stratigraphic context and age of these early deposits, as well as assessing subsistence and land use from archaeological materials. The archaeological record at Kelly Forks provides insight into precontact settlement and subsistence practices in this region and connections to the rich oral history and tradition of *Nimíipuu* people that reside in the region today. The location of the Kelly Forks site in a borderland also offers an opportunity to explore human-environment interactions over time, and the dynamic history of interregional population interactions across geographic and ecological regions.

Boehm, Andrew (University of Oregon)

See **Black, Geena**

Boivin, Nicole (Max Planck Institute for Geoanthropology)

See **Antonosyan, Mariya**

Bommarito, Savannah (University of Utah)

Brunelle, Andrea (University of Utah)

Resource Availability, Diet, and 4600-year Old Maize, Hogup Cave, UT

Poster Session 1: Recent Research in Great Basin Anthropology I

Pollen records from a West Desert wetland sediment core and nearby Hogup Cave were used to reconstruct the environmental and human signal for the past 6000 years. Examining these two pollen records side by side provided a unique opportunity to quantify regional vegetation composition and human diet. Changes in diet breadth as a result of occupation and resource availability were examined within the Hogup Cave pollen record, and two new radiocarbon dates call into question previous interpretations of the cave's depositional sequence and the timing at which maize might have first reached the Great Basin.

Boomgarden, Shannon (University of Utah)

Foster, Jenna (University of Utah)

Farrell, Ian (University of Utah)

Metcalf, Duncan (University of Utah)

Current Fremont Farming Studies in Range Creek Canyon, Utah

Symposium 6: Recent Research in Fremont Studies

Current Fremont studies in Range Creek Canyon, east-central Utah continue to focus on combining archaeology and ethnographic accounts to guide actualistic maize farming experiments designed to better understand the trade-offs faced by arid land farmers. The Range Creek Field Station offers an ideal setting for reconstructing paleo-environmental variability and the response of farmers to that changing environment. We predict that farmers would have acted optimally in response to fluctuating water availability both yearly and seasonally by investing in simple surface irrigation. Constructing and maintaining irrigation systems would have provided supplemental water resulting in increased yields. Our data suggests that even in years when the lower limits of precipitation needs for growing maize are met, the addition of irrigation water to maize fields would have increased yields. The quantitative data on the costs and benefits that we have measured so far, and the lessons we have learned about farming the way prehistoric farmers might have in Range Creek Canyon 1000 years ago will be presented.

Boomgarden, Shannon (University of Utah)

See **Farrell, Ian**

See **Foster, Jenna**

Bowers, Anna (Shoshone-Bannock Tribes Heritage Tribal Office)

See **Wolberg, Alexandra**

Bradley, Erica (University of Nevada Reno)

Rosencrance, Richard (University of Nevada Reno)

Stueber, Daniel (Thunderstone Lithic Consulting)

An Update on Discriminating Black Rock Concave Base Points from Windust Points Using Basal Metrics

Symposium 9: Tradition, Teaching, and Technology: Papers in Honor of Dan Stueber

In the northwestern Great Basin, Black Rock Concave Base (BRCB) points often occur with concave base Windust points, and discriminating between fragmentary specimens can be challenging due to morphological similarities in their basal portions. Discriminating between these point types is important, however, because Windust points are well-dated to the early Holocene and can serve as effective index fossils at otherwise undatable sites, such as those in surface or near-surface contexts. Identifying fragmentary specimens may help situate many Western Stemmed Tradition sites chronologically and elucidate larger-scale patterns of land-use through time. In this paper, we test the hypothesis that BRCB and Windust proximal fragments can be distinguished using traditional morphometric variables such as basal width, concavity depth, and haft element angle. We use multivariate statistics to compare measurements from points recorded across the Great Basin and Columbia Plateau. Finally, we present a statistically generated decision tree for classifying Windust and BRCB points which can easily be applied to future studies.

Bradley, Erica (University of Nevada Reno)

See **Smith, Geoffrey**

See **Walen, Kady**

Branch, Sarah (Broadbent & Associates)

Bonanza or Baloney? History, Archaeology, and Reality in the Weepah Mining District, Esmeralda County, Nevada

General Session 2: The Archaeology of the Recent Past and Present

In early 1927, a tiny mining district near Tonopah was the scene of a mining rush that brought thousands to the northeast corner of Esmeralda County, all eager to be part of what would surely become the next big bonanza. Almost overnight, the small mining camp of Weepah became a bustling tent city, complete with saloons, music halls, casinos, boarding houses, a post office, and a ridiculously large number of hot dog vendors. But the rush that began in March was over by May, and the thousands who came searching their fortunes moved on just as swiftly as they had descended. Instead of a bonanza to rival nearby Tonopah and Goldfield, was the rush to Weepah a fraud to rival the swindles at Rawhide? Or was it simply a case of too much excitement over too little gold? Using the results of a Class III survey completed by Broadbent & Associates, Inc., at Weepah in early 2022 and historic documentation of similar

mining booms (both real and fabricated), this paper explores whether the rush to Weepah was a boom, a bust, or just a bit of baloney.

Broughton, Jack (University of Utah)

Terminal Pleistocene Environments and Human Foraging in the Old River Bed Delta: Evidence from the Wishbone Site Fauna

Symposium 3: Tracking the Human Landscape of the Old River Bed Delta at the Pleistocene-Holocene Transition

Dating to ~12,300 cal BP, the Wishbone Site represents the oldest open-air hearth recorded in the Great Basin and the only terminal Pleistocene faunal-based record of human foraging behavior located on the Bonneville basin valley floor. Located in the Old River Bed Delta, earlier preliminary analyses suggested the fauna was dominated by waterfowl, but identifications below the family level were not attempted. Reanalysis of the fauna to provide finer scale identifications confirms this conclusion but also shows the fauna is overwhelmingly dominated by ducks (*Anatinae*) and more specifically dabbling ducks (e.g., Mallard, *Anas platyrhynchos*; teals, *Spatula discors*, *S. cyanoptera*, *Anas crecca*) that favor shallow water foraging contexts. A lack of fish remains, and piscivores among the avifauna, implies ephemeral or seasonal availability of shallow standing water during the period of site occupation. These data have implications for our understanding of the local ecology and human foraging behavior—notably, a limited importance of large game hunting— of the region during the terminal Pleistocene.

Brumbaugh, Laura (Washington State University)

See **Kingrey, Haden**

Brunelle, Andrea (University of Utah)

See **Bommarito, Savannah**

See **DeGraffenried, Jennifer**

Bryce, Joseph (WestLand Engineering and Environmental Services)

Fremont Perforated Disks: New Spin on an Old Topic

Symposium 6: Recent Research in Fremont Studies

Circular centrally-perforated disks are often interpreted as spindle whorls. However, this interpretation is often questioned as spindle whorls are seen as tools for spinning materials, such as cotton, to be used for textile production. This perspective makes the case for Fremont spindle whorls tenuous as almost no cotton or textiles have been recovered at Fremont sites. This paper uses data from approximately 250 centrally-perforated disks, made of reworked ceramic, unfired clay, and stone, to evaluate the possibility that the Fremont used spindle whorls and associated implications.

Bryce, Joseph (WestLand Engineering and Environmental Services)

See **Ure, Scott**

Burns, Gregory (National Park Service)

See **Greenwald, Alexandra**

See **Kievman, Hayley**

Butler, Virginia (Portland State University)

See **Hudson, Adam**

See **Lubinski, Patrick**

Button, Seth (Logan Simpson)

See **Ligman, Michael**

Byerly, Ryan (Far Western Anthropological Research Group)

DeArmond, Shannon (Far Western Anthropological Research Group)

Testing the Dry Stretch: Assessing the Archaeological Visibility of an Ethnographic Buffer Zone through the Etcharren Valley, Inyo County, California

General Session 1: Interpreting Toolstone Conveyance, Site Location, and Land Use

Ethnographic data highlight an inter-group “dividing line” that transected the Etcharren Valley, situated between the Coso and Argus ranges on traditional Indigenous lands now encompassed by the Naval Air Weapons Station China Lake, in Southern California. Referred to as the “dry stretch,” this apparently mutually observed buffer zone segregated the territories of the Coso and Panamint Shoshone peoples until a late nineteenth century marriage linked these groups. Through variably scaled and grained spatial analyses of archaeological constituent data gathered from a recent post-fire inventory completed near this buffer zone, and further incorporating data from other regional archaeological studies, we assess the potential archaeological perceptibility and antiquity of this otherwise “invisible boundary.” Specifically, we investigate the spatial distributions and inter-area densities of temporally diagnostic projectile points, rock imagery, bedrock milling features, and lithic artifact toolstone profiles.

Camp, Anna (Nevada State Museum)

Benner, Misty (Walker River Paiute Tribe)

A 2,000-year-old Cradle Basket from Leonard Rockshelter: A New Look at a 70-year-old Collection
Symposium 5: Beyond Stones and Bones: Current Research on Fiber Artifacts in the Great Basin

Leonard Rockshelter, located in the Humboldt Range of western Nevada, was re-excavated in 2018-2019 to determine if the site had been occupied during the late Pleistocene. To better understand the site chronology, we examined and sampled cultural materials originally excavated by Robert Heizer in the 1950s. The basketry types are like other assemblages from nearby caves and rockshelters in the Humboldt Sink, except for one basket fragment clearly identifiable as a cradle, and another fragment, which we believe to be a potential cradle, that was not identified as such by Heizer. Both objects were dated to between ~2,000-3,000 cal BP. These are the earliest known dates for a cradle found in the Great Basin. In fact, there are very few known cradle baskets from Great Basin archaeological sites at all. These baskets provide some insight into the regional origins of cradle baskets and allow us to explore ideas around childcare and mobility over ~2,000 years ago.

Cannon, Molly (Utah State University)

See **Cheney, Chelsea**

Carney, Molly (Oregon State University)

Scher, Naomi (Far Western Anthropological Research Group)

Tushingham, Shannon (California Academy of Science)

The Longue Durée of Kalispel Food Security: A Multiproxy Approach to Food Processing, Preference, and Access in the Past

Plenary Session: Beyond Boundaries

Food security is one of the most important aspects of strong, resilient food systems and healthy communities. Food security exists when all people have consistent access to nutritious and culturally appropriate foods, produced and distributed in socially acceptable ways. Archaeology offers a means of documenting and understanding deep time histories and legacies of food security, highlighting millennia of subsistence solutions across climatic and social conditions. In this paper we explore the archaeology of food security and resilience of the Pend Orielle Valley, WA, in partnership with the Kalispel Tribe. Our work draws on the Food and Agricultural Organization's dimensions of food security to document plant food availability, access, preference, sustainability, and degrees of human agency over the last 3,000 years. We specifically look to macrobotanical, geoarchaeological, and fire-modified rock (FMR) data lines from communal food processing and consumption features within 8 sites located in ancestral Kalispel lands. As we continue to work together, we share these records of food security and provisioning with the Tribe so they can continue to define their own contemporary food system that honors and acknowledges these culinary traditions and histories of resilience.

Carpenter, Tim (Far Western Anthropological Research Group)

See **McGuire, Kelly**

Cheney, Cheney (U.S. Forest Service and Utah State University)

Finley, Judson (Utah State University)

Robinson, Erick (Native Environment Solutions)

Riley, Tim (Utah State University)

Cannon, Molly (Utah State University)

Fremont Legacy in Capitol Reef and the Waterpocket Fold: A Radiocarbon Analysis of the Pectol Collection Coiled Basketry Using Bayesian Modeling

Poster Session 1: Recent Research in Great Basin Anthropology I

This study presents a chronology of 18 well-preserved and individually dated Fremont coiled baskets from Utah's Capitol Reef–Waterpocket Fold area as a test for a recent hypothesis that early agricultural communities in the northern Colorado Plateau formed during a period of ideal precipitation conditions and agricultural intensification from AD 840–1080. We treat basketry as a proxy for maize intensification and community formation following the logic that increased food production required more containers while signaling a limited and redundant use of space associated with developmental farming societies. We add 23 new AMS ages from the 18 coiled baskets to an existing set of dated perishables from the Pectol Collection, which includes leather, textiles, and food remains collected from the area in the early 20th Century. We compare the chronology of shorter-lived plants with a legacy archaeological dataset of charcoal ages using a permutation test of summed probability distributions to demonstrate that an old-wood problem in the legacy data consistently overestimates regional agricultural occupations by about 300 years, a significant margin of error for an archaeological event that persisted for barely a millennium from AD 300–1300. A Bayesian age model of basketry design techniques deconstructs the underlying structure of the coarse-grained summed probability distribution highlighting trends in artistic style spanning generations of cultural transmission. The combined approach demonstrates that local agricultural intensification did not occur until AD 1100 indicating a north–south progression of regional agricultural intensification resulting from combined socioecological dynamics in an overall sensitive dryland ecosystem.

Chocktoot, Perry (The Klamath Tribes)

Welcome and Invocation

Plenary Session: Beyond Boundaries

Mr. Chocktoot opens the 38th Great Basin Anthropological Conference.

Chocktoot, Perry (The Klamath Tribes)

Modern Science and the Native View: Tom Connolly's 40 Year Effort to Bridge the Gap

Symposium 4: In His Footsteps: Tom Connolly's Legacy in Oregon Archaeology

Throughout his 40 years as the Director of the Research Division Museum of Natural and Cultural History at the University of Oregon Tom Connolly has had an exemplary positive effect

on the State's working relationship with The Klamath Tribes. While they have inevitably had differing views and goals, the Museum and The Klamath Tribes have worked closely and successfully over the last several decades to facilitate public safety projects while simultaneously protecting cultural heritage sites on lands ceded by The Klamath Tribes.

Clay, Vickie (Far Western Anthropological Research Group)

Ethnohistoric Land Use on Peavine Mountain, Washoe County, Nevada

Poster Session 1: Recent Research in Great Basin Anthropology I

Four heritage resources on Peavine Mountain, in an area of historical joint use by Washo and Paiute Peoples, contain ethnohistoric artifacts. These archaeological sites were identified during survey and treatment for a proposed transmission line. Ethnohistoric features including remains of two traditional summer houses and a series of stacked rock hunting blinds contained a wealth of information. Artifacts suggest the area was inhabited shortly after substantial white incursion and settlement in the Truckee Meadows during the late 1860s and 1870s. Native American specialists from the Washoe Tribe and the Reno Sparks Indian Colony provided collaborative input on the possible uses of features and artifacts. This poster presents an overview of findings and activities inferred from the artifact assemblage.

Clements, Joshua (Idaho National Laboratory)

Investigating the Owl Cave Bison Bone Bed Lithic Assemblage

Symposium 1: From Channel Flakes to Bison Jumps: Current Archaeological Investigations in Southern Idaho

This paper re-examines the lithic assemblage associated with the bison bone bed recovered from the Wasden archaeological over 50 years after its excavation and publication. All the stone tools from Owl Cave's layer 16 were analyzed using modern standards and techniques. The classification of all tools, n= 91, and X-Ray Fluorescence (XRF) spectroscopy of all obsidian and fine-grained volcanic material, n= 47, demonstrates that the lithic assemblage is consistent with other Paleo-Indian bison kills from the same period. Furthermore, 12 new Accelerator Mass Spectroscopy (AMS) dates on bison bone from across the bone bed support this conclusion by confirming the bone bed represents a single kill event, in addition to providing accurate dates for the 20 associated projectile points. These analyses are part of a larger ongoing re-investigation of the Wasden archaeological site.

Clements, Joshua (Idaho National Laboratory)

See **Rosencrance, Richard**

Codding, Brian (University of Utah)

See **Zeanah, David**

Coe, Marion (SWCA Environmental Consultants)

Twist Again Like We Did Last Summer: Cordage and Seasonal Scheduling at Four Siblings Rockshelter, Nevada

Symposium 5: Beyond Stones and Bones: Current Research on Fiber Artifacts in the Great Basin

The interaction between humans and plants is a perennial subject in classifying human lifeways, especially in the study of hunter-gatherers. Modern ethnobotanical research stresses the active relationship between foragers and local plants by highlighting land-management, burning practices, coppicing, transplanting, among other activities which blur the boundary between static definitions of subsistence strategies. Fibers used for cordage may contribute to these nuanced discussions of people/plant interaction, particularly in the context of manufacture and use of this diverse material culture. Here, a microscopic analysis of the Four Siblings Rockshelter archaeological assemblage of cordage is presented as a case study to demonstrate the application of this approach to characterizing seasonality and task scheduling in the eastern Great Basin.

Commendador, Amy (Idaho Museum of Natural History)

See **Rosencrance, Richard**

Connolly, Thomas (University of Oregon)

Reflections

Symposium 4: In His Footsteps: Tom Connolly's Legacy in Oregon Archaeology

Dr. Connolly reflects on his 40+ year career.

Connolly, Thomas (University of Oregon)

Fiber Artifact Dating and Relevance to Continuing Research in the Northern Great Basin

Plenary Session: Beyond Boundaries

The Great Basin is home to one of the world's most ancient and diverse records of fiber artifacts. Although much has been collected in the context of professional archaeological work, many of the archaeological perishables in museum collections today have been removed under uncontrolled conditions, or in the context of decades-old archaeological work that lacks the controls we expect today. But organic artifacts have the advantage of being directly datable, and over the past 30-some years, a community of researchers from the BLM, and Nevada and Oregon state museums and universities, have collaborated to systematically radiocarbon date perishable artifacts from northern Great Basin sites. These have been used to identify temporal and geographic boundaries for specific forms or structural types, and to clarify chronologies of iconic sites where chronological controls have been wanting. Beyond dating, recent research of perishable artifacts is looking at basketry materials, isotopes, and extracted microfossils to explore procurement ranges, seasonality, and dietary uses.

Connolly, Thomas (University of Oregon)

Kallenbach, Elizabeth (University of Oregon)

The Fiber Artifacts from the Paisley Caves, Oregon

Symposium 5: Beyond Stones and Bones: Current Research on Fiber Artifacts in the Great Basin

The Paisley Caves are best known for the work led by Dennis Jenkins that established it as a widely accepted site of pre-Clovis occupation in the Americas. In addition to the great quantity of fibrous debris in the caves, the site produced hundreds of fiber artifacts, including cordage, braids, basketry, matting, sandals, and other structures. A majority derives from the Jenkins excavations, but fiber collections made by Luther Cressman in 1938 and '39, and by private parties in the 1930s and 1950s, are also held by the University of Oregon Museum of Natural & Cultural History. Using all the Paisley collections, we describe the site's fiber assemblage by structural categories and then consider these by the site's defined chronological periods. The identification of plant materials by Kallenbach is ongoing, but for this presentation we assigned materials to four fundamental categories: bark (primarily sagebrush), reeds (bulrush/tule, cattail, sedge), processed bast fibers such as dogbane and stinging nettle, and other (unidentified bark, grass, etc.).

Connolly, Thomas (University of Oregon)

See **Jenkins, Dennis**

See **Kennedy, Jaime**

See **Thompson, Jordan**

Conti, Alberto (Chronicle Heritage)

Utilizing Surface Assemblages to Assess Regional Site Distributions in Southern Idaho

General Session 1: Interpreting Toolstone Conveyance, Site Location, and Land Use

This paper explores the dominant archaeological method of recording surface assemblages in southern Idaho, emphasizing the need for researchers to adapt to the decline of block excavations. Accurately collected surface data can provide insight regarding site function. This study utilizes data generously provided by the Idaho Army National Guard Environmental Management Office (IDARNG-EMO). The data has been collected during site monitoring that has spanned over sixteen years within the Orchard Combat Training Center, located south of Boise, Idaho. Recent work has consolidated the data using a functional schema that has been commonly applied to precontact sites in southern Idaho. This functional schema was derived from earlier work conducted by David Thomas (1983) in Monitor Valley though it originates from Howard Winter's (1969) work in the Central Wabash Valley of Illinois. This study utilizes Winter's functional schema, as it was applied to the IDARNG-EMO database, to identify possible precontact residential bases within the expansive 171,000-acre training range. Utilizing GIS software, this study maps likely residential bases relative to other precontact and

multicomponent sites and the surrounding environmental context. This study provides a comprehensive framework for leveraging surface assemblages for assessing regional site distributions.

Craig, Lee Anne (RISE)

See **Anguiano, Thomas**

Damick, Allison (University of Tennessee)

A Novel Method for Radiocarbon Dating Ancient Footprints

Symposium 3: Tracking the Human Landscape of the Old River Bed Delta at the Pleistocene-Holocene Transition

Phytoliths, silicate microfossils that form inside the cell structures and in the intracellular spaces of vascular plants, occlude carbon from the atmosphere and the soil during the plant's lifespan. The possibility of extracting and dating that carbon has attracted research interest in recent decades, but different methods for phytolith purification before dating have yielded conflicting results. In 2017, Asscher et al. tested a range of phytolith purification methods from archaeological contexts with known dates, and were able to establish effective parameters for the process. For this study, a micromorphology slide was produced from the cross-section of a footprint at the Trackway Site in the Old River Bed Delta, Utah, to establish the location of phytoliths trapped between the footprint fill and the underlying wetland deposit. Phytoliths were then extracted from that contact zone in additional block samples taken, purified according to a method that builds on Asscher et al.'s work, and sent for radiocarbon dating. This paper outlines that process and our current status with this project.

