2019 Rocky Mountain Anthropological Conference, Logan, Utah
Schedule of Presentations

Thursday Evening

4 – 10 pm	Registration and Welcome Social

Friday Morning

Time	Author(s)	Presentation Title
9.00 – 9:20	Whitney Seal	Rust Is The New Black
9:20 – 9:40	Christopher W. Merritt	Japanese Railroad Worker Archaeology in Central Utah
9:40 – 10:00	Anali Rappleye	The Scenic Route: Historic Filming Locations of Utah
10:00 – 10:20	Todd Guenther	From Clovis to Cowboy: five years of archaeological reconnaissance between 10,000 and 13,800ft in the Wind River Mountains, Wyoming.
10:00 – 10:40	Paul Buckner	Spatiotemporal Variability in High Elevation Hunter-Gatherer Landscape Use in the Medicine Bow Mountains, Rawah Wilderness, Colorado
10:40 – 11:00	Linda Scott Cummings	Mountains as Corridor or Barrier?
11:00 – 11:20	Craig Lee and Beth Horton	Ice Patches, Aerial Photography, and a Triennium of Challenging Conditions in the Greater Yellowstone
11:20 – 11:40	Elizabeth Hora	The Value and Practice of Public Archaeology in the Intermountain Region
11:40 – 12:00	Jason M. LaBelle, Kelton A. Meyer	"Gearing Up" at the Johnson Folsom site in the Foothills of Northern Colorado

Luncheon

12:00 – 1:30	Molly Boeka Cannon Darren Perry Phillip Schoen	Welcome and Introductions Voices from the Dust: A Shoshone Perspective Bear River (Film)

Friday Afternoon

2:00 – 2:20	Cameron Hogin	A Frequency Distribution Analysis of Rock Alignments in the Owyhee Uplands, Idaho
2:20 – 2:40	Brooke S. Arkush	Recent Investigations at Sagebrush Spring: A Prehistoric Foothill Hunting Camp in Far Eastern Idaho
2:40 – 3:00	Kevin Black	Quarries Large and Small: A Comparison from Northern Colorado

Friday Afternoon (cont.)

Time	Author(s)	Presentation Title
3:00 – 3:20	William Eckerle	Landscape-scale Archaeological Site Burial Model for Jackson Hole, Wyoming
3:20 – 3:40	Hillary A. Jones, Judson B. Finley, Tammy M. Rittenour, Kenneth P. Cannon	Results of Paleoenvironmental and Geomorphic Investigations at Three Paleoindian Sites in Centennial Valley, Montana: Interpretations for Cultural Age Stratigraphic Indicators
3:40 – 4:00	Morgan Robins	Luminescence Dating of the Dinwoody Bison Jump, Wind River Mountains, Wyoming.
4:00 – 4:20	Kelton A. Meyer	Spatial Classification of Intercept Areas at the High Grade Game Drive (5BL148), Rollins Pass, Colorado.
4:20 – 4:40	Trista Schiele	Landscape-Scale Processes in the Space-Time Dynamics of the Uinta Fremont Agricultural Transition in Eastern Utah and Northwestern Colorado
4:40 – 5:00	A. Dudley Gardner	A Brief Look at the Paleoindian and Early Archaic Features at Eagle Rock Shelter (5DT813): Gunnison Gorge, Colorado
5:00 – 5:30	**RMAA Board Meeting**	Elm Room
5:00 – 7:00	**Friday General Poster Session**	
1.	Cayla Kennedy, Mary M.H. Erlick, Judson Byrd Finley, Robert Kelly, Alexander Craib, Tammy M. Rittenour	Optically Stimulated Luminescence Dating at Alm Shelter, Bighorn Basin, Wyoming
2.	Lawrence Todd, Daniel Dalmas, Jack Hofman, John Rapes, Matthew Neff, Rachel Channell, William Dooley	A High Elevation Game Drive Complex, Washakie Wilderness, Shoshone National Forest, Wyoming.
3.	Carlie J. Ideker, Tammy M. Rittenour, Michelle S. Nelson, Judson Byrd Finley	Too Much Time: What Dating a Potsherd with 5 Geochronometric Techniques Tells Us

