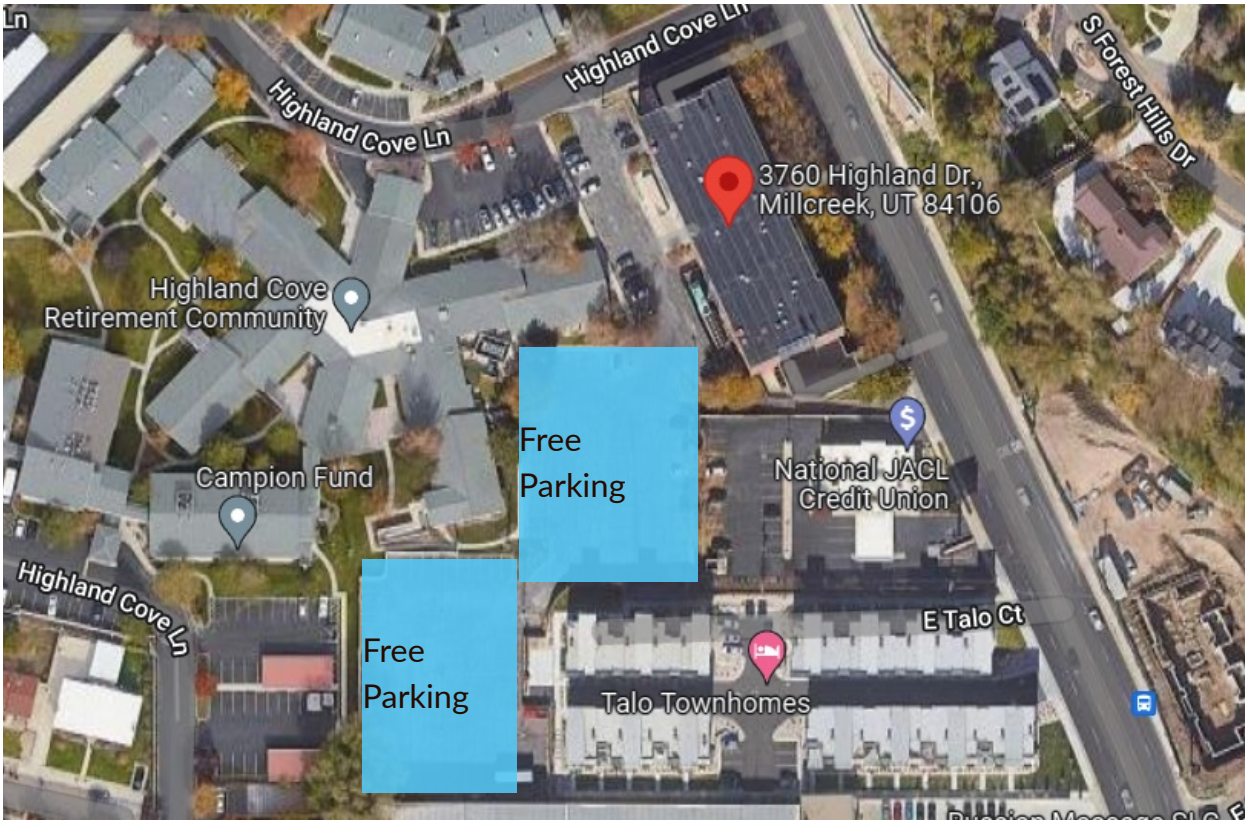
Utah Professional
Archaeological Council