Davis, Edward (University of Oregon)

Terry, Rebecca (Oregon State University)

Emery-Wetherell, Meaghan (University of Arizona)

McDonough, Katelyn (University of Oregon)

Antonosyan, Mariya (Max Planck Institute for Geoanthropology)

Amano, Noel (Max Planck Institute for Geoanthropology)

Large Mammal Paleontology of the Paisley Caves

Symposium 7: Multi-Disciplinary Investigation of Cultural and Ecological Assemblages at the Paisley Caves in the Chewaucan Basin, South-Central Oregon

The Paisley Caves, renowned for their rich archaeological and paleoecological records, stand out as a unique site capturing the late Pleistocene to early Holocene transition. While other caves in the Intermountain West of the USA have yielded paleoecological data, Paisley Caves uniquely offer both paleontological and archaeological material, shedding light on the Pleistocene Megafaunal Extinction and the arrival of the first Americans. GRIWM analysis of the

extensive radiocarbon dating efforts place the local loss of megafauna at approximately 12,771 (13,130-12,400) cal. BP, indicating megafauna presence during the early stages of the Younger Dryas. This contrasts with previous notions of a pre-Younger Dryas extinction, suggesting a complex relationship between climatic changes and local loss of megafauna. Human arrival at Paisley Caves is GRIWM estimated to 15,086 (15,726-14,627) cal. BP, predating Clovis culture. This timeline suggests a coexistence of humans and megafauna for about 1500 years, aligning with the Blitzkrieg model's predictions of human-driven extinction. However, regional-scale analyses propose a less significant human role. Pairwise correlations between artifacts, megafaunal bones, and coprolites hint at human influence on megafaunal assemblages, increasing after the Younger Dryas. Cut-marked bones indicate human utilization, particularly in the Younger Dryas Botanical Lens deposit. Future research directions at Paisley Caves involve exploring the vast collection of vertebrate specimens for LP/EH paleoecology and utilizing stable isotope data and ancient DNA techniques to understand ecological changes during cultural presence.

Davis, Edward (University of Oregon)

See **Terry, Rebecca**

Davis, Loren (Oregon State University)

Studying Late Pleistocene-Aged Sites in the Far West: Some Perspectives from Beyond the Great Basin

Plenary Session: Beyond Boundaries

All around the world, the archaeology of the late Pleistocene captivates the imaginations of professionals and the public alike, probably because it reflects a time when all peoples practiced foraging lifeways in a world far different than today. In this presentation, I discuss three case studies about late Pleistocene archaeology in the Pacific Northwest. The first case study focuses on archaeological investigations at the *Nipéhe/Cooper's* Ferry site in western Idaho, where research revealed a long record of cultural presence starting before ~16,000 cal BP. The second case study highlights recent work at the Seven Eagles site in northern Idaho where Tribal-led investigations led to the discovery of a new Western Stemmed Tradition site. The third case study involves the search for submerged landscapes and cultural occupation on the continental shelf zone of Oregon and Washington. These case studies bear common themes of Tribal collaboration, methodological and conceptual innovation, and social justice—elements worth developing and practicing in the archaeological study of all times and places.

Davis, Loren (Oregon State University)

Bean, Daniel (Oregon State University)

Nyers, Alex (Northwest Archaeometrics)

Stevens, Nathan (California State University Sacramento)

Rosencrance, Richard (University of Nevada Reno)

Projectile Point Chronology and Technological Evolution at Cooper's Ferry from ~15,800-10,700 cal BP

Symposium 9: Tradition, Teaching, and Technology: Papers in Honor of Dan Stueber

The Cooper's Ferry site, located in western Idaho, contains a long record of repeated cultural occupation beginning by at least 15,800 cal BP and continuing into the late Holocene. Excavations conducted at the site recovered over 100 complete and fragmentary stemmed and lanceolate projectile points from well dated late Pleistocene to early Holocene contexts, providing a unique opportunity to study technological and stylistic patterns of design and manufacture. This presentation will report on the chronological sequence of projectile points from the Cooper's Ferry site and the characteristic aspects of their geometric morphometry revealed by the analysis of 3D digital models and more traditional visual observations. In sum, our analysis establishes that there are clear morphometric characteristics of hafting and blade design as well as overall modes of manufacture that discriminate different periods of projectile point technology at Cooper's Ferry. These findings show that there is significant variation in point form associated with early stemmed points in North America and clear quantitative criteria that can be leveraged to define temporal modes in projectile points forms within the Western Stemmed Tradition.

Davis, Loren (Oregon State University)

Skinner, Sarah (Green Mountain National Forest)

Stueber, Daniel (Thunderstones Lithic Consulting)

Bean, Daniel (Oregon State University)

The Value of Aligning Flintknapping Experiments with Digital Geometric Morphometric Analysis

Symposium 9: Tradition, Teaching, and Technology: Papers in Honor of Dan Stueber

The art of flintknapping, the ancient practice of crafting stone tools, represents one of the earliest manifestations of human technological innovation and aesthetic sensibility. These stone artifacts provide a tangible link to past human lives, offering clues about early human cognition, behavior, and culture. Replication of flintknapped artifacts have yielded significant insights into the techniques and skills employed by human ancestors and provide a theoretical bridge between the processes of past human behavior and their associated archaeological products. The advent of 3D scanning technology and geometric morphometric analysis presents an unprecedented opportunity to delve deeper into the intricacies of stone tool production. By combining traditional methodologies with cutting-edge technological

approaches, we can unravel the intricate cultural processes that underpin stone tool creation, thereby expanding our understanding of early human societies. Here, we offer a framework for leveraging manual and digital approaches to the study of stone tools and highlight this process by describing a study of projectile point curation and resharpening from the Cooper's Ferry site in western Idaho.

Davis, Loren (Oregon State University)

See **Newell, Zachary**

See **Nyers, Alex**

See **Stone, Samantha**

DeArmond, Shannon (Far Western Anthropological Research Group)

See **Byerly, Ryan**

DeGraffenried, Jennifer (U.S. Army Dugway Proving Ground)

Hart, Isaac (University of Utah)

Brunelle, Andrea (University of Utah)

A Synthesis of Fire History from the Bonneville Basin, Utah for the last ~20,000 years: A Multi-proxy Approach to Examining the Archaeological Record

Symposium 3: Tracking the Human Landscape of the Old River Bed Delta at the Pleistocene-Holocene Transition

In collaboration with archaeologists from Dugway Proving Ground, our team has collected numerous cores from springs and playas across the West Desert region of Utah, specifically the Bonneville Basin. These cores were collected to reconstruct the past environmental conditions for the last 15,000+ years to better understand available resources and favorable conditions for prehistoric inhabitants of the area as well as the climatic conditions during various occupations of different archaeological sites. The focus of the overarching research project is to understand the timing and geography of various archaeological sites in conjunction with the paleoenvironment. The research presented here examines the fire history records generated from several cores across the basin for the last 20,000 years. We address the potential role of aboriginal burning on the fire regime in the West Desert region from a site that contains an elevated fire signature which simultaneously coincides with the presence of human markers in the elemental data. Using this multi-proxy approach, we then compare this data to the presence/absence of archaeological sites throughout time surrounding the spring.

DeGraffenried, Jennifer (U.S. Army Dugway Proving Ground)

See **Freund, Kyle**

See **Johnson, Lucas**

del Rio, Alfonso (University of Wisconsin)

See **Louderback, Lisbeth**

Delacorte, Michael (California State University Sacramento)

See **Bettinger, Robert**

DeRose, R. Justin (Utah State University)

See **Finley, Judson**

See **Walzer, Mariah**

Dillingham, Eric (Humboldt-Toiyabe National Forest)

Hockett, Bryan (Bureau of Land Management)

Aldrich #2 and Mud Springs #1: Two Prehistoric Game Corrals in the western Great Basin

General Session 3: Traditional Foodways and Technology

We review and compare two aboriginal large game corrals in western Nevada. Aldrich #2 (26Ly2889) is 28 kilometers northwest of the Mud Springs #1 trap (26Mn1702), respectively in Lyon and Mineral Counties. Projectile point types fall mainly from the Middle Archaic to Late Prehistoric periods. Both corrals are in open sagebrush environments but use different ‘type’ blueprints to adjust for local topography. The Aldrich #2 corral is in an ideal location to hunt both pronghorn and desert bighorn sheep while the Mud Springs #1 trap likely focused on pronghorn, based on modern animal distributions. However, the ‘blueprints’ would not seem to be reliable indicators of potential targeted species, based on comparisons to western Nevada traps with faunal assemblages, as nearly all of these assemblages are pronghorn.

Doherty, Caitlyn (Texas A&M University)

Cove Creek Clovis? Exploring Fluted-Point Assemblages in the Eastern Great Basin

Poster Session 2: Recent Research in Great Basin Anthropology II

Despite its prominence in Paleoindian archaeology throughout much of North America, Clovis has long been overshadowed in the Great Basin by the far more locally prolific Western Stemmed Tradition. Despite decades of research, the relationship between the two distinct techno-complexes remains unclear. Largely due to difficulties related to dating and the general rarity of buried sites, the nature of Clovis in the region is particularly poorly understood. In 2021 and 2022, a reinvestigation was conducted in Cove Creek, Utah at a rare concentration of sites (42MD1341, 42MD1404, 42MD2502, 42MD2535, 42MD2604, 42MD2645, and 42MD3117), where original investigators reported surficial Clovis and/or Western Stemmed diagnostic materials and noted the potential for buried deposits. Over two years, approximately 3000 artifacts were collected from surface surveys at six sites and an additional 100 from test pits excavated at

three sites. Here, the preliminary results of the surface surveys, test excavations, and material analyses are reported.

Drake, Lee (University of New Mexico)

Geochemistry of Lake Bonneville from Dugway Proving Grounds

Symposium 3: Tracking the Human Landscape of the Old River Bed Delta at the Pleistocene-Holocene Transition

The climatic changes from the Last Glacial Maximum (LGM) to the Holocene, combined with the unique environment of Lake Bonneville, created complex geochemical signals as climatic and environmental influences combined. The present study investigated both major and trace geochemistry to identify key climatic and environmental markers for Lake Bonneville, using a number of sediment cores acquired from springs in Dugway Proving grounds between 2014 and 2019. Notable findings include tracking sedimentary inputs during the LGM, a clear warming signal associated with the Bölling-Alleröd period, the transition from a lacustrine to terrestrial environment in the early Holocene, and possibly the start of spring activity associated with an increase in El-Niño activity in the mid Holocene.

Duke, Daron (Far Western Anthropological Research Group)

Introduction to the Old River Bed Delta

Symposium 3: Tracking the Human Landscape of the Old River Bed Delta at the Pleistocene-Holocene Transition

The terminal Pleistocene-early Holocene archaeology of the Old River Bed delta was unknown prior to the 1990s but has been the subject of intense research effort since. In what would have been an expansive marshland in Utah's southern Great Salt Lake Desert, the delta was likely the premier draw for people in the eastern Great Basin until its disappearance about 9,500 years ago. In this introduction, the Old River Bed delta's geography, environment, and timing are sketched alongside an overview of previous research and its benchmarks for the current studies in the symposium.

Duke, Daron (Far Western Anthropological Research Group)

Henrikson, L. Suzann (Idaho National Laboratory)

Farthering Folsom: A Technological Analysis of the "It Still Breathes" Site in Eastern Idaho's Pioneer Basin

Symposium 1: From Channel Flakes to Bison Jumps: Current Archaeological Investigations in Southern Idaho

Idaho's Folsom record has received relatively little attention for lack of bonafide site assemblages. That changed recently with the American Antiquity publication of the Wasden site (Owl Cave) Folsom component. However, the rest of the Idaho signature remains largely limited to isolated Folsom projectile point finds. Many of these, like Wasden, are within the

greater Pioneer Basin region of eastern Idaho, an internal drainage catchment west of the Snake River, making this a key Folsom locality west of the Rocky Mountains. The It Still Breathes site is a Folsom surface campsite in the Pioneer Basin with a complement of tools and debitage, allowing for comparison with widely recognized Folsom technological patterning. A detailed analysis is presented in this paper, alongside implications for Idaho's Folsom record as it relates to patterns of lithic economy, site function, mobility, and social boundaries attributed to Folsom west of the Rocky Mountains.

Duke, Daron (Far Western Anthropological Research Group)

Stueber, Daniel (Thunderstones Lithic Consulting)

Defining Haskett with Dan Stueber

Symposium 9: Tradition, Teaching, and Technology: Papers in Honor of Dan Stueber

Haskett projectile points were first defined in Idaho in 1965 by Robert Butler and have since figured variously into discussions of non-fluted lanceolate technology from the terminal Pleistocene. Finds in the 2010s on the Old River Bed delta in Utah's Great Salt Lake Desert provided an opportunity to reexamine Haskett through a large sample in a new locality with temporal control. Dan Stueber has been critical to this effort by helping define Haskett in a manner that emphasizes its most salient technological attributes over simple morphology. We present the results of our collaboration in this paper, focusing on Haskett's defining attributes, chronology, and geography and how they advance our understanding of early period human use of the Intermountain West.

Duke, Daron (Far Western Anthropological Research Group)

Young, D. Craig (Far Western Anthropological Research Group)

Freund, Kyle (Far Western Anthropological Research Group)

Human Footprints at the Trackway Site

Symposium 3: Tracking the Human Landscape of the Old River Bed Delta at the Pleistocene-Holocene Transition

In 2022, ancient human footprints were discovered on the Old River Bed delta. Their preservation and context showed the unshod feet of adults and children infilled with stream sand from wading in waters that disappeared with the delta almost 10,000 years ago. The prints' stratigraphic position suggested they could date as early as the terminal Pleistocene alongside similarly preserved Haskett-associated archaeology in the vicinity, ca. 12,300 cal BP. In 2023, we excavated at the site to directly determine the age and geomorphic sensitivity of the footprints. In addition to excavations of individual prints, we employed several modern technologies, including ground-penetrating radar and 3D scanning. We discuss the results of these efforts in this paper.

Duke, Daron (Far Western Anthropological Research Group)

See **Freund, Kyle**

See **Henrikson, L. Suzann**

See **Johnson, Lucas**

See **Knell, Edward**

See **Palacios-Fest, Manuel**

See **Smith, Geoffrey M.**

Ellis, George (California State University Sacramento)

See **Fisher, Jacob**

Elston, Robert (Retired)

See **Zeanah, David**

Emery-Wetherell, Meaghan (University of Arizona)

See **Davis, Edward**

See **Hudson, Adam**

See **Lubinski, Patrick**

See **Terry, Rebecca**

Endzweig, Pamela (University of Oregon)

Stueber, Daniel (Thunderstones Lithic Consulting)

Karuk Master Flintknapper, Mus-su-peta-na - Theodore (Ted) Orcutt: Lessons from the Past
Symposium 9: Tradition, Teaching, and Technology: Papers in Honor of Dan Stueber

Generous grants from the National Film Preservation Foundation have supported the preservation and digitization of historic footage curated at the University of Oregon Museum of Natural and Cultural History. To our knowledge, these films have not previously been publicly viewed. A short movie showed an unknown flintknapper at work. He was ultimately identified by Dan Stueber as Theodore Orcutt, a Karuk Tribal member from Northern California and master flintknapper who made very large bifaces, known as “wealth blades.” Mr. Orcutt’s bifaces were used in ceremony, but he also made hundreds of them for commercial sale. Consequently, they appear in the holdings of the Smithsonian Institution as well as many other museums and private collections. Mr. Orcutt traveled widely to collect obsidian and other types of stone for his knapping work. He especially sought obsidian for his large wealth blade bifaces on excursions to Glass Buttes, Oregon, in the 1930s-40s. This presentation explores Mr. Orcutt’s unique flintknapping technique.

Endzweig, Pamela (University of Oregon)

See **Jenkins, Dennis**

Ermish, Brendan (Logan Simpson)

See **Trammell, Joshua**

Estes, Mark (G2 Archaeology)

See **Wriston, Teresa**

Farrell, Ian (University of Utah)

Boomgarden, Shannon (University of Utah)

Foster, Jenna (University of Utah)

Experimental Reconstruction of Fremont Granaries

Symposium 6: Recent Research in Fremont Studies

Food storage has been a topic of interest for decades, and storage by Fremont period maize farmers in Range Creek Canyon (RCC) has inspired questions from visitors and researchers alike. In arid environments, agricultural surplus can be critical to survival. Having stored surplus available when needed is a benefit likely well worth the costs. Storage features built by the Fremont in RCC appear to represent considerable investment into secure facilities in the form of above ground granaries. There is, however, significant variation in how granaries were made and where they are located. Experimental reconstructions of these granaries help to explain variation by providing estimates of construction costs associated with different types of granaries, as well as any differential benefits conferred by those types. Additional research into how the Fremont lifted building materials into difficult to access locations is also discussed. Information gained from these experiments will tie into analyses regarding the total costs of subsistence in RCC.

Farrell, Ian (University of Utah)

See **Boomgarden, Shannon**

See **Foster, Jenna**

Fillingame, Esther (Lone Pine Paiute Shoshone Tribe)

See **Hill, Amanda**

See **Wall, Bridget**

Finley, Judson (Utah State University)

Robinson, Erick (Native Environment Solutions)

DeRose, R. Justin (Utah State University)

Allison, James (Brigham Young University)

Problems and Prospects in Fremont Chronology

Symposium 6: Recent Research in Fremont Studies

Archaeologists have long noted the limitations of Fremont archaeological chronologies. We are unable to properly understand the behavioral ecology or social implications of Fremont without greater chronological precision. The highly resolved tree-ring records of the Four Corners region are held up as the ideal, but these kinds of records only exist after the pithouse-to-pueblo transition ca AD 750. Here we present an analysis of the legacy radiocarbon record to demonstrate how low-density and low-precision archaeological chronologies limit interpretations of relatively large and architecturally complex Fremont villages. We introduce a dataset of more than 200 new AMS radiocarbon dates, mostly from short-lived annuals, that accurately depicts the complex nature of early agricultural community formation. In doing so, we highlight a consistent 300-year old-wood problem that underwrites the legacy database. Chronological models show that the occupational span of some Fremont villages can be resolved on decadal timescales that, while not annually resolved like Four Corners records, have equivalent interpretive power. High-density and high-precision samples combined with intensive chronological modeling enable tests of the complex nature of archaeological site formation. Fremont villages that may have been occupied for more than a century are understood as composite decadal-scale events. We compare our results with current understandings of pithouse community formation across the Greater Southwest between AD 200–900. We demonstrate how carefully dated and modeled Fremont sites are the ideal for understanding pre-pueblo community formation, which is one key contribution the Fremont archaeological record makes in the study of foraging-farming transitions.

Finley, Judson (Utah State University)

See **Cheney, Chelsea**

See **Bianchini, Michael**

See **Harvey, David**

See **Walzer, Mariah**

See **Wolberg, Alexandra**

Finn, Jennifer (Utah State University and Bureau of Land Management)

Mobility on the Eastern Snake River Plain: Obsidian Conveyance and Spatial Analysis of Early Holocene and Northern Side-notched Projectile Points

Symposium 1: From Channel Flakes to Bison Jumps: Current Archaeological Investigations in Southern Idaho

The range of mobility demonstrated to solve challenges with the distribution of resources is one of the defining traits of foraging groups. Prior research on the Eastern Snake River Plain (ESRP) has investigated whether climatic variations may have influenced precontact forager mobility. Preliminary research on obsidian conveyance in the region suggests that land use patterns were already adjusting due to the onset of xeric conditions during the early Holocene. However, there appears to be a substantial expansion in mobility at the early Holocene/middle Holocene transition, as indicated by the spatial distribution of Northern Side-notched points. Using the available archaeological data in an eight-million-acre study area, I contrast the spatial distribution and obsidian source use between EH projectile points and Northern Side-notched points to test the hypothesis that the pace and extent of forager mobility were conditioned by environmentally mediated patch quality and abundance.

Fisher, Jacob (California State University Sacramento)

Wolfe, Allison (Boise State University)

Ellis, George (California State University Sacramento)

The Case of the Conspicuously-Absent Greater-Sage Grouse

Symposium 8: Exploring the Intersections of Human Ecology and Culture History in the Great Basin

Many archaeologists use optimal foraging model expectations when interpreting human-derived faunal assemblages. If prey choice decisions are, in part, related to the abundance of preferable resources, then the abundance of such resources in fossil assemblages reflect their local abundances on the landscape. One corollary is that the abundance of lower-ranked resources in archaeological assemblages are dependent on the abundance of high-ranked resources on the landscape, rather than their own, and thus the relative abundance of lower-ranked resources cannot be used to reconstruct their prehistoric biogeographies. Here, we report on the case of the greater sage-grouse (*Centrocercus urophasianus*) in the White Mountains, California. Past research in behavioral ecology lends support that sage-grouse would have been comparable in prey ranking to marmots and jackrabbits, and as such, they are expected to have been taken on encounter when economies intensified during the late Holocene. Yet no remains were recovered from alpine zone archaeological sites, despite the fact that the species is present in the area today. This conspicuous absence may be a result of: incorrect foraging expectations for sage-grouse, the environment was less favorable to the species in the past, or taphonomic biases resulted in selective destruction of such avian remains. We turn to the mixed paleontological-archaeological assemblage of Crooked Creek Cave at the alpine-subalpine interface to test these alternative explanations. Preliminary data

suggest that greater sage-grouse were present and exploited by other predators in the area but not pursued by human foragers for reasons to be further explored.