5:00 - 6:30 **Friday General Poster Session (cont.)**

4.	Kelton A. Meyer, Jason M. LaBelle	Familiar Faces in Northwestern Colorado: 3D Reconstruction of Clay Fremont Figurines from Rat Midden (5MF14) and 5RB1879
5.	Christian Thomas, Valerie Monahan, Claire Alix, J Jen Herkes, Carcross/Tagish First Nation Kwanlin Dun First Nation, Ty Heffner	The Alligator Lake throwing dart: New insights into ancient hunting technology from Yukon Ice Patches
6.	Matthew Neff, Rachel Channell, Lawrence Todd	Archaeological Post-Fire Assessment, Documentation, and Monitoring
7.	Kelton A. Meyer, Jason M. LaBelle	Familiar Faces in Northwestern Colorado: 3D Reconstruction of Clay Fremont Figurines from Rat Midden (5MF14) and 5RB1879.
8.	Jason M. LaBelle, Kelton A. Meyer	Fremont Storage Facilities along the Southern Margin of Blue Mountain, Moffat County, Colorado
9.	Jessica D. Wriedt, Jack de Morgan, Ashley Hansen Neff, Scotia Palmer Mullin, Sashuan Armbrister, Kody Rolle, Rachael Shimek, Mary Lou Larson, Marcel Kornfeld	Hell Gap 2019 Season: Preliminary Report
10.	Ethan P. Ryan	New Interdisciplinary Research at 48PA551, a Middle Holocene Housepit Site of the Wyoming Rocky Mountains
11.	Brian Gorrebeeck, Tom Flanigan	150th Anniversary of the Great Scientific Surveys of the West

5:00 - 6:30 **Friday General Poster Session (cont.)**

12.	Jack L. Hofman, John Rapes, Lawrence C. Todd, William Dooley, Daniel Dalmas, Barbara Crable	Utilization of Silicified Sediment as Tool Stone in Northwest Wyoming: Sources, Chronology, and Patterns of Use in the Absaroka Mountains
13.	Chelsea Cheney	Macrobotanicals in the Archaeological Record: Seed Analysis at 48PA201 North Fork Cave #1 (Mummy Cave), Wyoming
14.	Martin H. Welker David Byers	The Birch Creek Canids and Dogs as Transport Labor in the Intermountain West
15.	Gideon Maughn	Edible Plants of the Snake River Plain
16.	Kendra Nichols, Robert Goddard, Erin Haycock, Nathan Greiner, David Byers	Recent Research on the Eastern Snake River Plain
17.	Garnet Kwader David Byers	Taphonomy of Idaho Lava Tube Archaeofaunas
18.	Houston Martin Kenneth P. Cannon	A Preliminary Bone Preservation Suitability Model Using Fuzzy Logic Overlay Analysis for Jackson Hole, Teton County, Wyoming

Saturday Poster Symposium 8.30 – 10:00 am

Symposium: Recent Research in Gunnison, Hinsdale and Mineral Counties, Southwest Colorado

The summer 2019 University of Oklahoma archaeological field school was based in Hinsdale County, Colorado. Students participated in two limited test-excavations and survey of a parcel along the Lake Fork of the Gunnison River, and in teams or individually conducted independent field research. This poster session showcases the results of student and staff independent research, which collectively encompasses three counties in Southwestern Colorado and extends chronologically from the Late Paleoindian through Historic eras. Projects include a synthetic exploration of rock shelters in the Gunnison Basin; site-specific studies of Euro-historic, game drive, and high-altitude ceramic-bearing localities; and artifact-level analyses of the projectile point, debitage and obsidian assemblages of the 2019 survey area. Three additional posters report on the emergency evacuation of Hinsdale County Museum collections in the face of imminent flood danger in May 2019 and experimental archaeological studies of pine-nut grinding and its archaeological traces.

1.	Meghan J. Dudley, Lupita Mendoza-Valera	Do You See What I See? An In-Field Groundstone Analysis at the Gatekeeper Site, Gunnison County, Colorado

Saturday Poster Symposium 8.30 – 10:00 am (cont.)

2.	Bonnie L. Pitblado	FLOOD WARNING! Evacuating the Historical Hinsdale County Museum, Colorado, May 2019
3.	Sally Robinson, Chandler Cheairs	Southern Pottery in the San Juan Basin of Mineral County, Colorado
4.	Chandler E. Cheairs, Sally Robinson	Holy Moses Site Recording & Analysis of Sites in Mineral County, Colorado
5.	Lupita Mendoza, Amber Vinson, Meghan Dudley	An Experimental Study of "Netherstones," Lake Fork of the Gunnison Valley, Colorado
6.	Jeremy Barton	Sourcing the Historical Finds of Yeager Gulch
7.	Riza J. McClurkin	Analysis of Projectile Point Chronology on the MIller Flats, Colorado
8.	Noah Place, Cody Webster	Debitage Montage, Gatekeeper Site, Colorado Rocky Mountains
9.	Rebekah Link, Bonnie L. Pitblado	A Potential Game Drive South of Lake City, Southwest Colorado
10.	Ella Crenshaw	Taken for Granite: Rockshelters in the Lake Fork Valley of the Gunnison River
11.	Joshua Davis	Black Glass: An XRF Analysis of 11 Obsidian Artifacts

Saturday Morning

Symposium: A Forum on the Challenges of Integrating Anthropological Perspectives into Public Land Management