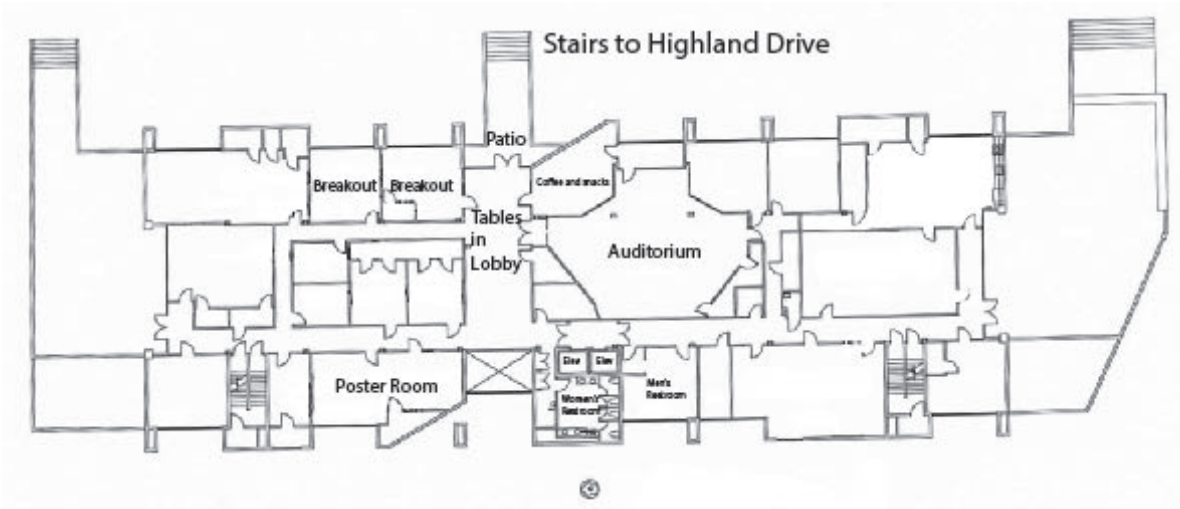
WINTER MEETING
MARCH 9 - 11, 2023

HIGHLAND AUDITORIUM, SALT LAKE CITY

Parking Map



Venue Map



Utah Professional Archaeological Council

Welcome from the Executive Committee

Greetings!

On behalf of the UPAC Executive Committee, I would like to personally welcome each one of you to the 2023 UPAC meeting. Thank you for coming!

This year's meeting has an incredible keynote speaker, a diverse roster of presentations, a job fair, and lightning round presentations from consultants and agencies. The Executive Committee has been dedicated to making this meeting one that is productive, relevant, and that meets the needs of our professional community.

I have been a member of UPAC since I graduated from graduate school, long before I moved to Utah. I have always encouraged my colleagues to be members, to join committees, and to run for elected office, as UPAC is only as good as its members. Over the past year, the Executive Committee has sent out a member survey, held a happy hour in Salt Lake City, helped to form a Tribal Relations ad-hoc committee, met with students at the University of Utah, staffed a table at the 2022 Governor's Native American Summit, revamped the website, and renewed our social media presence. We have been busy, and we hope you have noticed. We are always looking for your ideas and welcome your feedback.

No matter where you are in your career, whether you are a student or are working at an agency, a museum, or a consulting firm, we are thrilled that you are here. We hope that you will engage with your colleagues and friends over the course of the meeting and get re-energized and inspired for the coming year.

With gratitude,
Suzy Eskenazi

UPAC President - Suzy Eskenazi
Vice President of Membership and Ethics - Tina Hart
Treasurer - Seth Button
Journal Editor - Tim Riley
Vice President of Government Affairs and Research - Jules Kramer
Secretary - Lisa Krussow
Media Coordinator - Maisie Schwartz
Curriculum Director/USAS Liason - Michelle Knoll
Webmaster - Elizabeth Hora

Utah Professional Archaeological Council

Winter Meeting Schedule

FRIDAY, MARCH 10

8:30 AM — **Coffee**
Coffee, tea, and other light refreshment will be provided.

9:00 AM — **Welcome**
Introductory remarks to present the agenda and introduce our keynote speaker.

9:15AM — **Keynote Speaker: Darren Parry**
Former Chairman of the Northwestern Band of the Shoshone Nation and author of "The Bear River Massacre: A Shoshoni History."

10:00 AM — **Break**
Poster room opens.

10:15 AM — **Presentations and Posters**
Poster room is open, and the auditorium will host speakers.

Noon — **Lunch**

1:30 PM — **Facilitated CRM and Agency Professional Networking**
Focused on introducing our organizations and work to potential employees and collaborators, UPAC will host a lightening round with CRM companies and agencies, tables for networking, and a field tech round table. A must-attend event if you are hiring or want to be hired.

4:00 PM — **Social Event at A Bar Named Sue**

SATURDAY, MARCH 11

8:30 AM — **Coffee**
Coffee, tea, and other light refreshment will be provided.

9:00 AM — **Welcome**
Introductory remarks to present the agenda and introduce the morning's events.

9:15 AM — **Presentations and Posters**
Poster room is open, and the auditorium will host speakers.

10:15 AM — **Break**

10:30 AM — **Presentations and Posters**
Poster room is open, and the auditorium will host speakers.

11:30 AM — **Tour of SHPO Workshops and Lab**
Follow the signs to the first floor where SHPO staff have artifacts to show and tales to tell!