Foster, Jenna (University of Utah)

Boomgarden, Shannon (University of Utah)

Farrell, Ian (University of Utah)

Stream Advantages for Irrigation in Range Creek Canyon

Symposium 6: Recent Research in Fremont Studies

The Fremont occupation of Range Creek Canyon shows archaeological evidence of a heavy reliance on maize farming. Evidence includes numerous corn cobs and food storage sites. Additional evidence includes maize starch from grinding tools and excavated features and isotopic evidence of maize from sediment cores taken from buried farm fields. Range Creek is a perennial stream with a watershed of 145 sq miles. The creek relies mainly on snowpack runoff, springs, groundwater, and the confluence of side canyons lining the creek that contribute to the surface flow. Our maize farming experiments show that the Fremont would have relied on surface irrigation for productive maize farming. Due to drought cycles, sections of Range Creek periodically run dry. Over the last 5 years, we have documented creek sections that continue to flow even during the drought as well as pinch points along the creek that would have benefitted irrigation farmers. We suspect Fremont farmers would have utilized these spots along Range Creek, recognizing 1) where the creek would not run dry due to drought, 2) where the ground water levels should be higher, and 3) where creek water would flow faster into irrigation ditches due to gradient changes at pinch points. Considering the higher suitability of these locations for irrigation farming, we measure the density and proximity of residential sites relative to these highly suitable farming locations to evaluate whether the Fremont took advantage of the irrigation benefits.

Foster, Jenna (University of Utah)

See **Boomgarden, Shannon**

See **Farrell, Ian**

Frandsen, Kristina (Museum of Idaho)

Henrikson, L. Suzann (Idaho National Laboratory)

The Owl Cave Bison Bone Bed: Evidence of an Early Holocene Mass Kill

Symposium 1: From Channel Flakes to Bison Jumps: Current Archaeological Investigations in Southern Idaho

Previously published research on Owl Cave focused on the Pleistocene mammoth remains found in the deepest layers of the cave, glossing over the dense bison bone bed in Layer 16. Since the collection was moved to the Museum of Idaho in 2018, it is actively being re-catalogued, rehoused, and analyzed. Although the bone bed was initially suspected of being a

marrow processing locality, the large number of complete long bones in the assemblage and the distribution of cutmarks do not support this hypothesis. Instead, the taphonomic signatures appear to resemble “gourmet” butchering patterns similar to terminal Pleistocene/early Holocene sites on the Great Plains. We are currently examining the horizontal and vertical distribution of cutmarks, percussion breakage, and green bone fractures represented in Layer 16 using a newly developed database. Although there are still many bones to be catalogued and examined, the current evidence suggests that over 100 bison were involved in a single mass kill event on the Eastern Snake River Plain during the early Holocene.

Freund, Kyle (Far Western Anthropological Research Group)

Duke, Daron (Far Western Anthropological Research Group)

DeGraffenried, Jennifer (U.S. Army Dugway Proving Ground)

Nelson, Nate (U.S. Army Dugway Proving Ground)

Young, D. Craig (Far Western Anthropological Research Group)

A Post-Clovis Fluted Point and Crescent Component on the Distal Old River Bed Delta, Utah

Symposium 3: Tracking the Human Landscape of the Old River Bed Delta at the Pleistocene-Holocene Transition

This presentation contextualizes archaeological sites with fluted points and crescents on the distal Old River Bed (ORB) delta in western Utah. A key attribute of this component is that it has a radiocarbon-established early limiting date of ca. ~12,700 cal BP, providing the first clear post-Clovis case in the Great Basin. The region is better known for its Western Stemmed component, but here we provide an up-to-date database of known fluted points and associated assemblages from the ORB delta and contextualize it in relation to fluted point and crescent morphology and distribution. We also discuss the variability among “Western Fluted” forms and document the prevalence of various raw material types and present lithic sourcing results that help to document toolstone procurement ranges.

Freund, Kyle (Far Western Anthropological Research Group)

See **Duke, Daron**

Gavin, Daniel (University of Oregon)

See **Saban, Chantal**

Gonzales, Janice (Timbisha Shoshone Tribe)

See **Hill, Amanda**

Greenwald, Alexandra (University of Utah)

Niclou, Alexandra (Pennington Biomedical Research Center)

Burns, Gregory (National Park Service)

Kievman, Hayley (University of Utah)

Baka, Abby (University of Utah)

Ocobock, Cara (University of Notre Dame)

Cradle Technology and Maternal Foraging Energetics

Symposium 8: Exploring the Intersections of Human Ecology and Culture History in the Great Basin

Indigenous North Americans, including pre-Numic and Numic occupants of the Great Basin, invented and use(d) basketry cradles or cradleboards to transport infants during maternal activities. Energy expenditures and return rates of mothers foraging with infants using carrying technology is understudied but an important consideration among groups relying on caloric contributions from women. We replicate foraging conditions representative of precolonial plant exploitation (*Quercus gambelii*) and compare the energetic costs of acorn foraging in females (n=6, ages: 21-37 years) under three infant-carrying conditions. We measured activity through accelerometry and metabolic rate (Kcal/h) through indirect calorimetry of foraging “unloaded,” and carrying a 10lbs load in a Hupa cradle and in a sling. Average energy expenditure foraging unloaded was 194kcal in a 1-hour bout, 197kcal with cradle technology, and 186 with sling technology. Average caloric value of foraged acorns was highest for unloaded bouts (11,066kcal), followed by cradle-carrying bouts (10,616kcal) and sling-carrying bouts (9,446kcal). While cradle-carrying resulted in greater caloric expenditures compared to foraging unloaded or with a sling, foragers using cradles experienced higher return rates and greater foraging efficiency than foragers carrying infants in a sling. Cradles provide greater freedom of movement than sling-carrying and is/was an important technology in economies relying primarily on women’s labor to gather and process resources. Our return rate data, along with early ethnographic accounts, suggest *Quercus gambelii* is underappreciated by contemporary archaeologists as an important food resource in the eastern Great Basin and Colorado Plateau.

Greenwald, Alexandra (University of Utah)

See **Kievman, Hayley**

Guerrero, Isabelle (University of Nevada Reno)

The Place Where Antelope Go to Dream: Collaborative and Historical Archaeology at Tunna'

Nosi' Kaiva' Gwaa

Plenary Session: Beyond Boundaries

Tunna' Nosi' Kaiva' Gwaa (TNKG) is a large multi-component site complex that is situated within pinyon-juniper woodlands at the edge of the western Great Basin, in the northern Bodie Hills,

and within a region known by the *Numu* (Northern Paiute) toponym, *Tuvugatudu*. The pre-contact components at TNKG include game drives, hunting blinds, rock rings, lithic materials, and rock art dating from approximately 4,000 BP to the post-contact period. TNKG also includes recent historical materials including evidence of charcoal production and wood cutting likely connected to the historic mining towns of Bodie, California, and Aurora and Del Monte, Nevada. While there are thorough studies on the pre-contact components of the TNKG site, the more recent historic components require further study. This paper showcases the preliminary results of dissertation research being completed at TNKG. This dissertation aims to understand how the landscape of the TNKG mesa was transformed from the mid-19th to early 20th centuries and how Native communities persisted in the region during the historic period despite encroachment by settlers and settler industries. In order to pursue these avenues of investigation, this project utilizes a multi-pronged approach that incorporates archaeological investigation, archival research, oral history research, and collaborative work with Tribes, federal agencies, and private landowners. This research will demonstrate how to bring academic science and Indigenous knowledges together in order to successfully produce a collaborative project that accomplishes archaeological research while also centering the concerns and goals of local Native communities.

Hale, Micah (Dudek)

Barton, Loukas (Dudek)

The Traditional Cultural Landscape Type of Significance: A Case Study from the Mojave Desert
Symposium 8: Exploring the Intersections of Human Ecology and Culture History in the Great Basin

We describe a recent application of Traditional Cultural Landscapes (TCL) as a type of significance conveyed under Criterion A (important events in prehistory/history) of Section 106 of the National Historic Preservation Act (NHPA). While there has been much discussion among federal agencies and their consulting partners about Native American landscapes, there are few applications that logically link the concept to Section 106 significance criteria. In this example, we operationalize the TCL as a “type of significance rather than a property type,” following guidance from the Advisory Council on Historic Preservation (ACHP, 2012). Specifically, by considering archaeological evidence and information gained through tribal consultation, we identified several archaeological districts in the Interstate 15 corridor of the Mojave Desert eligible for NRHP listing under Criterion D. The archaeological manifestation of these districts were also found to convey a TCL type of significance under Criterion A. Tangible materials across the landscape attest to a history of activity that includes daily demands of sustenance, shelter, travel, communication, teaching, and learning among individuals, families, and communities, both human and non-human; the landscape also contains a record of change in knowledge and understanding of how these entities interact, come together, and move apart. The intangible, though no less relevant to those who live there, are the combinations of elements that shape the identities of people today. The nexus of the two – the tangible and the

intangible – are where archaeological and Tribal values coincide to convey the TCL type of significance.

Hanrahan, Katie (Far Western Anthropological Research Group)

Distribution and Chronology of Schist Millingstones in Owens Valley

General Session 3: Traditional Foodways and Technology

To assess how, why, and when thin portable schist millingstones were used in Owens Valley (*Payahūūnadū*) data for 1,432 schist artifacts from 156 sites and isolates were compiled into a database and analyzed. Results support previous interpretations that schist millingstones were portable, curated, and associated with residential sites and features. Results of this research do not support the argument that schist millingstones are temporally diagnostic of the Marana Period, but that use of schist millingstones culminated during the late Haiwee and Marana periods. These findings are integrated to identify implications for Owens Valley prehistory, and suggestions for future research and understanding of ground stone technology and plant use in the eastern Sierra.

Hanrahan, Katie (Far Western Anthropological Research Group)

See **Hildebrandt, Bill**

Hardin, Keith (HRA Inc.)

See **Roberts, Heidi**

Harold, Laura (Far Western Anthropological Research Group)

King, Jay (Far Western Anthropological Research Group)

Chronological Data from the Olancha-Cartago Project

Symposium 2: A 6,500 Year Record of Indigenous Occupation and Environmental Change at Patsiata (Owens Lake)

The Olancha-Cartago investigations have produced a wide variety of chronological data, including over 90 radiocarbon dates, over 1100 source-specific obsidian hydration readings, and hundreds of temporally diagnostic artifacts, together contributing to the definition of over 40 distinct spatiotemporal components. Because of the abundance of dateable material at the project sites, these components are based primarily on radiocarbon results, with other indicators generally taking a secondary role. This high level of temporal control allows us to make some empirical observations about the behavior of obsidian hydration in various well-dated subsurface settings, and to make some new observations about the temporal significance of certain artifact types.

Hart, Isaac (University of Utah)

See **DeGraffenried, Jennifer**

Harvey, David (Chronicle Heritage)

Finley, Judson (Utah State University)

Robinson, Erick (Native Environment Solutions)

Herrmann, Edward (Indiana University)

The Age and Function of Slab-Lined Stone Features Associated with a Fremont Foraging-Farming Landscape in Cub Creek, Dinosaur National Monument, Northeastern Utah

Poster Session 1: Recent Research in Great Basin Anthropology I

Utah's Fremont archaeological complex is well-known as a transitional foraging-farming society from AD 300–1300. Individual Fremont systems included a set of bundled agricultural niches with associated foraging ranges. In a recent survey above Cub Creek in Dinosaur National Monument, we discovered many slab-lined stone features in an upland area not well-suited for agriculture. This study presents the results of AMS radiocarbon dating and macrobotanical analyses to determine the age and function of the features. An initial AMS radiocarbon age indicates the features date to the early Fremont period prior to the intensification of a maize agriculture and the formation of a settled pithouse community in Cub Creek from AD 840–1080. These open-air slab-lined features appear to have functioned as earth ovens where large volumes of plant foods could be prepared for immediate consumption or transport to the Cub Creek lowlands. These data complement the well-documented local foraging-farming transition where a mixed foraging-farming economy was a strategy for offsetting the effects of variable precipitation and provide a comparative framework for the function of slab-lined storage features common in the region from the Archaic through Fremont periods.

Haskett, Taylor (Idaho National Laboratory)

Sourcing the Obsidian Haskett Projectile Points recovered from the Haskett Type Site (10PR37) in Lake Channel, Idaho

Symposium 1: From Channel Flakes to Bison Jumps: Current Archaeological Investigations in Southern Idaho

Ten Haskett-style obsidian projectile points from the Haskett Family's collection associated with 10PR37, including specimens assigned as Butler's Type 1 and Type 2, were recently analyzed via X-ray Fluorescence (XRF) spectroscopy at the Idaho National Laboratory (INL) Cultural Resource Management Office (CRMO). These efforts were performed to identify and assign geologic sources to a significant assemblage of projectile points that have not been subjected to XRF before now. Results of the analysis will be integrated with other Haskett sourcing data from the Desert West to gain a better understanding of obsidian conveyance during the terminal Pleistocene and early Holocene, as well provide insights into ancestral Shoshone and Bannock lifeways and mobility.

Hencmann, David (Broadbent & Associates)

Pollock, Alain (Broadbent & Associates)

Living Artifacts: Culturally Modified Trees in the La Sal Mountains of Eastern Utah

General Session 2: The Archaeology of the Recent Past and Present

Culturally modified trees (CMTs) are a global resource, and vary widely in type, function, and meaning to the people who used them. While some types of CMTs, such as bound-prayer trees and arborglyphs, are easily recognized, others are commonly overlooked during field survey. This presentation focuses on the practice of harvesting inner tree bark as a food source, and how to recognize this activity archaeologically. Certain trees in the American West, including several types of pine, contain an inner layer of nutrient-rich cambium. People can access this by peeling the outer layer of bark from the tree and harvesting the cambium underneath. Oral traditions of the Ute and Diné people demonstrate their awareness of this resource and how to utilize it during times of food scarcity, particularly during the period of contact with Euro-American settlers. Trees utilized in this way remain important to Native communities to the present day. In 2023, Broadbent recorded examples of these types of CMTs in the La Sal Mountains of Eastern Utah. We present examples of this unique resource type, the distinctive characteristics of the tree scars that indicate cambium harvesting, and how to distinguish these CMTs from natural or animal activity.

Henrikson, L. Suzann (Idaho National Laboratory)

Duke, Daron (Far Western Anthropological Research Group)

Putting the Owl Cave Mammoth Hunters to Bed: New Dates from Layer 18

Symposium 1: From Channel Flakes to Bison Jumps: Current Archaeological Investigations in Southern Idaho

Since the 1971 discovery of green-fractured mammoth bone in Owl Cave, investigations have primarily focused on the tenuous association between these remains and Folsom points also recovered from the lowest levels of the cave. With Museum of Idaho's acquisition of the Owl Cave collection, researchers have now gained full access to the faunal assemblage from Layer 18, including large scrap bone bags containing previously unidentified bison remains. AMS assays generated from a sample of these specimens fall well within the accepted age range of Folsom technology. A formal analysis of the Layer 18 bison assemblage is currently underway. However, these results clearly indicate that the Folsom occupation in Owl Cave is not coeval with the mammoth remains recovered from the same stratum. Instead, Owl Cave potentially represents the westernmost documented Folsom bison kill/processing site in North America.

Henrikson, L. Suzann (Idaho National Laboratory)

See **Duke, Daron**

See **Frandsen, Kristina**

Herring, Erin (University of Oregon)

See **Saban, Chantal**

Herrmann, Edward (Indiana University)

See **Harvey, David**

Hildebrandt, Bill (Far Western Anthropological Research Group)

Summary and Discussion

Symposium 2: A 6,500 Year Record of Indigenous Occupation and Environmental Change at Patsiata (Owens Lake)

A summary of the Olancha-Cartago Project.

Hildebrandt, Bill (Far Western Anthropological Research Group)

Hanrahan, Katie (Far Western Anthropological Research Group)

Johnson, Lucas (Far Western Anthropological Research Group)

Changing Adaptations along the Shores of Owens Lake: Artifact Assemblages from the Olancha-Cartago Project

Symposium 2: A 6,500 Year Record of Indigenous Occupation and Environmental Change at Patsiata (Owens Lake)

Analysis of flaked and ground stone artifact assemblages from over 40 single component areas reveals several important economic changes spanning the last 6700 years of time. Flaked stone assemblages show steady increases in the production of obsidian bifaces (for both local use and exchange) that reached a zenith between 1800 and 1100 cal BP -- an interval also characterized by a peak in settlement stability. After 1100 cal BP, the settlement and biface production systems both collapsed, the former due to the Medieval Climatic Anomaly and the latter in part due to the introduction of the bow and arrow. Ground stone tools and bedrock milling facilities became prominent after the collapse, and continued into the contact period where smaller family bands focused on the use of a variety of small seeded plants.

Hildebrandt, Bill (Far Western Anthropological Research Group)

See **McGuire, Kelly**

Hill, Amanda (Far Western Anthropological Research Group)

Wall, Bridget (Far Western Anthropological Research Group)

Bancroft, Kathy (Lone Pine Paiute Shoshone Tribe)

Fillingame, Esther (Lone Pine Paiute Shoshone Tribe)

Gonzales, Janice (Timbisha Shoshone Tribe)

Joseph, Jeremiah (Lone Pine Paiute Shoshone Tribe)

Tsosie, Seth (Dine Nation)

Challenges and Opportunities for Preserving Indigenous Landscapes in the Face of Highway Construction

Symposium 2: A 6,500 Year Record of Indigenous Occupation and Environmental Change at Patsiata (Owens Lake)

Collaboration with descendant communities is a topic at the forefront of archaeology, but realizing true collaboration in our field efforts can be difficult. The Olancho-Cartago highway project is a complex endeavor involving hundreds of archaeological deposits, boulder milling features, rock art, and dense subsurface deposits. During construction monitoring efforts, we have had the opportunity to build a sturdy foundation for a collaborative relationship with monitors and representatives of the Lone Pine Paiute-Shoshone Reservation and Timbisha Shoshone. These relationships, borne out of mutual trust and respect along with continued communication, have proven crucial to the project. Working together, archaeologists and Tribal partners have been able to come up with protective construction measures, strategies for avoidance, and ways to minimize impacts to archaeological sites. There are two sides to this collaborative effort, though, and while archaeologists may see it as a success, the Tribal perspective is vital to our continued shared efforts. This paper presents some examples of collaboration on the project as well as the thoughts of several Tribal representatives on how archaeologists can approach, develop, and improve these relationships.

Hill, Eden (Max Planck Institute for Geoanthropology)

See **Antonosyan, Mariya**

Hill, Matthew, Jr. (University of Iowa)

See **Arkush, Brooke**

Hlebechuk, Aiden (University of Oregon)

McDonough, Katelyn (University of Oregon)

Rosencrance, Richard (University of Nevada Reno)

Cultural Chronology and Late Holocene Features at Connley Cave 6, Oregon

Poster Session 2: Recent Research in Great Basin Anthropology II

This project investigates late Holocene occupations and cultural chronology in the northern Great Basin through collections-based research of the Connley Caves archaeological site in the Fort Rock Basin. Connley Caves is one of the oldest sites in Oregon and was first excavated in the 1960s by Stephen Bedwell who proposed that people were using stemmed projectile point technology there more than 13,000 years ago. Recent University of Oregon investigations at the Connley Caves have focused on late Pleistocene (>11,700 years ago) deposits, while less is currently known about the site's Holocene chronology due to Bedwell's biased excavation and looters. This gap is addressed through radiocarbon dating hearth charcoal and analyzing tool assemblages in the legacy collection curated at the University of Oregon Museum of Natural and Cultural History in Eugene, Oregon. The results of this research confirm that a series of occupations have occurred in Cave 6 over the last 2,000 years and reveal technological changes over the last 10,000 years that are similar to other datasets in the northern Great Basin. This new information expands our knowledge of human activity at the Connley Caves during the Holocene, will assist in ongoing studies on changes in settlement and subsistence over the last 13,000 years, and reaffirms the importance of collections-based research in answering questions about technological and cultural change in the northern Great Basin.

Hockett, Bryan (Bureau of Land Management)

The Epistemology of Great Basin Projectile Point Typology

General Session 3: Traditional Foodways and Technology

The current practice of typing Great Basin projectile points can be improved by attending to five primary epistemological factors: (1) metrics are important, but they are not everything; (2) qualitative descriptions add important value to typing points; (3) all metric and qualitative characteristics overlap to some degree between our designated types; (4) children learning the skill of flintknapping; raw material type, size, and quality; and reworking of broken points may be important influencers of an individual point's final form; (5) current point typing exercises will be compromised without the understanding of five new types designated within the last 2-3 years; and (6) all corner-notched dart points in the Great Basin are not Elko Series. Many of our interpretations about past human societies in the Great Basin begin with typing projectile points from individual sites and their placement into the chronological periods and phases this exercise inevitably leads to. Projectile point typology in the Great Basin remains as consequential today as it has ever been.