In this forum, archaeologists, an anthropologist and wildlife biologist discuss the role anthropological and archaeological data can have in public land management policy. In a 1996 *World Archaeology* article, Lee Lyman articulated how ancient faunal datasets can provide insight on the goals of conservation biology for the long-term retention of natural biological communities for continuing evolution (Frankel and Soulé 1981). Being more inclusive we include anthropological data cross culturally from two regions, the Greater Yellowstone Ecosystem and southern Africa, that face similar contentious issues concerning how humans have influenced species presence, abundance, and behavior and the implications of the role of humans in the long-term management of species in public land settings. By looking at data from a longer temporal scale, researchers in this forum offer a distinct perspective to model the trajectories of systems and provide guidance on long-term management decisions. A particularly challenging aspect is the nature of perturbations over the last 200+ years, both climatic and cultural, that make this period anomalous in the Holocene but crucial in understanding current conditions and future decision-making for public land management.

Time	**Author(s)**	**Presentation Title**
10:00 – 10:10	Kenneth P. Cannon	Introduction to Forum

Saturday Morning Paper Symposium (cont.)

10:10 – 10:30	Robert K. Hitchcock, Melinda C. Kelly	Elephant Hunting and Elephant Management in Southern Africa, 1844-2019
10:30 – 10:50	Kenneth P. Cannon, Houston Martin, Molly Boeka Cannon	Bison in the Greater Yellowstone Area and Its Role in the On-Going Debate of Wildland Management
10:50 – 11:10	Lawrence Todd	When Wilderness and Culture Collide: Documenting Prehistoric Archaeology in the Washakie Wilderness, Shoshone National Forest, Wyoming
11:10 – 11:30	Dan Macnulty	Implications of The Wilderness Concept for Understanding the Ecology of Yellowstone National Park
11:30 – 12:30	Discussion	
12:45 – 1:15	**RMAA Business Meeting**	Elm Room

Presentation Abstracts

Brooke S. Arkush
Recent Investigations at Sagebrush Spring: A Prehistoric Foothill Hunting Camp in Far Eastern Idaho

The Weber State University Archaeological Field School recently completed test excavations at Sagebrush Spring (site 10-LH-528), a mid-altitude forager camp located in the foothills of the Lemhi Range above Birch Creek Valley in eastern Idaho. Most projectile point styles and eight radiocarbon dates indicate that this location was used intermittently from the Early Archaic (ca. 6500 - 4500 B.C.) through Late Prehistoric (ca. A.D. 400 - 1800) periods. Faunal remains are dominated by bighorn sheep and bison, and the lack of millingstones suggests that the site served primarily as a warm season big-game hunting and processing camp. This is the fourth prehistoric site that the WSU Archaeology Program has excavated in the Birch Creek Valley since 2012 and adds another data set to our study of settlement systems, subsistence practices, and lithic tool kits in the central Birch Creek drainage.

Jeremy Barton
Sourcing the Historical Finds of Yeager Gulch

The Lake Fork Valley of Colorado is rich with the history of early Anglo-American settlers as they travelled west in search of gold and other minerals. Yeager Gulch is located north of Lake City in the Upper Gunnison Basin and contains two historic dumpsites. These dumpsites date from 1870 to 1950 and contain many hole-in-cap cans as well as aqua and amber colored glass. These finds and others inspired me to explore who used these items and when exactly they were manufactured. To address those issues, I examined the historic documents located in Lake City, Colorado, gathered oral histories of the site, and did my own personal research. This poster highlights finds from the dumpsites and my interpretations of them.

Kevin Black
Quarries Large and Small: A Comparison from Northern Colorado

Two field projects conducted in 2019 focused on prehistoric activities at lithic sources with quite distinctive site characteristics. The smaller of these two sources in the Southern Rockies is the Pinkham site in Jackson County, Colorado near the Wyoming border. Here, a number of small surface depressions spatially associated with abundant chert nodules, cores and flaking debris suggested focused quarrying of shallowly buried toolstone. A much larger and better known quartzite quarry is 75 km to the southwest in Grand County, the Windy Ridge site, with quarrying activity covering an estimated area of 1.3 ha. Well-documented in a 1993 field school project, this season's work concentrated on defining the sprawling northern extent of the site, specifically both quarry and workshop limits. This presentation will provide a progress report on these field investigations, comparing site quarrying features and artifact assemblages between two toolstone sources with contrasting surface expressions.