Noon — **Meet for Tours, Lunch, and Conference Close**

Utah Professional Archaeological Council

Business Meeting Agenda

Welcome and Call to Order

Motion to Approve 2022 Minutes

UPAC Board Updates

- President: Suzy Eskenazi
- VP of Membership and Ethics - Tina Hart
- Treasurer - Seth Button
- Journal Editor - Tim Riley
- VP of Government Affairs and Research - Jules Kramer
- Secretary - Lisa Krussow
- Media Coordinator - Maisie Schwartz
- Curriculum Director/ USAS Liaison - Michelle Knoll
-Webmaster - Elizabeth Hora

UPAC Officer Elections

- Thank outgoing officers
- Announce open positions and candidates
- Open floor to new nominations

Committee Updates

- Tribal Relations ad-hoc committee
- 50 year rule ad-hoc committee

UPAC Awards

- 2022 Fellow, Doug McFadden
- Memorial, Confederated Tribes of the Goshute Reservation Chairman Rupert Steele
- Call for nominations for 2023 UPAC Fellow(s)

Journal Printing

- Discussion of journal printing costs and need
- Motion to produce electronic-only version

New Business

- Members may bring to the floor any new UPAC business for discussion

Meeting Adjourn

Utah Professional Archaeological Council

Keynote Speaker

March 10
at 9:15a

Darren Parry

History, Healing and Re-story-ation

Darren Parry is the author of The Bear River Massacre: A Shoshone History and is the 2023 Spring Practitioner-In-Residence at Utah State University. His lecture, “History, Healing, and Restory-ation” will explore how the Bear River Massacre was a defining moment for the Northwestern Band of Shoshone Nation, and how the massacre did not trap the Shoshone people in death but offered them a chance of rebirth. Parry states “My message is one of hope and of peace in the face of violence. What emerges from the margins of these stories is a poignant reminder of the resilience of people.”

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Paper Session

Friday, March 10

10:15 - 10:30
Bears Ears Site Preservation Project: Partnership in the Face of Visitor Impacts
Shanna Diederichs, Woods Canyon Archaeological Consultants

10:30 - 10:45
Running the Corn. Puebloan Agricultural and Ritual Landscape Manipulation in the Northern San Juan Region
Winston Hurst and Fred Nials, ScabKnuckle Archaeology

10:45 - 11:00
Fremont Figurines: You've Got Questions, I've Got Answers
David Yoder, Weber State University

11:00 - 11:15
Floodplain Stability Controls the Growth Potential and Resilience of Indigenous Northern Colorado Plateau Agricultural Communities: A Case Study from, Dinosaur National Monument
Judson Byrd Finley, Erick Robinson, and R. Justin DeRose, Utah State University

11:15 - 11:30
Remote Sensing and Geophysics Across Utah and the West
Ethan P. Ryan, Cannon Heritage Consultants, Inc.

11:30 - 11:45
An Update on Archaeological Site Preservation Efforts in Washington County County
Todd Prince, Greg Woodall, Independent Archaeologists

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Paper Session

Saturday, March 11

9:00 - 9:15
The Millennium "Trailer Menace": Cultural Resource Surveys of Proposed Great American Outdoors Act Projects on the Dixie National Forest
Laura Bruns,USFS Dixie National Forest

9:15 - 9:30
Juke Box Cave, 42TO20: Summary of Results from a Small Excavation
Ronald J. Rood, Metcalf Archaeological Consultants, Inc.

9:30 - 9:45
Managing Unprovenienced Archaeological Materials: An Update on the Bureau of Land Management's Cerberus Collection
Diana Barg, Bureau of Land Management

9:45 - 10:00
Trash or Treasure: Exploring the Origins of Artifacts Discovered at Salt Lake City's Denver & Rio Grande Western Railroad Maintenance Facility (42SL718)
Tiffany Tuttle Collins and Christine K. Michalczuk, SWCA Environmental Consultants

10:00 - 10:15
Collaborative Land Management Planning and Implications for CRM Consulting in Utah
Jason Chuipka, Woods Canyon Archaeological Consultants, Inc.