Hockett, Bryan (Bureau of Land Management)

See **Dillingham, Eric**

Hudson, Adam (U.S. Geological Survey)

Emery-Wetherell, Meaghan (University of Arizona)

Lubinski, Patrick (Central Washington University)

Butler, Virginia (Portland State University)

McDonough, Katelyn (University of Oregon)

Rosencrance, Richard (University of Nevada Reno)

Pluvial Lake Level Records of the Northwest Great Basin since the Last Glacial Maximum: What We Knew Then and Now, and What We Could Know Better

Symposium 7: Multi-Disciplinary Investigation of Cultural and Ecological Assemblages at the Paisley Caves in the Chewaucan Basin, South-Central Oregon

Paleoshorelines are ubiquitous features of the closed watersheds of the Great Basin, which record the presence of vast lakes during past wet climate conditions. Geochronologic lake level histories suggest timing of maximum wetness was diachronous across the Great Basin during the last deglaciation. In particular, recent results for lake systems of northern California and Oregon indicate expansive lakes persisted up to millennia later than those further to the south. These pluvial hydrologic conditions, subsequent drying of lakes and wetlands, and the changing regional climate that supported them, affected the lifeways of the earliest inhabitants of the northern Great Basin. Still, existing evidence from geological and archaeological sources provide a conflicting picture of the timing of hydrologic change. Interpretations based on scarce data have inferred peak lake levels coincident with the last glacial maximum, or with cold periods of the last deglaciation. Recently developed lake histories based on radiocarbon dating of lake deposits, in contrast, indicate deep lake conditions may have occurred during Heinrich Stadial 1, but also during the warm Bolling/Allerod. They also suggest lakes were greatly reduced in size by the beginning of Younger Dryas time. Even so, data gaps prevent a continuous picture of lake level history, which hampers the ability to constrain the landscape which was important to early Great Basin inhabitants. Here we review constraints on lake levels since the Last Glacial Maximum, focused on the Chewaucan and Fort Rock basins of southern Oregon, nearby to the Paisley Caves.

Hudson, Adam (U.S. Geological Survey)

See **Lubinski, Patrick**

Jampolsky, Marlene (University of Oregon)

See **Lane, Brian**

Jarquin, Juan Carlos (University of Nevada Reno)

On the Edge: A Case Study of Late Holocene Hunter-Gatherer Mobility and Intensification at the Poison Creek Rim Site, Abert Rim, OR

Symposium 8: Exploring the Intersections of Human Ecology and Culture History in the Great Basin

This study focuses on the archaeological record of the Lake Abert-Chewaucan region during the Late Holocene, revealing crucial insights into hunter-gatherer adaptation to upland environments. Focusing on the Abert Rim, in south-central Oregon, the reported research establishes a comprehensive framework for understanding the strategies employed by multifamily hunter-gatherer groups to occupy and utilize this landscape. An in-depth examination of artifacts excavated from two house rings at the Poison Creek Rim Site presents a compelling case for Late Holocene residential use and economic intensification in the Rim country. Employing geospatial analyses, lithic analyses, radiocarbon dating, and obsidian sourcing, the study elucidates how hunter-gatherers utilized the high-elevation environment of the Abert Rim during the Late Prehistoric period.

Jazwa, Christopher (University of Nevada Reno)

See **Rosencrance, Richard**

Jenkins, Dennis (University of Oregon)

Opening Remarks

Plenary Session: Beyond Boundaries

Dr. Jenkins welcomes GBAC attendees and shares important information.

Jenkins, Dennis (University of Oregon)

Discussion

Symposium 4: In His Footsteps: Tom Connolly's Legacy in Oregon Archaeology

Dr. Jenkins discusses Tom Connolly's ongoing research and legacy.

Jenkins, Dennis (University of Oregon)

Radiocarbon Dating the Paisley Caves: Artifacts, Features, Human Coprolites/Hair, Paleontology, and Geochronology

Symposium 7: Multi-Disciplinary Investigation of Cultural and Ecological Assemblages at the Paisley Caves in the Chewaucan Basin, South-Central Oregon

There are currently 353 radiocarbon dates from the Paisley Caves making it one of the most extensively dated archaeological sites in the Americas. The Paisley Caves database includes 118 artifacts and cultural feature dates ranging from modern times to 14,485 cal BP. There are 85 dates obtained from human coprolites and hair which range in age from 1240 to 14,405 cal BP.

Paleontological remains, Camelid, Equus, Felid, and Pika, provide 39 dates ranging from 12,565 to 15,045 cal BP. Natural materials dated as geochronological controls include 111 dates ranging from 155 years to 15,945 cal BP. Cultural remains and paleontological specimens overlap in age by ~1900 years. This paper discusses how the samples have been selected, handled, and employed to understand the age and sequence of human occupations at the site.

Jenkins, Dennis (University of Oregon)

Connolly, Thomas (University of Oregon)

Rosencrance, Richard (University of Nevada, Reno)

Smith, Geoffrey (University of Nevada, Reno)

McDonough, Katelyn (University of Oregon)

Endzweig, Pamela (University of Oregon)

Radiocarbon Dating the Cultural Chronology of the Northern Great Basin

Symposium 9: Tradition, Teaching, and Technology: Papers in Honor of Dan Stueber

The University of Oregon's Northern Great Basin Prehistory Project (NGBPP) has been systematically radiocarbon dating artifacts and cultural features over the last 34 years (1989-2023). Beginning in 2015, the University of Nevada, Reno's Great Basin Paleoindian Research Unit began intensive collaborations with the UO to investigate Fort Rock, Connley, and Cougar Mountain caves. The NGBPP database now contains 824 radiocarbon dates representing cultural features, artifacts, and human coprolites encountered at 22 sheltered and 29 open sites from all over the NGB. Of these, 590 were obtained from 25 sites, including the Fort Rock, Cougar Mountain, Paisley, and Connley caves, by the UO/UNR consortium. Recently, 220 of these dates were obtained for all perishable artifacts in the Cougar Mountain Cave collection made by John Cowles in 1958, most of which is now on display at the Favell Museum in Klamath Falls, Oregon. In this paper, we present a cultural chronology for the Northern Great Basin based on the massive NGBPP ¹⁴C database.

Jenkins, Dennis (University of Oregon)

See **Antonosyan, Mariya**

See **Lubinski, Patrick**

See **Saban, Chantel**

Jepsen, Jacob (WSP USA)

Beneath the Surface: Geophysical Investigations of Fremont Sites in Southern Utah Valley

Symposium 6: Recent Research in Fremont Studies

The identification of Fremont habitation sites in Utah Valley poses a distinctive challenge for archaeologists due to their diverse and often obscured contexts. Pit houses and other structures, essential to understanding this prehistoric culture, are frequently situated in

plowed fields or disrupted environments. While geophysical technologies have proved invaluable worldwide for subsurface archaeological surveys, their application in Fremont archaeology remains underexplored. This paper reports on the employment of ground-penetrating radar (GPR) and magnetic gradiometer geophysical surveys at three prominent Fremont habitation sites in the southern Utah Valley: the Wolf Village, Wolf Mound, and Snow Farm sites. The preliminary geophysical surveys and later ground-truthing of various geophysical anomalies reveal the effectiveness of these methods in identifying where architectural or other cultural features exist below the surface.

Jerrems, Jerry (Boise State University)

Pleistocene Horses in the Archaeological Record: A Focus on the Great Basin

General Session 3: Traditional Foodways and Technology

There is a long history of horse exploitation throughout Eurasia; for instance, the Boxgrove site, England (500 kya), the Schöningen site, Germany (350 kya), and numerous Late Pleistocene sites across Eurasia (from the Aurignacian through the Magdalenian, 45-15 kya). The evidence suggests that horses were only second in line of importance to reindeer as an animal food source. Horses proliferated in the Americas during the Pleistocene but vanished from North America 13,100 years ago. There are many instances where horse remains create background noise in the Great Basin but with only minimal evidence of human intervention. I review evidence from several sites in the northwestern Great Basin, particularly Fishbone Cave on the shore of ancient Lake Lahontan, for the importance of horses to Paleoindians.

Johansson, Lindsay (Idaho State Historical Society)

Fremont Architecture: Evidence for Regional Consistency

Symposium 6: Recent Research in Fremont Studies

During the Fremont period (ca. AD 300 to 1400), individuals in the eastern Great Basin aggregated into larger and more permanent settlements, and these settlements clustered together across the landscape. Within many settlement clusters, sites exist containing structures that, on the surface, appear both architecturally and functionally distinct from typical residences. To date, analysis of these unusual structures has been conducted utilizing information from a small sample of sites that was not systematically collected; this project represents an opportunity to assess conclusions regarding Fremont architecture utilizing a wholistic and systematically collected database of information regarding Fremont architecture. I argue that while Fremont architectural characteristics vary, the use (or function) of Fremont structures is shared across the region. Within Fremont communities, activities taking place either in or in association with unusual structures (central structures and oversized pit structures) as well as the architecture of some homes (surface houses) suggest the presence of leaders, ritual practitioners, and other individuals of elevated importance within the community.

Johnson, Lucas (Far Western Anthropological Research Group)

Duke, Daron (Far Western Anthropological Research Group)

DeGraffenried, Jennifer (U.S. Army Dugway Proving Ground)

Collaborative X-ray Fluorescence Sourcing and Changes in Lithic Resource Use Through Time on the Old River Bed Delta

Symposium 3: Tracking the Human Landscape of the Old River Bed Delta at the Pleistocene-Holocene Transition

Lithic provenance studies using X-ray fluorescence (XRF) spectrometry are a well-established component of archaeological research. However, due to issues related to inter-instrumental variability, most of these studies are undertaken using a single XRF machine, which imposes limitations on the amount of data that is collected in a set period of time. While collaborating with multiple XRF instruments enables larger than normal datasets to be gathered by multiple analysts, embarking on a big-data collaboration of this sort requires that certain protocols be followed to control for and understand inter-instrument variation prior to source assignment and anthropological interpretation. Fundamental knowledge of XRF physics, measuring accuracy of calibration sets, geochemical source library samples, and certified reference standards is a prerequisite. Here, we present the results of a regional study using five Bruker Tracer instruments to analyze over 9,000 obsidian and fine-grained volcanic Pleistocene-Early Holocene artifacts from western Utah's Old River Bed delta.

Johnson, Lucas (Far Western Anthropological Research Group)

See **Hildebrandt, Bill**

See **Jonassen, Alexandra**

Jonassen, Alexandra (California State University Fullerton)

Johnson, Lucas (Far Western Anthropological Research Group)

Knell, Edward (California State University Fullerton)

Schroeder, David (Chronicle Heritage)

Geochemical Analysis of Felsite Quarries at Pluvial Lake Mojave

General Session 1: Interpreting Toolstone Conveyance, Site Location, and Land Use

This study geochemically documents the conveyance of felsite from multiple quarries in the Soda Mountains adjacent to pluvial Lake Mojave, California to the many archaeological sites along its terminal Pleistocene-Early Holocene (TP/EH) shorelines. Prior research suggests Paleoindians conveyed tool stone to Lake Mojave from the Coso Volcanic Field and Goldstone dacite outcrops to the northwest and Shoshone Mountain obsidian to the north, but little is known of the geochemical signatures or conveyance of the good quality, locally occurring felsite. We propose that a geochemically derived sourcing model using felsite artifacts from Lake Mojave's TP/EH shoreline sites will improve our understanding of local procurement

strategies around Lake Mojave and, more broadly, across the region. To address this, we collected geologic samples from eight distinct felsite quarries and analyzed them with a portable X-ray fluorescence instrument. Six quarries are in the Soda Mountains on the western edge of Lake Mojave (Soda Mountains West), another in the Soda Mountains to the north (Soda Mountains North), and one on the eastern shoreline of Lake Mojave. These three collection areas have geochemically distinct signatures, including some ability to identify artifacts to specific sources in Soda Mountains West, and together can be used to geochemically distinguish locally procured felsite artifacts at shoreline sites around Lake Mojave.

Jones, Kara (University of Nevada Las Vegas)

Fishing Features in the Mojave Desert and Beyond: Implications at Ivanpah Dry Lake, NV

General Session 3: Traditional Foodways and Technology

The Mojave Desert is a host of many now desiccated Holocene Lakes. Fishing features in the at these lakes are rare but do occur. Due to the paucity of available sites for a comparative study, the study area has been expanded to encompass the Basin and Range province, covering areas from the Snake River Plain of southern Idaho to the Salton Sink in southern California and Northern Baja California. Four main lakes have been targeted for the purpose of this study, as well as some smaller case studies. Those lakes include Silver Lake/Soda Lake (these lakes are grouped because they have coalesced in prehistory into Holocene Lake Mojave), Cronese Lakes (East and West), Lake Cahuilla (now the Salton Sea), and Lake Ivanpah (now known as Ivanpah Dry Lake). Recent investigations at Ivanpah Dry Lake have revealed a complex of fishing features including fishing platforms and fishing circles, connecting this area to the fishing traditions seen throughout the region. This discovery increases the likelihood of similar finds in other understudied Holocene lakes in the area, specifically those known to host brine and fairy shrimp populations.

Joseph, Jeremiah (Lone Pine Paiute Shoshone Tribe)

See **Hill, Amanda**

Julison, Julie (Wayne State University)

The Prevalence of Entomophagy in the Americas: A Meta-analysis of Human Coprolites

General Session 3: Traditional Foodways and Technology

Ethnography demonstrates entomophagy to be a relatively common practice around the world. Despite such prevalence, insect foods are discussed only occasionally in the archaeological literature, presumably due to Western biases, which may acknowledge the presence of edible insects but refrains from considering them a viable food resource. To evaluate the extent to which past Indigenous communities of the Americas consumed insects, we conduct a literature-based meta-analysis of human coprolites. The analysis identifies over 9,150 specimens from 52 archaeological sites, comprising 57 distinct assemblages that span up to 14 millennia. Thirty-two percent of the assemblages contain one or more human coprolites

with intentionally consumed edible insects, indicating that almost a third of past subsistence economies of the Americas incorporated insects into their diets. Four percent of all coprolites contain edible insects, suggesting that the average diet included four percent of insects. These findings reveal that insects were a common part of early subsistence economies in the Americas and were unlikely to have been the starvation food that many Western scholars often assume.

Kallenbach, Elizabeth (University of Oregon)

Testing the Feasibility of Fiber Identification for Fine Cordage Artifacts from the Paisley Caves, Oregon

Symposium 5: Beyond Stones and Bones: Current Research on Fiber Artifacts in the Great Basin

This study tests the feasibility of previously established fiber identification methods, including polarized light microscopy and energy dispersive X-ray spectroscopy, and their suitability for analysis of archaeological cordage from the Paisley Caves. The methods were applied to herbarium control samples for four key plants: dogbane, stinging nettle, milkweed, and blue flax. These plants are known historically and archaeologically as the primary sources of fibers used in fine cord-making throughout the Northern Great Basin. Results from the control study were then applied to fine cordage from the Paisley Caves. The Paisley Caves in eastern Oregon have one of the largest and most continuous assemblages of fine cordage made from plants, spanning the last 10,000 years. Results of fiber identification for archaeological cordage reveal continuous use of stinging nettle and dogbane throughout the Holocene, with flax and milkweed occurring within the last 3000 years.

Kallenbach, Elizabeth (University of Oregon)

Textiles from the Paisley Caves: 14,000 Years of Plant Selection in the Northern Great Basin

Symposium 4: In His Footsteps: Tom Connolly's Legacy in Oregon Archaeology

Preservation of perishable artifacts from dry cave sites throughout the Great Basin has driven decades of research in textiles. Tom Connolly's contributions to fiber-based studies have refined regional cultural chronologies, addressed population movements, set standards for technical analysis, established the ongoing textile radiocarbon dating program at the University of Oregon, and laid the foundation for new inquiry and analysis. Inspired by Tom's legacy, this project identifies plant fibers used in the construction of textiles from the Paisley Caves, and together with radiocarbon dating, contributes new information about landscape use within the Northern Great Basin throughout the terminal Pleistocene and Holocene. This research also provides long-term data on culturally significant native plants used in the manufacture of fiber textiles over the last 14,000 years.

Kallenbach, Elizabeth (University of Oregon)

See **Connolly, Thomas**

Kennedy, Jaime (University of Oregon)

Connolly, Thomas (University of Oregon)

The Fort Rock Sandal Pollen Project: New Paleoecological Data for the Fort Rock Basin
Symposium 4: In His Footsteps: Tom Connolly's Legacy in Oregon Archaeology

In 1965 Luther Cressman asked Jane Gray to conduct a pollen study on a sandal from Fort Rock Cave (35LK1). Although successful, this study was never published, and its results were limited to a brief mention in Bedwell and Cressman's paper on the Fort Rock Basin presented at the 1970 Great Basin Anthropological Conference. Building on Gray's 1960s analysis, University of Oregon researchers recently sampled mud adhering to five Fort Rock style sandals in the UO Museum of Natural and Cultural History collections to isolate and identify pollen grains. The analysis permitted the identification of local and regional flora growing near the cave around 9500 cal BP. Our paper presents the results of this study and proposes future research directions to expand knowledge about paleoenvironmental conditions in the northern Great Basin.

Kievman, Hayley (University of Utah)

Burns, Gregory (University of Utah)

Greenwald, Alexandra (University of Utah)

*Re-evaluating the Dietary Significance of Gambel Oak Acorns (*Quercus gambelii*) in the Great Basin, Colorado Plateau, and Southwest: Evidence from Experimental Foraging and Direct Bomb Calorimetry*

General Session 3: Traditional Foodways and Technology

Previously available estimates of caloric values and return rates of Gambel Oak (*Quercus gambelii*) were calculated using foraging returns from California acorn species during one, 23-minute foraging bout (Simms 1984). In this paper, we report foraging and caloric data from 18 hours of experimental Gambel Oak acorn foraging and direct bomb calorimetry, and explore the possible significance of Gambel Oak acorns as a resource in the Great Basin, Colorado Plateau, and Southwest. Results show that Gambel Oak acorns return a substantial amount of calories at 5711.12 kcal per hour foraging and were likely a significant resource for early- and middle Holocene hunter-gatherers and an important fallback resource for late Holocene maize agriculturalists in the region.

Kievman, Hayley (University of Utah)

See **Greenwald, Alexandra**

King, Jay (Far Western Anthropological Research Group)

An Introduction to the Archaeology and History of the Western Shore of Patsiata

Symposium 2: A 6,500 Year Record of Indigenous Occupation and Environmental Change at Patsiata (Owens Lake)

The western shore of Patsiata (Owens Lake) and the adjoining eastern slopes of the Sierra Nevada create a narrow natural corridor within which people have settled and traveled for thousands of years. The archaeological record of the area is accordingly dense, complex, and multi-layered. This presentation will summarize the archaeological and historical record of the area, as revealed by over 20 years of investigations in support of the Olancho-Cartago Four-lane project, and its interpretive potential and challenges.

King, Jay (Far Western Anthropological Research Group)

The Saline Valley Salt Tram: A Virtual Tour

General Session 2: The Archaeology of the Recent Past and Present

The Saline Valley Salt Tram was built in the early 20th century to transport salt from Saline Valley over the rugged Inyo Mountains to the eastern shore of Owens Lake. This National Register-listed engineering work remains largely intact, and is a well-known destination for backcountry travelers. But, formal documentation of the entire 13-mile tram route remains incomplete. This presentation discusses the results of a desktop mapping study of the tram, and includes an animated virtual tour.

King, Jay (Far Western Anthropological Research Group)

See **Harold, Laura**

Kingrey, Haden (Washington State University)

Brumbaugh, Laura (Washington State University)

Sobel, Sonya (Washington State University)

The Effects of Fermentation on Maize Starch Grains: An Experimental Archaeology Study to Identify Brewing Practices from Ceramic Vessel Residues

Poster Session 1: Recent Research in Great Basin Anthropology I

Archaeologists have used various methods to identify brewing in the archaeological record, including modern case studies, ceramic analysis, and stable isotope analysis. Researchers have recently used the identification of gelatinized rice starch grains on ceramic vessels in China as direct evidence for ancient fermentation. This raises the possibility of using starch grain analysis to identify the fermentation of other grains, such as maize (*Zea* sp.). Researchers in the Americas have used gelatinized starch residue as evidence for maize fermentation, but there have been few modern comparative studies that have utilized statistical analyses. Using a brewing recipe that relies entirely on maize, this experimental archaeology project identifies

the effects of fermentation on maize starch grains and suggests what features may be seen on the surfaces of archaeological ceramic fermentation vessels. Our results foster the identification of alcohol production by cultures that practice maize agriculture in the Great Basin and American Southwest, such as the Fremont and Ancestral Puebloan peoples.

Kitterman, Anya (Hill Air Force Base)

Parker, Ashley (Far Western Anthropological Research Group)

Partnering Today for Future Generations: Innovation Approaches to Preservation and Outreach
Symposium 3: Tracking the Human Landscape of the Old River Bed Delta at the Pleistocene-Holocene Transition

The joining together of traditional knowledge and scientific analysis is imperative to understand and explain significant cultural landscapes. Active engagement with the Indigenous population is critical at all levels, from assessing the landscape and its past use to site stewardship, including outreach and interpretation. This presentation will outline some of the proactive ways Hill AFB seeks to coordinate with its tribal partners on management, preservation, and public education of its unique resources.

Knell, Edward (California State University Fullerton)

Duke, Daron (Far Western Anthropological Research Group)

The Mojave Desert Has More Western Stemmed Tradition Point Types than Lake Mohave and Silver Lake

General Session 3: Traditional Foodways and Technology

Archaeologists recognize at least nine different Western Stemmed Tradition (WST) projectile point types in the Great Basin. Each of these types is widely used north of the Mojave Desert, but only the Lake Mohave and Silver Lake types are usually applied in the Mojave Desert. The Mojave Desert is where these types were first defined by the Campbells and associates in the 1930s. No new meaningful comparative analyses have been undertaken to assess whether the Lake Mohave and Silver Lake only pattern in the Mojave Desert remains valid. New results from flatbed scanning and typological analysis (using a working WST typology applicable to all Great Basin regions) of 200+ WST points from Mojave Desert military installations and curation facilities reveal more WST variability than has previously been appreciated. Recognizable WST point types in our sample include Haskett, Parman, and Bonneville. This variety of WST types in Mojave Desert assemblages generally mirrors other parts of the Great Basin. Recognizing this variability is a valuable first step towards correcting WST type assignments in the Mojave Desert, as well as improving Mojave Desert intraregional and interregional typological comparative analyses.

Knell, Edward (California State University Fullerton)

See **Jonassen, Alexandra**

Lafayette, Linsie (The Archaeological Conservancy)

The Archaeological Conservancy and Site Preservation

General Session 2: The Archaeology of the Recent Past and Present

As a non-profit, the Archaeological Conservancy acquires land with significant archaeological sites that are at-risk of development or vandalism via donation or purchase. This presentation provides an overview of the Conservancy and highlights several preserves in the region and how they became part of our assemblage of protected sites.

Lane, Brian (University of Oregon)

Jampolsky, Marlene (University of Oregon)

Milking Trash Data: Ongoing Analysis of a Historic Dairy's Domestic Refuse

Symposium 4: In His Footsteps: Tom Connolly's Legacy in Oregon Archaeology

In this paper we present preliminary insights from the ongoing analysis of a historic (ca. 1915-1945) domestic refuse assemblage from the Bend area. As part of mitigation efforts for a highway realignment, the UO Museum of Natural and Cultural History conducted data recovery efforts in August 2022. The site was formed as part of a primary domestic refuse dump for the associated farmhouse. The house was built by Nels and Lilian Andersen, the owners of the Lilly Dairy (Andersen Dairy). The dairy was established ca. 1915 and grew to be one of the larger operations near Bend. The historic refuse dump is most closely associated with the couple's house which was built ca. 1930 and offers valuable insight into the life of an agricultural family within reach of the growing city of Bend in the early- to mid-20th century. Preliminary results from analysis of the assemblage indicate a mix of local and imported domestic goods, and possibly hint at how the dairy and its workers interacted with the domestic space near the house.

Lawlor, Anne (University of Utah)

The Fiber Artifacts from Floating Island Cave, Utah

Symposium 5: Beyond Stones and Bones: Current Research on Fiber Artifacts in the Great Basin

Floating Island Cave (42TO106) is small cave site on Floating Island, an isolated mountain range located in the northwestern Bonneville Basin. The mountain, aptly named because it appears to float above the surrounding salt playa, is a rocky, xeric setting of low shrubs, salt grass and pickleweed. Despite the lack of permanent water and distance from other known sites, Archaic foragers utilized the site and surrounding area throughout the Holocene. Faunal, coprolite, and ground stone assemblages from the site show subtle differences in human behavior between Floating Island Cave and Danger Cave, 30 miles to the southwest. The same appears to be true of the fiber artifact assemblage. Floating Island excavations in 1986 revealed abundant faunal and ground stone assemblages suggesting that small mammal hunting and plant food foraging was conducted at the site throughout the Holocene. The fiber artifact assemblage, on the other

hand, is small, and includes only a few pieces of coiled basketry and plied cordage. Given the presumed association of ground stone and basketry in processing small seeds, the small, comparable collection is puzzling. This analysis uses different modalities including residue analysis, use wear patterning and fiber identification to better understand how basketry and cordage might have been used at this remote site.

Ligman, Michael (Logan Simpson)

Button, Seth (Logan Simpson)

Grizzly Gulch: A Mining Landscape Through Time Along the Wasatch Front

General Session 2: The Archaeology of the Recent Past and Present

The Cottonwoods mining district on the Wasatch Front was home to one of the most productive and storied of Utah's hard rock silver districts, with legendary mines like the Flagstaff and Emma, but more than a century of mining between 1867 and the 1970s left the granite honeycombed with mine workings and dangerous openings. The Utah Abandoned Mine Reclamation Program addressed many of these in the 1980s and 1990s, but some of these closures badly need maintenance. In 2022, Logan Simpson was contracted to record and assess a remarkable mining landscape: the bowl of Grizzly Gulch. Through the use of a standardized grid survey system, in-depth historic and archival research, digital data collection methods, and historic photograph recreations, Logan Simpson documented an exceptionally rich and expansive mining landscape: over 2,500 artifacts and 506 historic mining features, including mine roads and an aerial tramway. The methods and results of this survey will be presented here. The data shed new light not only on the technical aspects of mining and the development of the district, but on the lives of Cottonwoods prospectors and miners. Opportunities for future work using this rich data set will also be briefly explored.

Louderback, Lisbeth (University of Utah)

Pavlik, Bruce (BMP Ecosciences)

del Rio, Alfonso (University of Wisconsin)

Bamberg, John (U.S. Potato Genebank)

Wilson, Cynthia (University of California Berkeley)

Domestication of the Four Corners Potato: The Genetic Signature of Indigenous People on the Landscape

Plenary Session: Beyond Boundaries

The process of domestication produces nutritious foods that can be grown in abundance, easily harvested and stored for long periods. Recent evidence suggests that a native potato species, known as the Four Corners Potato (*Solanum jamesii* Torr.) was manipulated by ancient people sometime during the last 12,000 years. The tubers might have been an important food source because of their nutritional qualities, reliable productivity, ability to propagate under a wide variety of conditions, and long persistence in the soil. Extensive field surveys have shown that

populations of this species now occupy atypical habitats among and within the great pueblos of the American Southwest, evidence that Indigenous farming practices included this species. Therefore, a collaborative archaeological, biological, and traditional ecological knowledge approach is well-suited to provide insight on the initial stages (use, transport and manipulation) of the domestication process. In the broader context, detecting these stages challenges our understanding of foraging strategies and a long-established scientific paradigm regarding agricultural origins and food choices among hunter-gatherers in North America by identifying the Four Corners as a hitherto unknown center of plant domestication. Herein we present genetic, life history, and archaeological evidence pertaining to the question of domestication of a species native to the American Southwest.

Louderback, Lisbeth (University of Utah)

See **Pavlik, Bruce**

See **Roberts, Heidi**

See **Wilks, Stefania**

Lubinski, Patrick (Central Washington University)

Butler, Virginia (Portland State University)

Emery-Wetherell, Meaghan (University of Arizona)

Hudson, Adam (U S. Geological Survey)

Royle, Thomas (Simon Fraser University)

Jenkins, Dennis (University of Oregon)

Studies of Paisley Caves Fish Remains to Explore Human Lifeways, Biogeography, and Lake History

Symposium 7: Multi-Disciplinary Investigation of Cultural and Ecological Assemblages at the Paisley Caves in the Chewaucan Basin, South-Central Oregon

There have been two studies of fish remains from Paisley Caves, one focused on the Younger Dryas age Botanical Lens, and the other including all levels of two 1 x 1 m excavation units each in Caves 1, 2, and 5. Combining these studies, we have employed analyses of bone morphology and metrics, taphonomic traces, aDNA, bone isotopes (C, O, and Sr), and age-depth modeling to investigate human lifeways, biogeography, and lake history over the past ~15,000 calendar years. Together these samples provided 3,566 fish specimens, mostly Tui chub, with small numbers of redband/rainbow trout. Specimens were assigned ages by level in the Bchron model using 109 radiocarbon dates. These bones and scales are mostly in the lowest levels (~12.9-15.0 ka) when the lake was high and thus close to the site, with relatively few thereafter. The origin of the earliest fish remains is uncertain, but anthropogenic origin is more secure for deposits ~ 12.8-11.5 ka due to association with cultural materials and fishing tools. Isotope compositions from 62 fish bone samples reveal Tui chub were obtained from an expansive lake in the lowest levels, associated with the Bølling/Allerød and early Younger Dryas, but mainly

from spring or stream-influenced sources thereafter, with the driest conditions during the middle Holocene. Lake level decline during the Younger Dryas suggests drying climate, differing from more southerly records.

Lubinski, Patrick (Central Washington University)

See **Hudson, Adam**

Madsen, David (Nevada State Museum)

Fremont Farmer-Foragers on the Margins of Agriculture

Plenary Session: Beyond Boundaries

A distribution map of sites with distinctive “Fremont” pottery, based on reexamination of museum collections in Nevada, together with a review of site records in Nevada and other western states, indicates these farmer-foragers were seasonally foraging between ~1500-650 14C yr BP at great distances (200-300 km) from core farming areas in the eastern Great Basin and Colorado Plateau. This involved the production of locally produced Fremont plainwares which are difficult to distinguish from Late Prehistoric brownware pottery on the basis of paste and temper differences since they were often produced using the same sedimentary sources. These temporally distinct pottery types can, however, be distinguished by other production values. The foraging area suggested by this pottery distribution covered >5,000,000 km² in western North America, resulting in these farming-based people likely interacting with a large number of local, non-farming, foraging groups. The nature of this interaction is unclear, but probably included trade and social exchange involving patrilocal intermarriage, with highly trained Fremont women potters becoming integrated into groups of non-farming foragers.

Martin, Erik (Far Western Anthropological Research Group)

Settlement Patterns along the Reconstructed Littoral Ecosystems of Carson Sink

Poster Session 2: Recent Research in Great Basin Anthropology II

The Carson Sink of today – a vast, alkaline playa stretching between the Western Humboldt and Stillwater Mountains – bears little resemblance to the landscape encountered by early inhabitants of the Great Basin. In a pattern repeated throughout Lake Lahontan’s interconnected valleys, the margins of Carson Sink formed the shorelines of the pluvial lake with an expansive marsh environment at its periphery. Located at the southern margin of the Sink, the Stillwater Wildlife Refuge is today characterized by such shallow, productive marsh environments, yet would have been more than 20 meters underwater throughout much of the Late Pleistocene. Between Lake Lahontan’s relict shorelines and today’s marsh, however, is a vast landscape at the margin of the valley that may have once been the location of similarly productive, paludal and littoral ecosystems. This study combines the results of over 50,000 acres of archaeological survey throughout the Carson Sink and along the northern periphery of Stillwater Marsh with recently released, high-resolution digital elevation model (DEM) data for the area. A sample of documented sites in conjunction with bathymetric projections with

sub-meter accuracy suggest shallow marsh environments along the periphery of the valley bottom have long influenced archaeological site location.

McCormick, Riley (Great Basin Institute)

McDonough, Katelyn (University of Oregon)

A First Look at the Bone, Stone, Shell, and Glass Beads from the Connley Caves, Oregon

Poster Session 2: Recent Research in Great Basin Anthropology II

This poster provides a first overview of the bead assemblage from the Connley Caves in central Oregon and considers how it fits within the broader archaeological record of the Northern Great Basin. The Connley Caves consist of eight rockshelters and have been the focus of intermittent archaeological investigations since the 1960s. Until recently, only two beads were known from the site — one Olivella shell bead from Cave 6 found by Stephen Bedwell in 1967, and a second Olivella shell bead from Cave 6 found by the University of Oregon Museum of Natural and Cultural History Archaeological Field School in 2000. In 2021, excavations by the field school began to uncover a variety of bone, stone, shell, and glass beads from Middle and Late Holocene contexts in Cave 6. Here we present descriptions, measurements, and contextual information for each of the 67 beads and use those data to investigate bead diversity and chronology, potential explanations for the prevalence of beads in one shelter relative to the others, and how this may contribute to understanding bead use in the region.

McDonough, Katelyn (University of Oregon)

Rosencrance, Richard (University of Nevada Reno)

Tom Connolly and the Ties That Bind

Symposium 4: In His Footsteps: Tom Connolly's Legacy in Oregon Archaeology

Like a well-made basket, mat, or net, the legacy of Tom Connolly's career is as strong as it is impressive. Both are made of complex pieces that complement one another to form something only the most dedicated and experienced individuals can accomplish. In this paper, we discuss the profound impacts Tom has had on us, our research, and the fields of Oregon and Great Basin archaeology more broadly. We will weave through the research, mentorship, and personal character "ties that bind" of Tom Connolly's career as we see it. First, we present new radiocarbon and textile data from the Cougar Mountain and Connley Caves, which would not be possible without Tom's direct involvement and many years of foundational textile research. The second and third "ties" include Tom's brilliant leadership and kind character, which we have experienced first-hand as his students, employees, and colleagues. We hope that these impactful research examples and fond memories provide some measure, however minor, of Tom Connolly's outstanding legacy.

McDonough, Katelyn (University of Oregon)

See **Davis, Edward**

See **Hlebechuk, Aiden**
See **Hudson, Adam**
See **Jenkins, Dennis**
See **McCormick, Riley**
See **Rosencrance, Richard**
See **Saper, Shelby**
See **Smith, Geoffrey**

McGuinness, Megan (Anderson Perry & Associates)

Over Uplands and Across Valleys: A Test of Ideal Free Distribution of Human Settlement During the Terminal Pleistocene/Early Holocene in the Northwestern Great Basin, USA

General Session 1: Interpreting Toolstone Conveyance, Site Location, and Land Use

This presentation examines human settlement patterns in the northwestern Great Basin during the terminal Pleistocene/early Holocene (TP/EH) (~16,000-8300 cal BP) using the Ideal Free Distribution (IFD) model. I rank four basins using two suitability proxies: (1) a caloric resource abundance estimate; and (2) a resource return rate estimate. Both are based on common plants and animals found in the Great Basin. The settlement chronology for the region comes from time-sensitive Western Stemmed Tradition (WST) points. The results suggest that access to sagebrush steppe and upland environments were the environmental zones most influencing habitat suitability at the scale of prominent basins, even though most WST sites are found in wetland and riparian zones. These contrasting findings suggest there may have been division of labor among hunter-gatherers in the northwestern Great Basin as early as the Younger Dryas and into the early Holocene.

McGuire, Kelly (Far Western Anthropological Research Group)

Hildebrandt, Bill (Far Western Anthropological Research Group)

Armstrong-Ingram, Angela (Far Western Anthropological Research Group))

Carpenter, Tim (Far Western Anthropological Research Group))

A Six Thousand-Year Profile of Subsistence at Owens Lake: The Faunal and Archaeobotanical Records from the Olancho-Cartago Project

Symposium 2: A 6,500 Year Record of Indigenous Occupation and Environmental Change at Patsiata (Owens Lake)

The Olancho-Cartago faunal profile is characterized by the gradual increase in waterfowl, and specifically eared grebes, from about 4,200 cal BP to 700 cal B.P. This pattern peaks and continues through the zenith of lakeside habitation and land-use intensity documented between 1,700 cal B.P. and 1,200 cal B.P. This intensification of grebes abates somewhat after 700 cal B.P. Paleobotanical studies show an intensified use of plant foods over time, marked by

increased density and diversity of species through the occupational sequence. High-ranked nuts (acorn and pinyon) reach their highest proportions early in time, followed by the addition of small seeded plants, first from wetland settings adjacent to Owens Lake and later from nearby dryland settings. This broadening of the diet breadth is accompanied by changes in the use of firewood. Finally, these trends in dietary remains are reviewed with respect to broader shifts in climate and lake levels, settlement and land-use patterns, and technology.

McQueen, Robert (Summit Envirosolutions)

Taking a Shot at Ethnohistoric Sites

Plenary Session: Beyond Boundaries

This paper looks at identifying late 19th century sites occupied by the Western Shoshone in northern Nevada. Much of the regional literature on ethnohistoric sites focuses on identifying early contact sites, which for the Great Basin begin around the 1840s, and the mixing of certain 'prehistoric' and 'historic'-era artifacts. However, research aimed at later-era ethnohistoric sites note an increased blurring of traditional ethnic markers, making the sites hard to distinguish from similar sites occupied by Euro-Americans. For example, one researcher noted a near-complete lack of debitage on ethnohistoric sites dating after 1880. I focus on three areas in north-central Nevada with ethnohistoric sites and highlight one particular artifact as an example of this blurring and how it reflects on larger changes to traditional Indigenous lifeways.

Meatte, Daniel (Washington State Parks)

Illuminated Rocks: Paleoindian Use of Quartz Crystals in the Western US

General Session 1: Interpreting Toolstone Conveyance, Site Location, and Land Use

Use of macrocrystalline quartz in Clovis-age tool assemblages is well documented throughout much of North America. Quartz crystals possess several qualities making them attractive for use. Despite an internal crystalline structure, quartz crystals are subject to conchoidal fracture making them ideal for tool making. They also exhibit several distinctly esthetic qualities: optical transparency; a regular hexagonal shape that scales regardless of size; refraction - when looked thru objects are visually distorted; and when struck or abraded, they produce illumination (triboluminescence). I examine the formation processes that structure the size, character and distribution of macrocrystalline crystals in the western United States. Next, the properties of quartz crystals are reviewed to show how contribute to cultural ideas of ascribed power. Finally, brief consideration is given to Paleo-Indian symbolism as expressed in tool stone selection.

Memmott, Margo (Broadbent & Associates)

Modern Data Recovery Approaches for a Mid-Century Modern Mine

General Session 2: The Archaeology of the Recent Past and Present

The Yerington, Nevada copper mine was the Anaconda Company's first domestic open pit mine in the U.S. after WWII, three years ahead of its infamous Berkeley Pit in Montana. The site

operated from 1951-1978 and includes the mine pit, remnants of the processing plants, and company housing. Yerington is a snapshot of how Anaconda operated at midcentury and illustrative of how the entire mining industry was undergoing significant, fundamental changes in scale, design, and daily operation. As such, Broadbent endeavored to create a record of the mine that would capture that moment in mining history. Broadbent utilized modern data recovery methods, Unmanned Aerial Vehicle (UAV) photogrammetry, to document the historic mining complex resulting in three dimensional digital models of the remaining processing plants and an orthomosaic map of the mine.

Merrill, Alyssa (Brigham Young University)

See **Watkins, Christopher**

Metcalf, Duncan (University of Utah)

See **Boomgarden, Shannon**

Millar, Constance (U.S. Forest Service)

See **Thomas, David**

Morgan, Christopher (University of Nevada Reno)

What the Radiocarbon Record Can and Can't Tell Us About Great Basin Prehistory

Symposium 8: Exploring the Intersections of Human Ecology and Culture History in the Great Basin

Radiocarbon summed probability distributions (SPDs) have become increasingly popular as means to track demographic trends, and by association, any variety of explanations for changes in past behavior. This paper uses SPDs from across the Great Basin to develop hypotheses as to the ostensible effects of climate, technological change, population movements, and demography itself on human behavior. These hypotheses are then critically reviewed per the method and theory behind using SPDs in archaeology and within the context of the limitations of the region's archaeological record.

Mueller, Jackson (University of Nevada Reno)

Smith, Geoffrey (University of Nevada Reno)

Cody Complexities: Early Holocene Square-based Projectile Points from Southeastern Oregon

Poster Session 2: Recent Research in Great Basin Anthropology II

A decade ago, Dan Amick proposed that early Holocene square-stemmed projectile points from the northern Great Basin marked incursions by Cody complex bison hunters originating on the Great Plains. He argued that researchers' tendency to call any early Holocene square-stemmed points in the region Windust has obscured possible evidence of northern Great Basin-northern Great Plains socioeconomic connections. Since Amick proposed these ideas, crews from the

University of Nevada, Reno have conducted extensive fieldwork in the Warner, Guano, and Hawksy Walksy valleys of southern Oregon. We have uncovered numerous examples of well-made square-stemmed points that, at face value, look like points found in early Holocene contexts on the Great Plains. Here we present basic morphological and source provenance data for these points, which we consider within the context of Amick's thought-provoking hypothesis.

Murphy, Elizabeth (Bureau of Land Management)

Abandoned Mine Lands (AML) and Compliance Archaeology

Poster Session 2: Recent Research in Great Basin Anthropology II

The Abandoned Mine Lands (AML) program of the US Department of the Interior (DOI), Bureau of Land Management (BLM), was established in 1997 and is responsible for addressing physical and environmental hazards associated with abandoned hard rock mines. The BLM inventories and monitors abandoned mine sites, prioritizes, and remediates hazards using risk-based assessment, and implements appropriate temporary or permanent mitigation measures. Multiple statutes and regulations authorize the BLM to clean up environmental degradation and mitigate physical safety risks associated with abandoned mines, specifically, 2015 State Protocol between BLM and Oregon SHPO. This authorization extends to sites determined to be eligible for the National Register of Historic Places (NRHP) as well as ineligible and unevaluated sites. Over the summer of 2023, pedestrian cultural clearance surveys were conducted at 11 AML in the Baker Field Office, Vale District BLM. Seven of the 11 AML were found to have historic cultural resources in addition to the AML feature. AML are first and foremost a safety concern, and a safety fence has been determined to have very little to no effect on the site's eligibility to the NRHP, as determined by the AML section of the 2015 OR SHPO/ OR BLM Protocol. These 11 AML are currently unevaluated for the NRHP and are in progress of being secured for public safety with multiple sites having drafted National Environmental Policy Act (NEPA) Categorical Exclusions.