10:15 - 10:30
Highways and Byways: Documenting Historic Highways in Utah
Liz Robinson, Utah Department of Transportation

10:30 - 10:45
Break

10:45 - 11:00
Why Transportation Features within R. S. 2477 ROW Matter
Kristopher R. Carambelas, Public Lands Policy Coordinating Office

11:00 - 11:15
The Enduring Impact of Archaeology and Oral History in Education
Samantha Kirkley, Project Archaeology

Utah Professional Archaeological Council

Paper Session

Saturday, March 11

11:15 - 11:30
Rock Imagery at Smith Preserve Project
Sarah P Stewart, Utah SHPO

11:30 - 11:45
A comparison of random forest machine learning and point process geospatial analyses as guides for quantitative interpretation of archaeological site distributions.
L Brock James, The Pennsylvania State University

11:45 - noon
High-grading the documentary record to help interpret Utah's mining landscapes
Seth Button, Utah Division of Oil, Gas and Mining

Noon
SHPO Lab tour

Paper Abstracts

Diana Barg, Bureau of Land Management

Managing Unprovenienced Archaeological Materials: An Update on the Bureau of Land Management's Cerberus Collection

The illegal removal of archaeological artifacts from public lands is a large-scale issue. Federal law enforcement regularly recovers looted artifacts and works with Federal cultural resources programs to manage the artifacts after recovery. Managing recovered artifacts comes with additional challenges not encountered with the permitted removal of artifacts. The Cerberus Collection is the Bureau of Land Management's (BLM) largest collection obtained through a law enforcement case and consists of 101,782 artifacts originating from the American Southwest. The BLM has focused on the long-term preservation and management of the artifacts in a manner consistent with their significance to the profession and descendant communities. Currently, the BLM is working with repositories to curate the artifacts at museums near their origin. This overview of the management of the collection and current projects will serve as an update on BLM's progress towards making the artifacts more accessible to Tribal communities, researchers, and the public.

Laura Bruns, USFS Dixie National Forest

The Millennium "Trailer Menace": Cultural Resource Surveys of Proposed Great American Outdoors Act Projects on the Dixie National Forest

The Great American Outdoors Act was enacted in 2020. This act appropriated funds to complete deferred maintenance at administrative and recreational sites on federal lands, including US Forest Service managed lands. Projects can include roads, trails, campgrounds, bridges, marinas, etc. This presentation summarizes planned GAOA projects on the Dixie National Forest in Southwest Utah.

Seth Button, Utah Division of Oil, Gas and Mining

High-grading the documentary record to help interpret Utah's mining landscapes

Western mines and mining towns are complex sites that have been subjected to landscape-level modification. They are challenging to document and extremely difficult to interpret. Surprisingly, the extensive and relatively accessible documentary record remains under-utilized by nonspecialists. Newspapers, oral histories, photographs, and other sources provide a huge amount of information about daily life – as well as salacious details about sex, murder, religion, xenophobia, the struggle for wealth and social status, and, last but not least, baseball. Far from being incidental in detail, this information can be essential for archaeologists struggling to interpret the heavily modified cultural landscapes of mines, mining settlements, and associated infrastructure.

Paper Abstracts

Kristopher R. Carambelas, Public Lands Policy Coordinating Office
Why Transportation Features within R. S. 2477 ROW Matter
Transportation features--trails, two-track roads, or super highways--are essential to developing and sustaining cultural economies. When encountered during archaeological survey, historical transportation features deserve and usually require reasonable and good-faith efforts to identify and evaluate them for National Register eligibility and, when necessary, assessment and resolution of adverse effects. Sometimes, however, it is difficult to find historical transportation features through desktop studies, or determine the age of transportation features discovered during survey. More than a decade of legal work by the Public Lands Policy Coordinating Office has produced an information windfall regarding historical transportation features found within R.S. 2477 rights-of-ways. This paper examines why these particular historical features should matter to archaeologists and historians, how to identify most of them before going to the field, and what information is publicly available for National Register evaluations. It also identifies some implications for overlooking or ignoring these historical features.

Jason Chuipka, Woods Canyon Archaeological Consultants, Inc.
Collaborative Land Management Planning and Implications for CRM Consulting in Utah
Tribal engagement and consultation have become a larger part of cultural resource management projects across the Southwest. In 2022, the five Tribes of the Bears Ears Inter-Tribal Coalition put forth a land management plan for the Bears Ears National Monument (BENM) of southeastern Utah. The plan provides perspectives on the Tribal approach to land management. Although prepared for BENM, this plan is intended to provide the foundation for proactive collaborative management of ancestral lands by Tribes and land managing agencies. This paper examines how greater Tribal input may affect cultural resource management consultants working on projects in Utah in the decades to come.

Tiffany Tuttle Collins and Christine K. Michalczuk, SWCA Environmental Consultants
Trash or Treasure: Exploring the Origins of Artifacts Discovered at Salt Lake City's Denver & Rio Grande Western Railroad Maintenance Facility (42SL718)
In November 2020, while contractors were digging a trench for utilities associated with the Utah Transit Authority's (UTA's) new Central Bus Operations and Maintenance Facility in downtown Salt Lake City, they made a surprising discovery. In the bottom of the trench they found a historic

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refuse pile that had been deposited over a period of approximately three decades—from the late nineteenth through the early twentieth centuries. In the past, numerous railroad companies had used this location as a rail yard, and it appeared that the refuse pile had accumulated against the concrete foundation of a narrow-gauge rail line associated with the historic Denver & Rio Grande Western (D&RGW). Working with UTA, SWCA Environmental Consultants had monitored construction and excavated finds during earlier phases of the project. Work for the final stage of the project led to this discovery, which was found to the west of the main rail yard, adjacent to the D&RGW oil house, and included a variety of artifacts dating to ca. 1890 through the 1920s. Based on the sampled contents of the refuse pile and its location, this article presents several hypotheses about the origins of the refuse and the individuals who contributed to it.

Shanna Diederichs, Woods Canyon Archaeological Consultants
Bears Ears Site Preservation Project: Partnership in the Face of Visitor Impacts
The Bears Ears Preservation Project aims to study and preserve visitor threatened sites in southeast Utah. Now in its sixth year, the project has become a model for collaborative management of cultural sites by Federal agencies and Native Tribes with the assistance of partners such as Woods Canyon Archaeological Consultants, the Bears Ears Partnership, Living Heritage Anthropology, and the Ancestral Land Conservation Corps. Eight Ancestral Pueblo sites have been studied, structurally stabilized, and protected to date. The methods and goals of the project have been transformed and refined through this expanded partnership.

Judson Byrd Finley, Erick Robinson, and R. Justin DeRose, Utah State University
Floodplain Stability Controls the Growth Potential and Resilience of Indigenous Northern Colorado Plateau Agricultural Communities: A Case Study from, Dinosaur National Monument
Indigenous agriculturalists north of the Colorado River occupied the ecological margins of maize cultivation in western North America from AD 300-1300. Fremont societies practiced diverse agricultural strategies designed to offset shortfalls in foraged foods caused by a dominant pattern of multidecadal precipitation variability. From this perspective, agriculture increased the robusticity of food sources leading to small but resilient local populations. Our previous work in northern Utah's Uinta Basin demonstrates that in the absence of the dominant multidecadal precipitation variability regime between AD 750-1050, agricultural conditions improved, and populations expanded to form villages along the floodplains of northern Colorado Plateau dryland alluvial systems thus

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creating the capitol necessary for incipient social complexity. But did the very same conditions (i.e., decreased precipitation variability) that allowed the growth of Fremont agricultural societies make them simultaneously vulnerable to arroyo formation, a key geomorphic risk to floodplain agriculturalists? In this study, we test the hypothesis that complex response in alluvial cycles limits the growth potential and resilience of dryland agricultural societies. We present preliminary results from Cub Creek in Dinosaur National Monument that shows rapid sedimentation punctuated by episodic arroyo formation characterized the last 2,000 years of the valley's history. Stratigraphic and chronological evidence shows that an arroyo-forming event before AD 1020 corresponds with the final decades of the Cub Creek agricultural village. We conclude that arroyo formation combined with the return of the dominant multidecadal precipitation variability regime at AD 1050 was a key ecological constraint on the growth potential of local Fremont populations. These findings have potential implications for early Indigenous dryland agricultural systems throughout the interior of western North America.

Winston Hurst and Fred Nials, ScabKnuckle Archaeology
Running the Corn. Puebloan Agricultural and Ritual Landscape Manipulation in the Northern San Juan Region
Recently available LiDAR imagery has confirmed previously-suspected, enormously-extensive, Puebloan farming and ritual landscape modifications of the sagebrush uplands throughout much of the Northern San Juan region. Robust, ridge-and-swale farming landscapes are interwoven throughout much of the region with Chaco and Post-Chaco-era ritual "road" and racetrack loop swales, the known extent of which has been tremendously expanded with the advent of LiDAR. These findings will forever change our understanding and appreciation of Puebloan agricultural and ritual praxis.

L Brock James, The Pennsylvania State University
A comparison of random forest machine learning and point process geospatial analyses as guides for quantitative interpretation of archaeological site distributions.
The use of environmental variables to understand site locations is central to the methods of modern archaeology. Both machine learning methods such as Random Forest and geospatial methods such as Point Process Models can assess how well different variables predict archaeological site presence across a landscape. This enables archaeologists to understand the degree to which particular variables (access to water, hunting suitability, etc…) were drivers of past land use. By comparing the performance of explanatory variables that represent alternative interpretations of the archaeological

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record, the degree to which each aspect of land use drove site selection can be determined. There are benefits and limitations for each of these methods, and understanding how to apply them increases the accuracy of landscape level interpretations of the archaeological record. A case study is presented demonstrating these methods using data from the lower Dolores River canyonlands area, Grand County, Utah.