Nelson, Nate (U.S. Army Dugway Proving Ground)

See **Freund, Kyle**

Newell, Zachary (Oregon State University)

Davis, Loren (Oregon State University)

Smith, Geoffrey (University of Nevada Reno)

Nyers, Alex (Northwest Archaeometrics)

Preliminary Results of the 2022 Excavations at Silvies Cave, Northern Great Basin

Symposium 9: Tradition, Teaching, and Technology: Papers in Honor of Dan Stueber

Excavations conducted in 2022 at Silvies Cave, located in the Silvies River Valley of eastern Oregon's northern Great Basin region, sought to assess the stratigraphic integrity of the site as

a first step toward potential future investigations. Notably, previous test excavations conducted by JD Lancaster reported a stratified sequence of deposits, including later period notched points underlain by stemmed points and a fragmentary fluted point. The 2022 excavations expanded on Lancaster's units, located inside and outside of the cave, and encountered a mixed sequence of projectile point types contained in sediments visibly disturbed by burrowing animals and historic activities. The fluted point fragment, while similar in design and manufacture to other specimens found at the Dietz site in the Northern Great Basin, is most likely in disturbed sediments that yielded historic materials. Here, we present the results of radiocarbon dating to evaluate the history of site formation and discuss potential next steps for site investigation.

Niclou, Alexandra (Pennington Biomedical Research Center)

See **Greenwald, Alexandra**

Nyers, Alex (Northwest Archaeometrics)

Davis, Loren (Oregon State University)

Obsidian and Chert Provenance Studies at the Cooper's Ferry site, Idaho: A Preliminary View
Symposium 9: Tradition, Teaching, and Technology: Papers in Honor of Dan Stueber

Obsidian debitage and tools represent less than 1% of the total lithic artifacts encountered at the Cooper's Ferry site, located in Idaho's lower Salmon River canyon. Obsidian debitage was encountered in deposits spanning the late Pleistocene to early Holocene period from ~13,750-9500 cal BP. A population of 126 pieces of debitage were submitted for x-ray fluorescence analysis at the Northwest Research Obsidian Studies Laboratory. Analysis revealed that these debitage originated from multiple regional obsidian sources, including Timber Butte, Coyote Wells, Silver Lake/Sycan Marsh, Indian Creek, and an unknown source locality. Additionally, multiple artifacts were sourced to the Lochsa Vitrophyre locality. The majority of the debitage was traced to Timber Butte, followed by the Lochsa Vitrophyre source—the two sources that were also linked to the oldest pyroclastic toolstones at the site. In contrast to the rare occurrence of obsidian at the site, most lithic artifacts at Cooper's Ferry are made on cryptocrystalline silicate (CCS) toolstones. While obsidian provenance systems are well established in the Pacific Northwest, systems for sourcing CCS rocks are rare. Here, we briefly describe our efforts to establish a CCS toolstone provenance system for the lower Salmon River canyon in hopes of encouraging others to expand studies in the Great Basin.

Nyers, Alex (Northwest Archaeometrics)

See **Davis, Loren**

See **Newell, Zachary**

See **Rosencrance, Richard**

See **Stone, Samantha**

Ocobock, Cara (University of Notre Dame)

See **Greenwald, Alexandra**

Origer, Tom (Origer's Obsidian Lab)

Almost Twenty Years of Obsidian Hydration Analysis at Paisley Caves

Symposium 7: Multi-Disciplinary Investigation of Cultural and Ecological Assemblages at the Paisley Caves in the Chewaucan Basin, South-Central Oregon

Paisley Caves presented a unique situation in southcentral Oregon for the application of obsidian hydration analyses. This study, which began in 2005, provided millions of readings from more than 100 sensors that recorded temperatures from the ground surface to depths of 225 centimeters. Over 500 hydration band measurements were obtained. We will discuss the challenges, successes, and failures of this study. Specifically, this obsidian hydration analysis elucidated the effects of cave environments on the development of hydration bands, and helped tell the story about the people who, at a very early time, occupied the Chewaucan Basin and used its resources as well as those of more distant places. On a broader scale, this study provides food for thought about ongoing and future obsidian hydration-based research.

Oviatt, Charles (Kansas State University)

See **Young, D. Craig**

Palacios-Fest, Manuel (Terra Nostra Earth Sciences Research)

Duke, Daron (Far Western Anthropological Research Unit)

Mollusks and Ostracodes Biofaces of the Old River Bed Delta between ~13,000 and 7500 cal yr BP

Symposium 3: Tracking the Human Landscape of the Old River Bed Delta at the Pleistocene-Holocene Transition

The importance of invertebrates, especially ostracodes and aquatic mollusks, is well known for reconstructing past environments. The analysis of ostracodes and mollusks in 30 sediment samples from 12 localities in the Old River Bed delta (ORBD) allowed us to recognize several lacustrine biofacies between ~13,000 and 7500 cal yr BP. The occurrence of species previously reported from Lake Bonneville was an unexpected outcome. Species such as *Lymnaea stagnalis jugularis*, *Cytherissa lacustris*, and possibly *Candona* sp. cf. *C. adunca* (an endemic and extinct species only reported from Lake Bonneville) indicate cold-water conditions. Strontium isotope analysis from *L. stagnalis jugularis* for the interval 13,000-12,300 cal yr BP demonstrates that Lake Gunnison, part of the Sevier drainage catchment to the south, was the primary source of water to Lake Currey and the ORBD. The faunal association shows that three paleoecological intervals happened within this period, and three more occurred after 12,000 cal yr BP. The lower three biofacies mark the shallow, cold freshwater Lake Currey. The upper three biofacies display desertification at the end of the record. This study adds new evidence of the conditions human occupants faced at Pleistocene-Holocene transition.

Parker, Ashley (Far Western Anthropological Research Group)

See **Kitterman, Anya**

Pattee, Donald (Applied Archaeological Research)

Roulette, Bill (Applied Archaeological Research)

Paleoarchaic Land Use of the Camas-Washougal Uplands, Clark County, Washington

Symposium 9: Tradition, Teaching, and Technology: Papers in Honor of Dan Stueber

Our study focuses on the western Columbia River Gorge in the uplands of Clark County that back the Columbia River bottomlands, which we refer to as the Camas-Washougal Uplands (CWU). Drawing upon work by Applied Archaeological Research, Inc. (AAR) and others, we explore the post-Missoula flood colonization of southwest Washington focusing on Clark County. We contend that locally, the entry point for the early post-flood colonizers was the Columbia River Gorge. The timing of the entry appears to be the terminal Paleoarchaic. Groups carried toolkits that included projectile points of the Western Stemmed Tradition (WST) and bola stones. We present data that suggest the CWU was the preferred location for occupation and staging activities. At the same time, as suggested by isolated finds of WST points in Clark County and Multnomah County, Oregon, members of groups headquartered in the CWU ventured out beyond the CWU. Our research also shows that places where WST groups camped were sequentially used by groups with material culture assignable to the Archaic period, which can be equated to the Cascade phase. While the idea that the WST and Cascade peoples were historically related, to our knowledge that assumption has not been demonstrated on technological grounds. Nonetheless, in southwest Washington, groups representing the two traditions at least initially shared a similar landscape orientation. What underpins this has yet to be well explained. Through time, Cascade phase groups began to incorporate the tablelands of interior Clark County away from the CWU into their settlement systems.

Patterson, Jody (Montgomery Archaeological Consultants)

Spatial Distribution and Intrasite Patterning of Binary Fremont Structures in the Tavaputs

Plateau and San Rafael Swell Regions of East-Central Utah

Symposium 6: Recent Research in Fremont Studies

Aerial photographic archiving of open Fremont structural sites in East-Central Utah identified dozens of examples of paired masonry structures across the region. The binary arrangement of the structures is relatively consistent, with one large structure associated with a similar, but smaller, structure located within a few meters. While the intersite patterning and arrangement of the structures is consistent, the binate structures occur on a variety of different landforms that archaeologists in the past have interpreted as part of site function (e.g., terrace = habitation location, pinnacle = defensive location, etc.). This paper examines the spatial distribution and intersite patterning of binary Fremont structures relative to the landforms that they occupy. It is shown that the binary intersite patterning is consistent across multiple landform types. I

argue that the observed binary pattern relates more to aspects of social organization than to site function.

Pavlik, Bruce (BMP Ecosciences)

Simper, Heidi (University of Utah)

Wilks, Stefania (University of Utah)

Louderback, Lisbeth (University of Utah)

Documenting Potential Gathering Areas of Ethnographically Significant Plant Species on the Utah Test and Training Range

Symposium 3: Tracking the Human Landscape of the Old River Bed Delta at the Pleistocene-Holocene Transition

The goal of our field work at the Utah Test and Training Range (UTTR) was to collaborate with Tribal members and to identify population locations (“gathering areas”) of ethnographically significant plant species (ESPS). Widely recognized and published Indigenous plant use traditions include a primary group with close geographic ties to the study area (Goshute, Shoshone, Ute and Crow), and a secondary group at a greater distance – Hopi, Diné, Paiute and Tewa). In June 2022, September 2022, and June 2023, ten sites were surveyed across and beyond the UTTR boundaries. The sites consist of a variety of lowland habitat types, including alkali marsh, cold desert scrub, stabilized and unstabilized desert dunes, and limestone outcrops. In all, the occurrences of more than 70 plant species were documented by collecting over 200 herbarium specimens that will be repositied at the Garrett Herbarium of the Natural History Museum of Utah. A set of mounted and labeled specimens will also be given to the Northwest Band of Shoshone, focusing on 20 ethnographically significant plant species (ESPS) that occurred at the 10 surveyed sites. A subset of these 20 ESPS had populations that were apparently large enough to allow a limited amount of sustainable gathering for cultural purposes.

Pavlik, Bruce (BMP Ecosciences)

See **Louderback, Lisbeth**

Pearce, Pamela (University of Nevada Reno)

Diversity in the Archive(s): Results from the George Whittell Forest and Wildlife Area

General Session 2: The Archaeology of the Recent Past and Present

Many university anthropology departments maintain extensive archival collections related to previous faculty research, which remain an underutilized resource for regional research. This paper explores a fifty-year-old collection related to the University of Nevada, Reno's Whittell Forest. Analysis of field school survey and excavation records are supplemented with limited field visits to relocate still-extant sites, and limited work with object-based collections. Common cultural resource management strategies for archaeological, historical, ethnographic

background research are employed, to integrate these collections into a localized research framework. Ultimately, this synthesis reveals social and economic interactions between a diverse range of individuals and cultures, from time immemorial to the recent past.

Pollock, Alain (Broadbent & Associates)

See **Hencmann, David**

Popp, Theresa (Utah State University)

Protein Residue Analysis in Archaeology: Preliminary Results of a Contamination Experiment

Symposium 1: From Channel Flakes to Bison Jumps: Current Archaeological Investigations in Southern Idaho

Protein residue analysis, also known as cross-over immunoelectrophoresis (CIEP), has been conducted on lithics for the past thirty years. These analyses are typically performed to identify the faunal species that may have been killed or processed by stone tools recovered from archaeological contexts. Despite some controversy over the reliability of protein residue analysis, the method has continued to be used and trusted by many archaeologists. However, potential contamination of in situ lithic artifacts hasn't been fully explored. The preliminary results of my experiment raise concerns related to potential contamination of artifacts in buried deposits.

Pratt, Jordan (Texas A&M University)

A Survey of Western Stemmed Point Technology in the Harney Basin, Oregon

Poster Session 2: Recent Research in Great Basin Anthropology II

The age and distribution of stemmed point technology in the Far West is important for a full understanding of late Pleistocene and Early Holocene archaeology in North America. Despite the importance of stemmed points to debates surrounding the peopling process, there are still questions surrounding typology, and distribution, of specific stemmed point types. This research presents a systematic metric and non-metric analysis of stemmed points recorded and collected on land managed by the Burns District Bureau of Land Management (BLM) in the Harney Basin, eastern Oregon. Robust ongoing research programs over the last 25 years recovered over 300 stemmed points from the public lands managed by the Burns BLM. Here I present the analysis of those stemmed points in an effort to determine if there are discrete or continuous morphological and technological differences between defined Western Stemmed subtypes in the basin. Geochemical and geospatial data is incorporated to determine how raw-material variability, and distance from geologic source, potentially affects this variation. Together, these analyses bolster our interpretations of Western Stemmed lithic technological organization.

Quintanilla, Desiree (Malheur National Forest)

Cambium Peeled Trees in the Southern Blue Mountains of Eastern Oregon

Poster Session 1: Recent Research in Great Basin Anthropology I

Forests in the Pacific Northwest are a living testimony of the skill and knowledge held by Native Americans. Deep in the Malheur National Forest is a type of culturally modified tree that was created by Native Americans, known as cambium peeled trees. Cambium peeled trees (CPTs) are created by peeling back the outer bark to reach the inner layer of bark called cambium. Over the past 50 years, archaeologists have realized the existence and the importance of CPTs. These trees are living archaeological sites that are susceptible to environmental factors like age, fire, drought and disease and human activities such as logging and defacement. By identifying environmental factors that play a role in the location of CPTs it is possible to identify areas within the Malheur National Forest in which these trees can be located and thus ensure their protection.

Rathbone, Stuart (NCE)

Glen Alpine Springs Resort and Landscape Transitions in the Tahoe Sierra

General Session 2: The Archaeology of the Recent Past and Present

Glen Alpine Springs Resort was established in 1873 by Nathan Gilmore at the location of a small soda spring south of Lake Tahoe. The resort was one of three early health-oriented resorts in the Tahoe Basin, and the first resort to be built away from the lakeshore. Initially viewed as a source of danger, travail, and resources ripe for exploitation, by the 1870s the Tahoe Sierra began to be valued as a landscape of solace and escape that required protection and conservation. Gilmore collaborated with John Muir and other prominent early members of the Sierra Club to try to ensure continued public access to a well-preserved area of the Tahoe Sierra. These efforts would eventually contribute to the establishment of the Lake Tahoe Forest Reserve in 1899, and the initiation of a new phase of land management practices in the Tahoe Basin. By the early-20th century the resort included two small hotels, a lodge, a dining hall, and a kitchen, with most guests residing in tent-cabins. A fire in 1921 burnt down most of the original buildings. Famed Berkeley architect Bernard Maybeck subsequently constructed their replacements, including the exemplary Assembly Hall, Dining Hall, and Kitchen. The resort eventually closed in 1968 and since 1978 it has been maintained by a non-profit organization. The site has recently been recorded in detail by NCE and was found to consist of a dense collection of archaeological and architectural resources. It has been recommended for listing on the NRHP as a historic district.

Rhode, David (Desert Research Institute)

See **Wriston, Teresa**

Richards, Katie (New Mexico State University)

Exploring the Social Context of Fremont Painted Bowls

Symposium 6: Recent Research in Fremont Studies

Fremont interconnectivity and social identity have been topics of debate in the region for decades. Understanding ways in which Fremont peoples in disparate reaches of the region shared social frameworks allows us to better explore questions foundational to understanding these agriculturalists on the far northern frontier of the Puebloan Southwest. In this study, I use painted pottery from floor and floor-zone contexts to compare how people in villages across the Fremont region used painted pottery. Although this level of data is only available for a small percentage of excavated Fremont villages, the results show intriguing patterns that suggest people across the region shared a social framework for the proper use of Fremont painted bowls. This pottery is most strongly associated with communal structures but also appears within most residences. This pattern becomes more interesting when contrasted with the use of imported Ancestral Puebloan pottery which does not demonstrate the same level of consistent patterning. The patterns elucidated from associations of painted pottery and structure type provide intriguing evidence that individuals across the Fremont region shared specific beliefs and understanding about the proper use of painted pottery.

Riley, Tim (Utah State University)

Exploring Perishable Weaponry Components from the Northern Colorado Plateau

Symposium 6: Recent Research in Fremont Studies

Eastern Utah's high dry deserts have led to remarkable preservation of the "missing majority" or perishable components of past lifeways, including many examples of projectile weaponry. These objects can add direct evidence to studies focused on the adoption of the bow and the persistence of the atlatl in specific regions, an argument frequently based on projectile point typology. Unfortunately, many of the sites that exhibit this incredible preservation were heavily impacted by looting and other poorly documented collection practices, resulting in a loss of context and cultural affiliation for these objects. This presentation focuses on adding temporal context to perishable projectile weaponry housed at the Utah State University Eastern Prehistoric Museum through direct radiocarbon dating. Because many of these objects have very limited spatial association due to their removal from archaeological sites by private collectors, temporal context is one of the only ways to better associate these objects with the people and archaeological cultures who created and used them in their daily lives.

Riley, Tim (Utah State University)

See **Cheney, Chelsea**

Roberts, Heidi (HRA Inc.)

Hardin, Keith (HRA Inc.)

Louderback, Lisbeth (University of Utah)

The Hotbed Site: A Basketmaker II Women's Retreat for Birthing or Menarche in Southwestern Utah

General Session 1: Interpreting Toolstone Conveyance, Site Location, and Land Use

In the sand dunes of southwestern Utah, over 220 thermal features, including roasting pits, hearths, slab-lined hearths, and concentrations of fire-cracked rock (FCR) have been excavated and radiocarbon dated between 8,000 years ago and the historic period. Although most were used to cook wild foods, nine thermal features at a Basketmaker II camp (42WS4001) are unique. First, these features do not resemble roasting pits because they are larger than average and built on the prehistoric surface. Second, although the site was reoccupied periodically, the FCR in the thermal features was never reused. We hypothesize that these thermal features functioned as hotbeds for birthing and menarche. It was a common and widespread practice during the ethnohistoric period for Indigenous women throughout the region to recover from birthing by lying on a bed of hot rocks for up to two weeks. Hotbeds were also used by many groups during menarche ceremonies.

Robinson, Erick (Native Environment Solutions)

See **Bianchini, Michael**

See **Cheney, Chelsea**

See **Finley, Judson**

See **Harvey, David**

See **Walzer, Mariah**

See **Wolberg, Alexandra**

Rogers, Alexander (Maturango Museum)

Robert Yohe II (California State University Bakersfield)

Recent Advances in Obsidian Hydration Dating

General Session 1: Interpreting Toolstone Conveyance, Site Location, and Land Use

Major advances have been made in in the past decade in understanding and applying the basic science of obsidian hydration dating (OHD). Drawing on advances in geochemistry and glass science, mathematical models for OHD have been developed and published which are based on the physics and chemistry of obsidian hydration. Although MS Excel is adequate for computation in many cases, computer codes have been assembled and published which ease the burden of computation for large data sets. If these improved methods are used, OHD is capable of reliably placing obsidian artifacts within the correct archaeological period, and of

answering interesting anthropological questions. In this paper we address four significant aspects of these advances: the form of the age equation, the role of temperature and of obsidian intrinsic water in determining the hydration rate, and the ability to compute age accuracy as well as age itself.

Rosencrance, Richard (University of Nevada Reno)

12 Millennia of Perishable Technologies at Cougar Mountain Cave, Oregon

Symposium 5: Beyond Stones and Bones: Current Research on Fiber Artifacts in the Great Basin

Perishable technologies are relatively common in Great Basin dry rockshelters, but most assemblages are small and limited in diversity. Cougar Mountain Cave is thus a special case with a large and diverse perishable assemblage that has until now, been unstudied. I present the results of ongoing collections-based research of the site that includes direct radiocarbon dates on over 200 perishable objects. These include items such as baskets, mats, cordage, weaponry, and traps that span the last 12,500 years. These dating efforts allow my team and I to put the items into chronological assemblages that show punctuated visits for both narrow and wide ranges of tasks. This work also establishes Cougar Mountain Cave as having the largest assemblage of perishable items dating to the Late Pleistocene anywhere in the Americas. For the first time, there is a clear picture to the timing and nature of visits to Cougar Mountain Cave that can be compared to regional sites, chronologies, and environmental change.

Rosencrance, Richard (University of Nevada Reno)

Commendador, Amy (Idaho Museum of Natural History)

Clements, Joshua (Idaho National Laboratory)

Nyers, Alex (Northwest Archaeometrics)

Late Pleistocene Haskett Toolstone Use in Southern Idaho

Symposium 1: From Channel Flakes to Bison Jumps: Current Archaeological Investigations in Southern Idaho

The abundant geological sources of volcanic glass found across the Intermountain West landscape provide ideal opportunities to learn about Indigenous toolstone use, transport, and trade throughout all time. Toolstone research has a long history in southern Idaho, but the numerous existing studies largely excluded Late Pleistocene and Early Holocene time periods due to small sample sizes and poorly understood point chronologies. Using collections housed at the Idaho State Museum of Natural History and Idaho National Laboratory, we provide a new baseline of toolstone use and conveyance during the Late Pleistocene through the lens of Haskett projectile points found across southern Idaho. We use these data to explore new ideas about early toolstone use, mobility, and cultural exchange in the region. We further compare patterns of Haskett lithic conveyance in southern Idaho with those in the Great Basin to the

west and south to explore potential interaction sphere's as well as how the Haskett record compares to the limited record of fluted point raw material conveyance. We ultimately see this as a small first-step in a new chapter of toolstone research in Idaho.