Samantha Kirkley, Project Archaeology
The Enduring Impact of Archaeology and Oral History in Education
Project Archaeology is a national heritage education program dedicated to promoting an understanding of past and present cultures, improving social studies and science education, and enhancing citizenship education to help preserve our archaeological legacy. The program began in Utah in 1990 as a federal interagency effort to combat the vandalism and looting of archaeological sites. It is currently headquartered at Southern Utah University and is jointly directed by the Institute for Heritage Education and guided by the National Leadership Team. Project Archaeology is a diverse network of professionals dedicated to producing high-quality curriculum guides and professional development for teachers, museum educators, and archaeology educators. The main curriculum produced by Project Archaeology, Investigating Shelter, consists of nine sequential, inquiry-based lessons that guide students through a complete investigation of a historic dwelling using artifacts, maps, historic photographs, and oral histories. This curriculum enables teachers across the nation to grapple with teaching American history before 1492, and the professional development allows them to see the places that matter to indigenous people and have direct, meaningful connections with these living descendants. This presentation will highlight how archaeological inquiry, oral history, culturally significant places, and interdisciplinary scholarship can help educators introduce their students to a more engaging, and inclusive history of America.

Eli Lyon, Woods Canyon Archaeological Consultants
The Prehistoric Archaeology of Tarantula Mesa, Garfield County, Utah
Woods Canyon Archaeological Consultants recently conducted Class III inventory of 11,592 acres of Off-Highway Vehicle (OHV) routes on BLM lands the Upper Henry Mountains in Garfield County, resulting in the documentation of 560 sites. As part of this survey, approximately 545 acres were surveyed on Tarantula Mesa, between the Henry Mountains and Capitol Reef National Park, with 76 sites recorded. Analysis of diagnostic projectile points indicates the cultural affiliation of sites spanned Archaic, Fremont and Ethnohistoric time periods. Site types include lithic reduction and resource processing areas, as well as temporary camps. Perhaps most

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interestingly, 113 thermal features were noted within the recorded sites. These features have significant potential for yielding data that could greatly inform on the occupation of Tarantula Mesa for over 10,000 years.

Todd Prince and Greg Woodall, Independent Archaeologists
An Update on Archaeological Site Preservation Efforts in Washington County County
An update of site documentation and preservation efforts in Washington County will be given. A recent SHPO funded inventory of sites on St. George City parcels will be highlighted, as well as a cautionary tale about site complexity in the St. George Basin from volunteer site excavations there. Efforts to create Archaeology Parks in St. George and Hurricane, and an Archaeology Ordinance for St. George will be reviewed.

Liz Robinson, Utah Department of Transportation
Highways and Byways: Documenting Historic Highways in Utah
Archaeological surveys often encounter historic highways on the landscape whether it is an interstate, U.S. route, state route or associated abandoned segment. Historic highways may overlay older informal local roads or were constructed as an original alignment to establish additional engineered access to an area. These roads have been documented and evaluated in a variety of ways in the past and UDOT is issuing guidance on a standard approach for their treatment. Although these routes are often documented in discrete segments, it is important to consider the route as a whole to determine integrity and significance of the resource. These guidelines should result in more precise survey methodology, informed historic context and consistent documentation.

Ronald J. Rood, Metcalf Archaeological Consultants, Inc.
Juke Box Cave, 42TO20: Summary of Results from a Small Excavation
Juke Box Cave, located within Danger Cave State Monument, is arguably one of the most pristine large cave sites in the Great Basin with extensive human occupation. Tested by Jennings in 1947, it has largely been ignored archaeologically with the exception of some vandalism cleanup work completed by the Antiquities Section in the 1990s and early 2000s, and some additional recordation of the rock art. In 2019, Metcalf in association with the Utah Division of State Parks, completed a very small excavation to recover some archaeological materials eroding from the edge of one of the original tests completed by Jennings. We were able to get one radiometric date - the very first from Juke Box - and a small assemblage of cultural material from the mid-Holocene was recovered. This work leads to more

questions and further demonstrates the potential Juke Box has to offer for future archaeological research.