Rosencrance, Richard (University of Nevada Reno)

McDonough, Katelyn (University of Oregon)

Practice Makes Permanent: Stone Tools, Friendship, and Mentorship with Dan Stueber
Symposium 9: Tradition, Teaching, and Technology: Papers in Honor of Dan Stueber

The knowledge of how to make stone tools is one of humanity's shared legacies that for hundreds of thousands of years has been transferred from teacher to student. Dan Stueber has spent much of his archaeological career conducting experimental flintknapping but more importantly, mentoring others in the ways of the hammerstone and billet. For us, Dan taught us how replication, experimentation, and hands-on approaches can not only help us understand how people in the past may have lived, organized their technology, and problem solved, but also how teaching and learning difficult skills is core to being human. In this talk we share stories of Dan's tutelage as we have experienced it, provide an update on our current excavations at the Connley Caves with specific ways Dan has influenced it, and conclude by showcasing how his unwavering positive attitude and dedication have taught us to be better teachers.

Rosencrance, Richard (University of Nevada Reno)

Smith, Geoffrey (University of Nevada Reno)

Jazwa, Christopher (University of Nevada Reno)

Towards Establishing a High-Resolution Chronological Record of the Atlatl-and-Dart to Bow-and-Arrow Transition in the Great Basin
Plenary Session: Beyond Boundaries

The adoption of the bow-and-arrow by Indigenous peoples was a significant event that had profound social and economic effects. In the Great Basin, researchers have traditionally placed the appearance of the bow-and-arrow weapon system between ~1800 and 1500 calendar years ago and assumed that it almost immediately replaced the atlatl-and-dart system. Few efforts have been made to understand when, from where, and how quickly this shift took place. Direct AMS dating of organic weapon components from legacy collections offers a means of addressing these questions. Here, we report dozens of AMS dates on atlatls, darts, bows, and arrows from nine Great Basin sites. Though much work remains to be done, our preliminary results do not support a rapid transition. Rather, they indicate that the atlatl-and-dart and bow-and-arrow systems were used alongside each other maybe as long as six centuries. As our dataset of directly dated weapon components continues to expand, it will contribute to ongoing conversations about when and why people favored one system over another, and the economic and social effects that such decisions carried with them.

Rosencrance, Richard (University of Nevada Reno)

See **Bradley, Erica**

See **Davis, Loren**

See **Hlebechuk, Aiden**

See **Hudson, Adam**

See **Jenkins, Dennis**

See **McDonough, Katelyn**

See **Saper, Shelby**

See **Smith, Geoffrey**

Ross, Douglas (Albion Environmental)

See **Wall, Bridget**

Roulette, Bill (Applied Archaeological Research)

See **Pattee, Donald**

Rovanpera, Jen (Bureau of Land Management)

Diachronic Use of Upland Springs in Northwestern Nevada

General Session 1: Interpreting Toolstone Conveyance, Site Location, and Land Use

Preliminary findings from limited test excavations at multiple upland springs in northwestern Nevada indicate emerging patterns in landscape use during the Mid- and Late-Holocene: the most intensive use of the springs occurred during the Late Holocene; this peak use coincides with an increase use of geophytes at these sites; and only the springs at the lower elevations experienced moderate use during the end of the Mid-Holocene.

Royle, Thomas (Simon Fraser University)

See **Lubinski, Patrick**

Saban, Chantal (University of Oregon)

Gavin, Daniel (University of Oregon)

Herring, Erin (University of Oregon)

Jenkins, Dennis (University of Oregon)

Late Glacial through Early Holocene Environments Inferred from Coprolite and Sediment Pollen Recovered from the Paisley Caves

Symposium 7: Multi-Disciplinary Investigation of Cultural and Ecological Assemblages at the Paisley Caves in the Chewaucan Basin, South-Central Oregon

The Paisley Cave archeological site in the northern Great Basin has provided a rich archaeological record from 13,000 to 6000 cal. yr BP, including abundant mammalian coprolites preserved in a well-dated stratigraphy. Here we analyze and contrast pollen from within coprolites and pollen in associated sediments to examine vegetation history and assess whether coprolite pollen provides unique information with respect to the coprolite producer, such as the use of specific habitats, foods, or water sources. We found that the dissimilarity of pollen assemblages between coprolites and associated sediments was greater than the serial dissimilarity between stratigraphically adjacent samples within either group. Serial dissimilarity within types was not greater for coprolites than sediments, as would be expected if there were unique pollen signatures derived from the short period (1-2 days) represented by each coprolite. Compared to sediment pollen assemblages, the coprolites had higher abundances of lighter pollen types and some individual samples were high in wetland taxa (especially *Typha*). Our results are consistent with coprolite pollen representing short time periods collected as a mammal moves on the landscape, whereas sediment pollen reflects longer time periods and more regional vegetation indicators.

Saper, Shelby (University of Nevada Reno)

Rosencrance, Richard (University of Nevada Reno)

McDonough, Katelyn (University of Oregon)

Source Analysis of Cascade Points from the Connley Caves, Oregon (35LK50)

General Session 1: Interpreting Toolstone Conveyance, Site Location, and Land Use

Researchers use X-ray fluorescence (XRF) to source lithic tools and their associated byproducts made on obsidian and fine-grained volcanic toolstone. The results of such studies can be used to reconstruct lithic conveyance patterns, which in turn can tell us about hunter-gatherer mobility, territoriality, and/or exchange. In this study, I report XRF data for nearly 100 Cascade projectile points from the Connley Caves (35LK50) in central Oregon. The results provide new insights into early and middle Holocene lithic conveyance in the northern Great Basin.

Scher, Naomi (Far Western Anthropological Research Group)

See **Carney, Molly**

Schroeder, David (Chronicle Heritage)

See **Jonassen, Alexandra**

Schwartz, Maisie (Logan Simpson)

Hi, Barbie: A Celebration of the Historical Women of the Greenlink West Project

General Session 2: The Archaeology of the Recent Past and Present

The Greenlink West Project spans thousands of acres between Reno and Las Vegas, Nevada. The survey area contains a unique cross section of archaeology dating from the Paleoarchaic period through the late twentieth century. Notably, the area's past, both recent and ancient, is woven by a rich tapestry of the experiences of women. Documented archaeological sites associated with women in the project area include rock written yonic symbols and a divorce ranch. Additionally, archival research on the survey area revealed colorful stories of female mining moguls, revolutionary suffragettes, and brave sex workers within the communities crossed by the project. This presentation tells the stories of the historical women of the Greenlink West Project, emphasizing the importance of incorporating their narratives into culture histories in archaeological reports so they are not lost as we work to protect our shared past.

Searcy, Michael (Brigham Young University)

Ure, Scott (Brigham Young University)

Yoder, David (Weber State University)

Late Fremont Occupation in Utah Valley: Evidence of Lacustrine and Riverine Life at the Hinckley Mounds

Symposium 6: Recent Research in Fremont Studies

While Fremont habitation sites are commonly located near water sources, some who practiced the Fremont cultural tradition in the northern macroregion settled near the largest fresh-water lake in the area. Utah Lake, and its associated valley, sustained Fremont people who exploited the abundant riverine and lacustrine resources such as fish, waterfowl, and mineral-rich arable land. This paper reviews some of these distinctive resources, as well as some challenges faced by those living at the Hinckley Mounds site during the Late Fremont period (AD 900–1300) in Utah Valley.

Simons, Ellyse (Camp William Utah National Guard)

See **Trammell, Joshua**

Simper, Heidi (University of Utah)

See **Pavlik, Bruce**

Simpson, Lucinda (Far Western Anthropological Research Group)

See **Ziogas, Eleni**

Skinner, Sarah (Green Mountain National Forest)

See **Davis, Loren**

Smith, Geoffrey (University of Nevada Reno)

Rosencrance, Richard (University of Nevada Reno)

McDonough, Katelyn (University of Oregon)

Redating the Last Supper Cave Cultural Features: Moving Towards an Understanding of When and How People Used the High Rock Country of Northwestern Nevada

Symposium 4: In His Footsteps: Tom Connolly's Legacy in Oregon Archaeology

Last Supper Cave (LSC) is located in the rugged High Rock Country of northwestern Nevada. Thomas Layton excavated the cave in 1973-74 under the auspices of the Nevada State Museum. He recovered a diverse assemblage of lithic, fiber, and wooden objects including a number of Western Stemmed Tradition (WST) points. Radiocarbon dates and time-sensitive projectile points suggested that people used the cave for much of the Holocene. Despite the assemblage's potential to address a range of questions, it was never fully analyzed. Beginning in 2008, researchers from the University of Nevada, Reno and Nevada State Museum began reanalyzing the collection—work that continues today in collaboration with University of Oregon Museum of Natural and Cultural History staff. Here, we present new radiocarbon dates from cultural features that provide a better understanding of when people visited the site.

Smith, Geoffrey (University of Nevada Reno)

Stueber, Daniel (Thunderstones Lithic Consulting)

Bradley, Erica (University of Nevada Reno)

Rosencrance, Richard (University of Nevada Reno)

Duke, Daron (Far Western Anthropological Research Group)

The Form and Function of Oversized Parman Stemmed Points of the Western Stemmed Tradition
Symposium 9: Tradition, Teaching, and Technology: Papers in Honor of Dan Stueber

Most of the complete Western Stemmed Tradition points that archaeologists encounter are heavily reworked, with blades often smaller than their stems. Because flintknapping is a subtractive process, reworking tends to obscure points' initial forms, which can provide clues about the tools' optimal design characteristics and, in turn, the tasks for which people used them. We describe a series of stemmed points from the Intermountain West that, while unusual because of their large sizes, fit comfortably within the Parman stemmed point type. They provide important information about how people designed, made, and used large Parman

stemmed points early in their use-lives—information that is generally not available from heavily resharpened points at the end of their use-lives.

Smith, Geoffrey (University of Nevada Reno)

See **Jenkins, Dennis**

See **Mueller, Richard**

See **Newell, Zachary**

See **Rosencrance, Richard**

Sobel, Sonya (Washington State University)

See **Kingrey, Haden**

See **Thompson, Jordan**

Stevens, Nathan (California State University Sacramento)

A Wave from the Desert: Tracking Arrow Technology and Style from the Great Basin to California and Back Again

Symposium 8: Exploring the Intersections of Human Ecology and Culture History in the Great Basin

Available evidence suggests the bow and arrow entered California from the north or northeast but the data points are few and far between. This makes it difficult to judge the timing of its introduction in various regions and obscures the relationships between style and function. Rather than using typological or culture-historical categories to discern this technological replacement, this study plots salient artifact attributes from a large sample of projectile points from northern California and the northwestern Great Basin through continuous time to provide more detail on the timing of the spread of this important prehistoric technology.

Stevens, Nathan (California State University Sacramento)

See **Davis, Loren**

Stone, Samantha (Oregon State University)

Davis, Loren (Oregon State University)

Bean, Daniel (Oregon State University)

Nyers, Alex (Northwest Archaeometrics)

Haskett in the Columbia River Basin? A Preliminary Digital Comparison

Symposium 9: Tradition, Teaching, and Technology: Papers in Honor of Dan Stueber

The Haskett lanceolate projectile point is a hallmark of the Western Stemmed Tradition in the Great Basin, where it appears in the highest frequency of any place in the Americas. While the

Haskett type site is also located outside of the Great Basin in the Snake River Plain region of southern Idaho, the frequency of lanceolate projectile points attributed to the Haskett point type diminishes greatly northward into the Columbia River basin. Notably, Haskett points have been described from the Sentinel Gap site in southeastern Washington and large lanceolate point fragments were recovered from the Cooper's Ferry site in western Idaho. Are these two examples from Columbia River basin sites truly representative of the Haskett point type? To answer this, we compare the timing, morphometric design, and modes of manufacture associated with the Sentinel Gap and Cooper's Ferry point specimens to well-established Haskett points recovered at the Haskett type site and the Great Salt Lake Desert region of Utah.

Stueber, Daniel (Thunderstones Lithic Consulting)

Paisley Caves: Stone Tools and Debitage

Symposium 7: Multi-Disciplinary Investigation of Cultural and Ecological Assemblages at the Paisley Caves in the Chewaucan Basin, South-Central Oregon

The >14,000-year use of the Paisley Caves provides a unique view of stone tool production and maintenance activities. The tool and debitage analysis from the Paisley Caves were performed using the Lithic Attribute Analysis System. This type of analysis provides detailed information on bifacial and core reductions and maintenance as well as the presence of other, unfamiliar, and rarely recognized tools. This presentation will offer a synopsis of evidence of short-term habitations over the long period use of the caves, i.e., 14,000 plus years in 15 minutes.

Stueber, Daniel (Thunderstones Lithic Consulting)

Reflections

Symposium 9: Tradition, Teaching, and Technology: Papers in Honor of Dan Stueber

Mr. Stueber reflects on the papers in his honor.

Stueber, Daniel (Thunderstones Lithic Consulting)

See **Bradley, Erica**

See **Davis, Loren**

See **Duke, Daron**

See **Endzweig, Pamela**

See **Smith, Geoffrey**

Teeman, Diane (Burns Paiute Tribe)

Archaeology's Self-Reflexive Turn: Decolonizing Archaeology Toward a More Ethically Sound Future

Plenary Session: Beyond Boundaries

Archaeology is built on the premise that an ontological break between the present and the past occurred by colonialist intrusion. This perceived break marks the difference between cultural anthropology and archaeology. This premise has also assumed that living Indigenous North American peoples do not have strong affinities to their pasts. Additionally, ideological assertions associated with colonialism such as the doctrine of discovery, manifest destiny, and the White man's burden effectively culminated in Indigenous North American peoples' loss of control over tribal spaces, tribal children, and our own tribal histories. Another legacy of colonialism is the inherited authority of the archaeologist to control both the physical elements of our pasts, and near exclusive right to control the narratives built around the physical elements of our histories. Today, we understand the inherent ethnocentric faults such premises and legacies hold, and decolonization of our discipline is well under way. Colonialism and racial prejudice have resulted in legislated power and control inequalities that serve to favor the efforts of Western researchers over the ethical assertions of tribal peoples. Tribal Ancestors should not continue to be plundered as the inheritors of the spoils of colonialism invade our homelands to mine tribal items for theoretical conjecture. Performing cross-culturally ethical research is a must if archaeology is to continue in North America and beyond.

Teeman, Diane (Burns Paiute Tribe)

Cross Cultural Opportunities for Dialogue and Learning: Sharing Values of Lithics Among and Between Northern Paiute and Western Archaeological Traditions

Symposium 9: Tradition, Teaching, and Technology: Papers in Honor of Dan Stueber

Over the course of the last several summers, our Burns Paiute Archaeological Technicians and Youth Opportunity Program high school students have had the pleasure of hosting lithics workshops instructed by Dan Stueber. Dan's skill in flintknapping is rivaled only by the ease of which he shares his knowledge with those of various ages and skill levels. Our Northern Paiute ideology tells of the relationship between our people and the stone we experience all around us in our daily lives. Dan provided instruction and insight into how archaeological traditions see that same stone, while also teaching students his methods for flintknapping as an Elder of archaeology and expert in his craft. Our community is enriched by Dan's efforts to help our people gain greater understanding of lithic technology through the lens of archaeology. This exchange has also facilitated the awakening of our technological relationships with lithics rendered mostly dormant colonialism over the last century. We look forward to many more summers together.

Terry, Rebecca (Oregon State University)

Davis, Edward (University of Oregon)

Emery-Wetherell, Meaghan (University of Arizona)

The Small Mammals of the Paisley Caves: Tracking Diversity and Compositional Turnover Against a Backdrop of Environmental and Cultural Change

Symposium 7: Multi-Disciplinary Investigation of Cultural and Ecological Assemblages at the Paisley Caves in the Chewaucan Basin, South-Central Oregon

The terminal Pleistocene captures the first intersection of climate change and human impacts on wild ecosystems in North America, resulting in the well-known demise of mammalian megafauna and a cascade of continent-wide ecological transformations. Less well known is how the smallest mammals – key to bottom-up ecosystem function – were affected across this tumultuous time. To fill this gap, we identified ~1,800 specimens representing 32 species (24 genera) of small mammals across a temporal window spanning the last ~16,000 years within Cave 5 of the Paisley Caves complex. We found that sample-size standardized species richness remained relatively constant over time, however functional diversity declined across the Pleistocene-Holocene transition then rebounded in the late Holocene. Specifically, at ~11,500 ya, assemblages shifted from dominance by Cricetid and Heteromyid mice to dominance by Lagomorphs. There is also turnover within Lagomorphs; early assemblages contain pika (*Ochotona princeps*) and pygmy rabbits (*Brachylagus idahoensis*) while later assemblages are dominated by cottontails (*Sylvilagus* sp.) and finally jackrabbits (*Lepus* sp.). Woodrats (*Neotoma*), voles (Arvicolinae), squirrels (Scuridae), and pocket gophers (*Thomomys*) were also characterized by turnover in the dominant species over time. Particularly noteworthy is the high proportion of marmots (*Marmota flaviventris*) between 11,200-11,800 ya, and the first appearance of xeric-adapted kangaroo mice (*Microdipodops* sp.) ~2,900 ya. This suggests a mosaic of desert habitat types emerged at this time due to episodes of intense and prolonged drought. Future analyses will assess the influence of people and megafauna on small mammal diversity dynamics against this backdrop of climate-driven environmental change.

Terry, Rebecca (Oregon State University)

See **Davis, Edward**

Thomas, David (American Museum of Natural History)

Survivance and the Deep Great Basin Past

Keynote Lecture

Recent Great Basin archaeology demonstrates a surprising survivance that invites us to revisit conventional perceptions of abandonment and migration. Although Paleoindians defined the Lahontan Basin as a virtually empty sacred space, Lovelock communities established nearly-sedentary lacustrine settlements that lasted until the Late Holocene Dry Period (3100–1800 cal BP). Most archaeological sites south of 40° N latitude were abandoned during the driest Great

Basin climate of the last 6000 years. Despite the megadrought, the seemingly disparate Paleoindian, Lovelock culture and Numic populations maintained genetic relationships in the Lahontan Basin for more than ten millennia. Other resilient foragers in the central Basin refused to abandon their homeland, establishing summertime alpine residences that took advantage of glacier-fed mountain springs with cooler alpine temperatures and greater moisture retention elevation. Western Shoshone scholars Ned Blackhawk and Steven Crum stress the continuing survivance of indigenous Nevadans who, despite Euro-American intrusions, maintained their compelling sense of place. They adapted traditional seasonal economies to the necessities of wage labor, many rejecting reservation life to remain in familiar ritualized landscapes and resist the ways of state formation to this day.

Thomas, David (American Museum of Natural History)

Millar, Constance (U.S. Forest Service)

People and Pinyon Progressing across the Basin: Coincidence or Causality?

Symposium 8: Exploring the Intersections of Human Ecology and Culture History in the Great Basin

Singleleaf pinyon pine and post-Paleoindian people simultaneously migrated across Great Basin landscapes during the Holocene. The most widely-accepted scenario holds that as the Holocene climatic conditions became favorable, pinyon migrated northward from a Late Pleistocene refugia in the southern Great Basin. We project this pathway and chronology using an updated database of 68 radiocarbon-dated macrofossils obtained from packrat middens and rockshelters (calibrated using the IntCal20 curve). We augment the northward progression model with a second hypothesis that postulates two additional Late Pleistocene pinyon refugia at higher latitudes, providing additional sources of emigration as climates ameliorated. We compare and contrast these paleoecological hypotheses against 99 first-occupation estimates for relevant archaeological sites in the Great Basin that date from the Middle Holocene through the onset of the Late Holocene Dry Period (7000-2800 cal BP). The results are informative.

Thompson, Jordan (Washington State University)

Sobel, Sonya (Washington State University)

Connolly, Thomas (University of Oregon)

Raw Material Sourcing of Northern Great Basin Smoking Pipes

Poster Session 2: Recent Research in Great Basin Anthropology II

Social objects are integral to human culture, yet archaeological perspectives have often limited their significance to economic and trade-related information within ritual contexts. This study evaluates the potential to convey crucial insights into traditional cultural spaces, social dynamics, and enduring cultural practices of social objects by focusing on stone smoking pipes and the raw materials in which they are made from. Through a novel two-phase project, we explore the use of portable X-ray fluorescence (pXRF) analysis on tuff samples collected from

monumental landforms in the northern Great Basin, to make comparison with archaeological samples of stone smoking pipes from private or archival collections housed at the Museum of Natural and Cultural History in Eugene, Oregon. This poster presents the preliminary results of pXRF geochemical analysis of Northern Great Basin tuff samples. By employing pXRF for geochemical characterization and comparing against archaeological samples, we can establish the provenience of these social objects, tying their origins to significant places on the landscape and tracing their dispersal. Our research not only pioneers the application of pXRF for coarse-grain volcanic analysis but also underscores the non-destructive nature of our methodology and showcases the untapped potential non-contextualized artifacts can contribute to cultural heritage investigations.

Trammell, Joshua (Logan Simpson)

Ermish, Brendan (Logan Simpson)

Simons, Ellyse (Camp William Utah National Guard)

How Attractive Are Those Rocks? Application of a Gravity Model to Predict Toolstone Procurement and Transport

Poster Session 2: Recent Research in Great Basin Anthropology II

Understanding patterns of toolstone procurement is fundamental to the study of lithic technological organization (Andrefsky 1994; Elston 1992). The numerous factors that influenced decisions of toolstone procurement are divided into two broad categories: 1) ‘extrinsic cost factors’ (e.g., quality, morphology, size, abundance, etc.), and 2) ‘human cost factors’ (e.g., direction of travel, time availability, social restrictions, cultural boundaries, etc.) (Elston 1992; Wilson 2007). This study explores the presence of different toolstone materials at 225 prehistoric sites in Sarcobatus Flat, southwestern Nevada. Two different toolstone sources, over 40 kilometers distant, provide nearly all the lithic materials at these sites. The extrinsic costs of these two sources are quantified to generate an “attractiveness” score/value. These values are used in a gravity model, derived from economics, to predict the material composition of lithic debitage at the sites, and define the geographic extent of their use. The model provides a quantitative, cost-benefit analysis of the acquisition and transport of different toolstone materials. Provenience studies have improved our understanding of which toolstone sources were targeted in the past. However, these studies are limited in their ability to explain why different sources were selected. Analysis of the specific attributes of toolstone sources and application of a gravity model potentially provides information about why different sources were selected. Deviations from predictions provide insight into some of the ‘human factors’ that may have influenced toolstone selection, such as direction of travel to the site, time constraints, cultural boundaries, inter-group social connections, and acquisition of important food resources.