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Ethan P. Ryan, Cannon Heritage Consultants, Inc.
Remote Sensing and Geophysics Across Utah and the West
Cannon Heritage Consultants has had the opportunity to conduct remote sensing fieldwork across the western United States. From frontier forts to salt flats, riverbanks to industrial sites, we have collected data from various depositional and cultural contexts. This paper shares some exciting and unexpected results from a handful of projects in the hopes of shedding light on the potential of remote sensing and geophysical application in archaeology. Additionally, this paper identifies ways local, state, and federal cultural resource and land managers can integrate remote sensing into preservation and compliance programs. Finally, this presentation hopes to demystify preconceived notions about the limitations and abilities of geophysical equipment that have restricted the broader integration of geophysics in archaeology.

Sarah P Stewart, Utah SHPO
Rock Imagery at Smith Preserve Project
Several years of rock imagery recording performed by the Utah SHPO at the Adelbert Doyle Smith Family Archaeological Preserve (Smith Preserve) is finally winding down. As we prepare the National Register of Historic Places nomination for this property, we are analyzing thousands of rock imagery elements spread across more than 300 boulders. The rock imagery ranges from the Late Archaic through the Fremont Period, with a variable range of repatination throughout the imagery. This presentation will crunch some of the numbers and suggest avenues for future research into the rock imagery of Utah Lake's prehistoric peoples.

David Yoder, Weber State University
Fremont Figurines: You've Got Questions, I've Got Answers
In this presentation I'll discuss the final results of a decade long analysis of over 800 Fremont figurines. We'll see what they have to tell us about Fremont continuity and variety between groups in the eastern Great Basin and northern Colorado Plateau, as well as insights into Fremont sex and gender, dress, and childhood. Come for the super sweet photos…stay for the weird cultural taboos about noses and mouths?

Poster Abstracts

Jessica Del Bozque, Adams State University

The Hamlin Valley Trap Site (42IN5102): An Archaeological Investigation of a Post-Contact Southern Paiute Pronghorn Game-Drive in Iron County, Utah

Game-drives for the communal hunting of artiodactyls, such as pronghorn, are a phenomenon known to the Great Basin extending from the Middle Archaic into the post-contact temporal periods. Yet, extant documented examples are uncommon in the eastern extent of this geographic region, especially in Southern Paiute traditional territories. Such a site, 42IN5102, an axe-cut juniper game-drive dating to the ethnohistoric period in the Hamlin Valley of western Utah, was investigated to start addressing the data gap for communal hunting architecture sites in the eastern Great Basin of Utah. The study is multifaceted utilizing radiocarbon dating, metal detecting, shovel probes, regional comparisons, and archival ethnographic research. These methods combined aim to garner insights into the material culture expression of resilience of Southern Paiute social memory and identity in the post-contact period. This poster discusses initial results for thesis work conducted at site 42IN5102.

Jenna Foster, & Shannon A. Boomgarden, Natural History Museum of Utah, University of Utah

Testing the Stream Reach Concept

Agricultural success in arid environments, like Range Creek Canyon (RCC), east central Utah, rely on available water. Prehistoric farmers likely responded to changing water availability in RCC by using the creek for irrigation. Prehistoric farmers in RCC would have settled along the creek at locations highly suitable for irrigation farming. This project establishes methods to track water available in the creek. One factor that may increase irrigation suitability are stream reach boundaries (Gregory et al. 2008, Nials et al. 2011). Nails and colleagues suggest stream reach boundaries (pinch points formed by alluvial fans and bedrock formations) are likely to be attractive to past farmers because they slow ground water movement and create a steep gradient for funneling water into ditches. My goal is to use several methods (drone photography, stream flow measurements, and piezometers) to identify SRB and test the benefit of using them for irrigation.

David C. Harvey, Judson Byrd Finley, PaleoWest, Utah State 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

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.

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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.

Erin Haycock, Utah SHPO
Irrigation and Tree Rings: A Case Study at the Historic Muir Poulson House
This study utilizes tree ring analysis of Black Locust (Robinia psuedoacacia) and a contemporaneous fruit orchard to determine irrigation practices at the historic Muir-Poulson House, in Sandy. By measuring tree ring width and averaging the width by years, growth trends indicate that there are likely multiple stages of irrigation occurring on the property in conjunction with ownership changes and that the tree groves do not pre-date the home as was previously expected. Some limitations in this study are due to the sample size currently available.

Ian Farrell, Shannon Boomgarden, Natural History Museum of Utah, University of Utah
Experimental Granary Reconstruction in Range Creek Canyon
Food storage is a key component of many human subsistence patterns and has been a topic of interest for decades. In arid environments, agricultural surplus can be critical to survival. The benefits of access to a stored surplus when needed likely outweigh the associated costs. In Range Creek Canyon (RCC), Fremont-period maize farmers appear to have invested considerable effort into constructing secure food storage facilities in the form of above-ground granaries. There is, however, significant variation in granary construction methods and where they are located. Experimental reconstructions of these granaries will help explain variation by providing estimates of construction costs associated with several types of granaries and any differential benefits which may be conferred by those types. Information gained from this experiment will also factor into analyses of the

total costs of Fremont subsistence in RCC, as storage was a necessary investment for farmers there.

Poster Abstracts

Sam Miller, Natural History Museum of Utah, University of Utah
Correlation Between Bead Size and Borehole Type in Fremont Beads
The perforation types in Fremont beads have the potential to provide insight into not only Fremont tool use, as discussed in Emil W. Haury's 1931 paper, but also Fremont labor investment. This poster proposes that as the thickness of conically or biconically drilled beads increases, bead diameter will likely also increase. Furthermore, the method used to create a borehole is correlated to bead size (length-to-width ratio). This study attempts to test the hypothesis that bead size correlates with borehole type in a subsample of beads collected in Range Creek Canyon during the 2021 and 2022 field seasons, comprising primarily bone and stone material types. The results can consequently inform on time spent investing in bead manufacture. Analysis criteria include bead condition, shape, dimensions, weight, material, and borehole type. The results will be presented with suggestions for improving data collection and implications for future research.

Tim Riley, Utah State University Eastern Prehistoric Museum
Blind Dates and Nervous Anticipation: Adding Temporal Context to Perishable Artifacts in Legacy Collections from eastern Utah
The Ephraim P. and Dorothy Hickman Pectol Collection, one of largest single collection of Fremont-associated perishable artifacts, was donated to the Utah State University Eastern Prehistoric Museum in the Spring of 2017. Most of this collection was amassed from sites along the Fremont River during the early 20th century, near what is now Capitol Reef National Park. Unfortunately, little besides this basic information was known about most of the objects in the collection. The museum embarked on a campaign to provide temporal data on perishable artifacts from this and other collections housed at the museum. Over forty objects were selected and sampled for radiocarbon dating through DirectAMS. While many of the results corroborated cultural or temporal affiliations that were already suspected based on chronological and stylistic typologies, some of the results were much younger or older than expected. This initial project of adding a temporal association to these objects has reaffirmed the need for museums and museum-engaged researchers to assess the hidden research potential within existing collections, particularly through modern analytical methods and other novel approaches

Maisie Schwartz, Logan Simpson

Poster Abstracts

Running Up that Hill: Results from the North Hills, Kane Springs Class III Cultural Resources Survey

In summer of 2022, the Bureau of Land Management Cedar City Field Office, in coordination with the Natural Resources Conservation Service and the Utah Division of Wildlife Resources, planned a vegetation removal project within the Red Hills just west of Parowan Valley. Logan Simpson archaeologists completed a Class III cultural resources survey of the area in support of the project. Archaeological resources within the survey area proved extremely dense (1 site per 23 acres), which created unique challenges for site documentation and NRHP evaluation techniques. Sites spanned dates of occupation from the Early Archaic to the Late Prehistoric periods, though not surprisingly, many were associated with the Formative period. Interestingly, while the area contained numerous diagnostic artifacts inclusive of projectile points and ceramics, the survey area was void of surficial indications of Indigenous archaeological features. Generally, the survey area likely served as a seasonal hunting and resource gathering locale for individuals residing in the valleys below. This poster details the unique archaeological resources within the survey area, the challenges faced during the survey and reporting processes, and the techniques used to address these challenges.

Joshua Trammell, Brendan Ermish, Ellyse Simons, Logan Simpson, Utah National Guard

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

This study explores the presence of different toolstone materials at a series of archaeological sites in Sarcobatus Flat, southwestern Nevada. The selection of materials is the result of a combination of numerous "extrinsic cost factors" and "human factors". Here, extrinsic costs are quantified to generate an "attractiveness" value, which is then used in a gravity model to predict: 1) composition of lithic material at sites; 2) geographic extent of use. Deviations from predictions provide insight into the "human factors" that likely influenced toolstone selection. Applying this model to lithic procurement strategies provide a quantitative, cost-benefit analysis of lithic technological organization.

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Poster Abstracts

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

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