Tsosie, Seth (Dine Nation)

See **Hill, Amanda**

Tushingam, Shannon (California Academy of Science)

See **Carney, Molly**

Ure, Scott (Brigham Young University)

Bryce, Joseph (WestLand Engineering and Environmental Services)

Touch of Red: Exploring the Significance of Fremont Red-on-Gray Pottery

Symposium 6: Recent Research in Fremont Studies

Painted ceramic sherds found at Fremont sites mainly consist of Snake Valley Black-on-gray or Ivie Creek Black-on-white types, originating from central and southern Utah. While there are other black-on-gray variants, they are infrequent. Fremont Red-on-gray pottery stands out as a lesser-known painted type mentioned in early Fremont ceramic classifications, yet it has received limited attention. Recent excavations across various sites, primarily in the northern Fremont macro region, have yielded numerous new red-on-gray sherds, offering fresh insights. This paper presents our observations and analysis of Fremont Red-on-gray pottery. Our research indicates that, in certain instances, Fremont potters deviated significantly from the painting traditions found in the southern macro regions. We explore several plausible explanations for this deviation and conclude that Fremont Red-on-gray pottery may represent an active expression of social identity that diverges from the prevailing social norms and structures at the heart of the Fremont ceramic production and exchange in the Parowan Valley.

Ure, Scott (Brigham Young University)

See **Searcy, Michael**

Walen, Kady (University of Nevada Reno)

Bradley, Erica (University of Nevada Reno)

Rocks are Sometimes Heavy: Applying the Field Processing Model to Bifaces in Hawksy Walksy Valley, Oregon

Poster Session 2: Recent Research in Great Basin Anthropology II

Over 20 years ago, Beck and colleagues (2002) adapted the field processing model (FPM) to biface reduction and transportation. They posited that the further a residential base is from a toolstone source, the further the reduction process should proceed at the quarry. This should leave an archaeological signature of predominantly early stage bifaces in nearby residential sites, and late stage bifaces in distant residential sites. While several subsequent studies have supported their hypothesis, the biface FPM has never been examined using a series of sites with increasing distance from a source, in the toolstone rich northern Great Basin, or using geochemical source attributions. We use a large dataset of geochemically sourced obsidian bifaces from several Western Stemmed Tradition sites in Hawksy Walksy Valley, Oregon to assess whether the FPM explains biface reduction strategies in the northern Great Basin.

Wall, Bridget (Far Western Anthropological Research Group)

Ross, Douglas (Albion Environmental)

Fillingame, Esther (Lone Pine Paiute Shoshone Tribe)

Complexities in Recognizing Historic-Period Indigenous Settlements

Symposium 2: A 6,500 Year Record of Indigenous Occupation and Environmental Change at Patsiata (Owens Lake)

Historic-era indigenous settlements are frequently overlooked by archaeologists as we persist in contributing to the false dichotomy between “precontact” and “historic” periods. Archaeological site records, artifact catalogs, and report text nearly always differentiate the two eras based on arbitrary dates, overlooking the persistence of indigenous populations into so-called historic times. On the ground, this ethnocentric separation results in inaccurate characterizations of archaeological sites and the erasure of indigenous peoples on the landscape. Data from an archaeological site near an important regional spring south of Olancho provides an illustrative example. This complex deposit, including structural, domestic, and personal artifacts, was originally attributed to multiple episodes of roadside dumping by local residents between 1920 and 1960. A multidisciplinary collaborative team, including tribal consultants, ethnohistorians, and archaeologists, however, determined that this complex deposit represented the settlement of Panamint Shoshone leader George Gregory. Here, we combine archaeological, ethnographic, and archival data to develop a more well-rounded understanding of this important community.

Wall, Bridget (Far Western Anthropological Research Group)

See **Hill, Amanda**

See **Ziogas, Eleni**

Walzer, Mariah (Utah State University)

Finley, Judson (Utah State University)

Robinson, Erick (Native Environment Solutions)

DeRose, R. Justin (Utah State University)

Fire and the Fremont at Cub Creek, Dinosaur National Monument, Utah

Poster Session 1: Recent Research in Great Basin Anthropology I

While documented in ethnography and traditional ecological knowledge, Indigenous burning practices are rarely recognized in the archaeological record of the Desert West. A recent study from Utah’s Fish Lake Plateau demonstrated through sedimentological, radiocarbon, and climate records that increased human occupation, measured by summed radiocarbon probability distributions, corresponds with an increase in charcoal accumulation and non-arboreal pollen during the Fremont period. The Fish Lake work suggests that Fremont people were purposefully igniting fires to shape their landscape. This presentation offers one local

example to complement the regional signal exhibited at Fish Lake. A Fremont community at Cub Creek in Dinosaur National Monument, dated to AD 300–1300, shows an evolution from an early upland occupation with light agricultural investment to a lowland pithouse village with intensive maize production. We analyze arroyo paleofire records from one stratigraphic locality to understand the relationship between Cub Creek occupants, fire, and the landscape. Analysis of size, shape, and concentration of charcoal samples inform on fire intensity and fuel types, which are compared to expectations for a human-driven fire regime as well as a precipitation reconstruction to evaluate the role of climate. Results indicate a change in fuel types with the beginning of the Fremont and a marked increase in charcoal concentrations after the Fremont period, suggesting the Fremont did impact the local fire regime.

Watkins, Christopher (North Wind Resource Consulting)

Merrill, Alyssa (Brigham Young University)

Watkins, Maya (Brigham Young University)

Fremont Figures: A Systematic Approach to Fremont Anthropomorphic Rock Art
Symposium 6: Recent Research in Fremont Studies

Anthropomorphic rock art is a distinctive, often striking, aspect of Fremont material culture. We propose a systematic, design element-oriented analysis of Fremont anthropomorphic rock art. We generally follow Wallace’s recent re-seriation of the Hohokam Red-on-buff ceramic sequence by defining a comprehensive inventory of design elements, describing the elements in a coding packet, identifying all the design elements in a sample of objects, compiling the information into a database, exploring the database with pattern-recognition statistics, and interpreting the patterns. We include design elements previously identified in the literature and have identified additional elements based on a review of several rock art panels. We have attempted to be comprehensive but expect additional design elements will be added to the inventory as part of on-going research. The inventory includes design elements related to head and body morphology, appendages, body positioning, facial features, headdresses, clothing, jewelry, and held objects. Design elements have been assembled in a coding packet. Each element has been assigned a code to be used in the database, a qualitative definition, and visual examples as appropriate. We have coded an initial sample of anthropomorphs and addressed some preliminary research questions. Investigations will continue as the database grows.

Watkins, Maya (Brigham Young University)

See **Watkins, Christopher**

Wilks, Stefania (University of Utah)

Louderback, Lisbeth (University of Utah)

Starch Granule Analysis in the Intermountain West: Best Practices and New Directions

General Session 3: Traditional Foodways and Technology

Starch granule residue analysis is an important tool for linking archaeological records to human-plant interactions. It has been instrumental in reconstructing human dietary patterns through time, including the domestication of wheat in the Levant region, maize in Central America, and rice and millet in China. In the Great Basin, biscuitroot (*Lomatium* spp.) starch granules extracted from archaeological bedrock features near Warner Valley, Oregon support ethnographic accounts of seasonal geophyte exploitation in upland settings. Archaeological starch residues also reveal novel plant resource use such as the Four-Corners Potato (*Solanum jamesii*) at North Creek Shelter on the Colorado Plateau. Starch granules hold obvious potential to illuminate human foraging behavior, yet, standardized methodology and protocols remain underdeveloped. Despite its popularity, starch analysis is still considered a fairly “new technique” in the archaeological community. The identification of archaeological starches relies on published reference collections generated from modern plant populations with replicable quantitative analyses. The Archaeobotany Lab at the Natural History Museum of Utah is at the forefront of establishing peer-reviewed best practices and standardized protocols in this dynamic field. In this presentation, we discuss our most recent work including a systematic study of modern starch reference material for seven major North American plant families, a published protocol for open-air feature sampling, and experimental study of starch granules on fire-crack rock.

Wilks, Stefania (University of Utah)

See **Pavlik, Bruce**

Wilson, Cynthia (University of California Berkeley)

See **Louderback, Lisbeth**

Wolberg, Alexandra (Utah State University)

Bowers, Anna (Shoshone-Bannock Tribes Heritage Tribal Office)

Buffalo's Little Brother Hill (10BT2303): A Late Holocene Bison Jump in Eastern Idaho

Symposium 1: From Channel Flakes to Bison Jumps: Current Archaeological Investigations in Southern Idaho

This study investigates whether Buffalo's Little Brother Hill (10BT2303) functioned as a bison jump using GIS analysis. To assess whether the site could have been utilized as a jump we examined the upland topography and conducted a least-cost-pathways analysis. These results indicate that three gaps or “funnels” in the basalt cliff are directly associated with a single drive lane, which would have guided bison from a milling basin to the northeast to the basalt cliff.

The drive lane is linked with nineteen rock cairns and two hunting blinds, similar to patterns seen in the Great Plains. AMS assays reveal that the jump was used at least twice during the late Holocene. The discovery of Buffalo's Little Brother Hill provides much needed insight into bison procurement in southeastern Idaho.

Wolberg, Alexandra (Utah State University)

Finley, Judson (Utah State University)

Robinson, Erick (Native Environment Solutions)

Did Arroyo Formation Impact the Occupation of Snake Rock Village, A Fremont Dryland Agricultural Community in Central Utah ca. AD 1000-1200?

Poster Session 1: Recent Research in Great Basin Anthropology I

Fremont farmers of the northern Colorado Plateau grew maize at the margins of cultivation in western North America. Like other Indigenous farmers throughout the American Southwest, Fremont farmers used bundled agricultural niches where alluvial floodplains were the largest available site for cultivation. But dryland floodplains are a risk to the sustainability of farming communities because the development of steep-sided arroyos lowers water tables rendering them unusable for growing maize. This study tests the relationship between the occupational timing of Snake Rock Village AD 1000–1200 and the formation of a major 4.5m deep arroyo. We present a high precision AMS radiocarbon chronology of the village occupation paired with an AMS radiocarbon and optically stimulated luminescence (OSL) reconstruction of the Ivie Creek floodplain 400m upstream from the site. The results of this study provide a direct test of arroyo formation as a cause for the abandonment of Fremont agriculture by AD 1300.

Wolfe, Allison (Boise State University)

Exploitation of Greater Sage-Grouse in the Bonneville Basin

General Session 3: Traditional Foodways and Technology

Despite extensive study of prehistoric human foraging behavior in the Bonneville basin, little is known about the human exploitation of birds, as many of these analyses focus on the hunting of mammalian prey and present models of diet breadth that are limited to artiodactyls and lagomorphs. This study uses the prey choice model of foraging theory to predict the extent and timing of the exploitation of Greater Sage-Grouse (*Centrocercus urophasianus*)—one of the most common avian prey species—in the basin from the terminal Pleistocene through the middle Holocene. Fluctuating environmental conditions largely regulated sage-grouse populations throughout this span. However, archaeological records demonstrate that in response to the depression of higher-ranked artiodactyl populations, humans incorporated sage-grouse into their diet in proportion to their availability on the landscape. This study underscores the utility of theoretically informed foraging models in the context of avian prey. Continued examination of Greater Sage-Grouse exploitation across the entirety of the Holocene within the Bonneville basin and beyond could provide insight on the long-term impacts of

human hunting pressure on this species, and may thus be useful to inform their modern management.

Wolfe, Allison (Boise State University)

See **Fisher, Jacob**

Wriston, Teresa (Desert Research Institute)

The Aerial Perspective: Using sUAS-mounted Sensors to Analyze Known Archaeological Sites in Lincoln County, Nevada

General Session 2: The Archaeology of the Recent Past and Present

Our team flew a variety of cameras/sensors attached to small Uncrewed Aerial Systems (sUAS; aka drones) over previously recorded archaeological sites within Lincoln County to test which configurations provide archaeologists with the best data. We used four different sUAS with a variety of weight limitations, mounting systems, and flight capabilities. In addition to standard visual cameras, we flew three different thermal cameras, Normalized Difference Vegetation Index (NDVI) sensors, and a five band multi-spectral camera. We structured these flights to test sensor capabilities in feature/artifact identification and characterization in sites of different age, type, and setting during a variety of soil moisture and temperature conditions. Using photogrammetry/Structure from Motion (SfM) techniques, we created both 2-D orthoimages and 3-D models of these sites. These are useful as detailed overview and feature maps, but also provide baseline data for future comparison to gauge erosive effects or the extent of any disturbance. In addition, the 3-D models can be used to pinpoint areas within sites that have already been disturbed, are in danger of erosion, or have potential for buried cultural materials. Through the same process, creation of virtual tours is possible that can be used to increase accessibility and facilitate communication during consultation and for public outreach activities.

Wriston, Teresa (Desert Research Institute)

The ROC (Rockshelters, Overhangs, and Caves) of Lincoln County, Nevada

General Session 1: Interpreting Toolstone Conveyance, Site Location, and Land Use

Great Basin rockshelters, overhangs, and caves (ROC) are renowned for their preservation of perishables such as bone, textile, and wood. Controlled excavation of these sites has been pivotal to the development of local and regional chronologies since they often provide sequential evidence of their use with stylistically distinct artifacts such as projectile points and ceramics coupled with dateable material. Given their importance to our understanding of Great Basin's cultural past, it is crucial to know where ROC sites are located, what is known about them, whether they have been excavated, looted, or disturbed, and if they have potential for intact subsurface remains. During this multi-year project, we reviewed around 7,000 previously recorded site records from throughout Lincoln County, Nevada to identify those associated with ROC, which totaled 298 sites. I reviewed the geologic and geomorphic contexts of each of

these sites along with any available temporal indicators and selected a sample for field visits and photogrammetric documentation. Our research showed that many of the ROC sites have been looted, many are misplotted or in need of site updates, and that many more have never been recorded. Despite these challenges, Lincoln County has many important ROC sites, a few of which are highlighted in this presentation.

Wriston, Teresa (Desert Research Institute)

Adams, Kenneth (Desert Research Institute)

Rhode, David (Desert Research Institute)

Estes, Mark (G2 Archaeology)

Landforms Matter: A Geoarchaeological Approach to Meadow Valley Wash Archaeology
General Session 1: Interpreting Toolstone Conveyance, Site Location, and Land Use

The Meadow Valley Wash drainage basin straddles the physiographic and cultural boundary between the Great Basin and Colorado Plateau and is one of the largest fluvial systems in eastern Nevada. The perennial waters that flow through the wash in an otherwise dry region would have undoubtedly always drawn people to its banks; however, initial record searches showed that archaeological evidence near the drainage is dominated by late Holocene age artifacts with little representation of earlier occupations. We suspected that the archaeological data was skewed by natural forces either scouring away or burying evidence of past people's most ancient use. Using an interdisciplinary approach to tackle this problem, we mapped landforms of nearly 10,000 acres adjacent to Meadow Valley Wash and a tributary drainage, described key stratigraphic sections, cored two wetlands, obtained radiocarbon ages from stratigraphic units ranging from 10,600 cal yrs BP to modern age, and inventoried 1,300 acres for archaeological evidence on various landforms. This geomorphic-informed inventory revealed artifacts ranging from terminal Pleistocene to historic age. Our study showed that landforms with old surfaces do indeed contain old sites and many of these are in the upper tributaries or within protected rockshelters. In fact, even along the flood prone bedrock constricted Rainbow Canyon, terraces were frequently several thousand years old with potential to contain evidence of changing cultural adaptations during the late Holocene.

Yoder, David (Weber State University)

The Behunin Figurines: An Archaeological Fraud of Miniature Proportions
Symposium 6: Recent Research in Fremont Studies

While most Fremont figurines are quite small, three exceptional sets of large figurines are thought to exist: the Pilling, Evans Mound, and Behunin caches. As the least well known, the Behunin figurines were part of the private collection of Homer Behunin (a resident of central Utah). Behunin's collection was photographed and reported by James Gunnerson in 1962 under the title 'Unusual Artifacts from Castle Valley' in the University of Utah's Anthropological

Papers series. In this talk I present an analysis that suggests the Behunin objects are not authentic Fremont figurines, but are instead modern forgeries.

Yoder, David (Weber State University)

See **Searcy, Michael**

Young, D. Craig (Far Western Anthropological Research Group)

A Dynamic Piedmont at Owens Lake and the Geoarchaeological Setting of the Olancha Project
Symposium 2: A 6,500 Year Record of Indigenous Occupation and Environmental Change at Patsiata (Owens Lake)

Like the stories of the people who have lived around Owens Lake for millennia, the archaeological record of the Olancha Project unfolds in a dynamic system of alluvial fans reaching basinward from the tectonic mosaic of the Eastern Sierra. As our understanding of the history of Owens Lake resolves, with regionally asynchronous highstands present into the middle Holocene, it provides a foundation for observing the deposition and basinward progradation of multi-lobed fans. This complex piedmont, from Ash Canyon to Haiwee Gap, not only preserves a sometimes deep and stratified archaeology but its landforms also give context to the spatial and temporal patterning of people's long interaction with the nearby lake. Here, I present the setting of our project area, highlighting the processes and timing – from mountain-front to lake shore, and from the Late Pleistocene to the winter of 2023 – that contribute to our on-going studies along the shores of Owens Lake.

Young, D. Craig (Far Western Anthropological Research Group)

Oviatt, Charles (Kansas State University)

Lake Currey and the Origins of the Old River Bed Delta Wetlands

Symposium 3: Tracking the Human Landscape of the Old River Bed Delta at the Pleistocene-Holocene Transition

On-going geoarchaeological investigations in the Great Salt Lake Desert of western Utah reveal a dynamic, post-Bonneville landscape that sees a dramatic cycle of Great Salt Lake and subsequent basinward expansion of an inland delta and associated wetland habitats. That lake cycle, referred to generally as the “Gilbert episode,” is stratigraphically well documented but has not been named formally. We propose abandoning “Gilbert” in favor of “Lake Currey.” We show that Lake Currey rose to its highest level about 12,700 cal yr BP, but, soon after, its demise opened a vast groundwater-supported, inland delta that, for a time, provided terrestrial habitats supporting extensive human occupation of the Old River Bed delta. The interplay of lacustrine and deltaic landforms, continually altered by recent process, provides highly resolved foundation for an array of archaeological studies, including site patterning, buried site potential, and the context of human trackways.

Young, D. Craig (Far Western Anthropological Research Group)

See **Duke, Daron**

See **Freund, Kyle**

See **Zeanah, David**

Zeanah, David (California State University Sacramento)

Codding, Brian (University of Utah)

Elston, Robert (Retired)

Young, D. Craig (Far Western Anthropological Research Group)

A Younger Dryas-Early Holocene Occupation in the Central Great Basin

Symposium 8: Exploring the Intersections of Human Ecology and Culture History in the Great Basin

An open-air Paleoindian site in Grass Valley, Nevada associated with a pre-Mazama paleosol contains Cougar Mountain, Parman, and Great Basin Concave Base Projectile Points. Radiocarbon assays on sediment organics and artiodactyl enamel combined with obsidian hydration readings suggest occupation occurred from the end of the Younger Dryas through the Early Holocene. The timing of occupation is significant for understanding hunter-gatherer adaptations to the formation and desiccation of local wetlands. Notably, these are the earliest radiocarbon dates found in the Central Great Basin, and among the few associated with Concave Base points anywhere in the province.

Ziogas, Eleni (Far Western Anthropological Research Group)

Simpson, Lucinda (Far Western Anthropological Research Group)

Wall, Bridget (Far Western Anthropological Research Group)

'The Finest and Most Beautiful Camp and Home': The Brief History of Millspaugh, 1899-1915

Poster Session 1: Recent Research in Great Basin Anthropology I

Little has been written about the small mining town of Millspaugh in Inyo County, California. The town was officially founded in 1901, but suffered fires and flash flooding, and it was largely abandoned by 1910. Although the few residents tried to revive the town, it never recovered, and was mostly dismantled by 1915. Only remnants of the original structures and refuse scatters remain. During a 2021 survey, archaeologists recorded ten discrete features, eight artifact concentrations, and more abundant dispersed artifacts. While published historical information on the town and mine was largely lacking, often restricted to a single paragraph, the authors turned to archival data to expand upon our understanding of this complex townsite. The Eastern California Museum in Independence houses an unpublished manuscript from 1955 written by Elizabeth Mecham, the daughter of the postmistress of Millspaugh. Her reminiscences from the 1950s provide invaluable context and framework for evaluating this “finest and most beautiful camp and home.”