Paul Buckner
Spatiotemporal Variability in High Elevation Hunter-Gatherer Landscape Use in the Medicine Bow Mountains, Rawah Wilderness, Colorado

This paper presents recent findings from ongoing research on 35 archaeological assemblages from high elevation localities in the Medicine Bow Mountains. Analyses of these collections have identified a high degree of variability in assemblage diversity, tool typologies, temporal affiliation, and assemblage size when compared against contrasting landscape characteristics. This paper explores these variabilities, and offers new interpretations of landscape use patterns associated with these sites and the preferential reoccupation of place through time. Similarly, while the Paleoindian record in the Medicine Bow Mountains has been the subject of previous research, extant data on landscape patterns associated with Archaic and Late Prehistoric components are in need of additional representation. This presentation will add this additional spatiotemporal context and aims to situate the Medicine Bow Mountains within the larger archaeological framework of the Southern Rocky Mountains. Exploration of these themes will highlight landscape use contrasts with more heavily researched areas, such as the Colorado Front Range, as well as the potential for research in the Medicine Bow Mountains to make broader contributions to understandings of hunter-gatherer lifeways in the greater Rocky Mountains.

Kenneth P. Cannon, Houston Martin, Molly Boeka Cannon
Bison in the Greater Yellowstone Area and Its Role in the On-Going Debate of Wildland Management

Bison hold a unique place in western American history generally and in Yellowstone National Park particularly, both as an iconic representation of wilderness but also as a polemic. To the tourist bison are a must when visiting the Park and YNP officials accommodate this interest through interpretive talks, pamphlets and signage plus the numerous books and souvenirs. But in the world of researchers and managers bison represent a key species in the debate of how region functions not only as an ecosystem but also as a commercial entity (i.e., brucellosis-free cattle ranching). During the past few decades archaeological evidence of bison (and other large herbivores) has been used to justify or argue against management policies. Recently, researchers have consulted the historic and archaeological records to argue that bison were not a member of the faunal community during the post-contact period and therefore did not contribute to the ecology of the area. An examination of the history of the application of zooarchaeology to management issues in YNP will be discussed along with a critical evaluation of how a misunderstanding of human behavior, bison behavior and taphonomy can present a misrepresentation of the role of bison in the ecology of YNP.

Chandler E. Cheairs, Sally Robinson
Holy Moses Site Recording & Analysis of Sites in Mineral County, Colorado

In late June, as part of the University of Oklahoma's 2019 archaeological field school, myself and a few fellow students visited a site in Mineral County, Colorado with the intent of investigating a location we were previously informed contained pottery. At the time of our visit, we did not find additional pottery, but we did find a very dense lithic scatter of over 25 different raw materials as well as an assortment of tools. Upon further research of "COMPASS," Colorado's database of finds throughout the state, we discovered that very few sites of any sort have ever been recorded in Mineral County. This, together with its proximity to natural hot springs, make this site unique, intriguing and ideal for further research. This poster reports on the site and contextualizes it with data from the few other sites documented in the county. I conclude that we should investigate the known sites further and actively search for additional archaeological localities in this understudied area.

Chelsea Cheney
Macrobotanicals in the Archaeological Record: Seed Analysis at 48PA201 North Fork Cave #1 (Mummy Cave), Wyoming

Nestled near the eastern boundary of Yellowstone National Park in the Absaroka Mountains, Wyoming, North Fork Cave #1 is a multi-occupation rock shelter that was initially excavated during the 1960s and 1970s by Harold McCracken and colleagues. Since the initial analyses and publications, very little research has been conducted on the cultural materials recovered. The strata found at "Mummy Cave" extend back around 9,000 years, and with the amount of well-preserved perishable materials recovered, the shelter's strata contain a wealth of untapped information. In 2018 I had the opportunity to participate in a perishable materials class through the University of Wyoming and the Buffalo Bill Center for the West. I conducted research on seeds recovered from four cultural levels of NFC-1. These levels spanned roughly 3300 years of the late Holocene. With interests regarding the ecological relationships between humans and their environment, my research goals comprised of the collection, curation, and identification of seeds from the shelter. Comparative macro-botanical analyses could provide a glimpse into prehistoric environment and human plant use through time – including evidence for medicines, food, clothing, and tool resources. Additionally, analyses from provincial shelters could provide even further comparisons between similar archaeological sites, both spatially and temporally.

Ella Crenshaw
Taken for Granite: Rockshelters in the Lake Fork Valley of the Gunnison River

While rockshelters are considered to be rare in the Lake Fork Valley of the Gunnison River, neither the geology or cultural history of the region provide a reason why that should be the case. Due to this, I suspected that these formations and their prehistoric and historic use might not be uncommon. Through a search for both new and previously identified rockshelters within a 30 km stretch of this valley I addressed two questions: Are rockshelters rare in the Lake Fork Valley, and if not or if so, why? I was able to identify four sites, and my research suggests that many more are likely present in this area. Additional rockshelters in the Lake Fork Valley could yield valuable information about peoples of the past in Colorado due to their potential for deep deposition and good preservation.

Linda Scott Cummings
Mountains as Corridor or Barrier?

We tend to think of people in prehistory as most likely trading with their nearest neighbors, rather than looking at longer distance trade associations. Using maize morphometrics as our proxy, we examine

populations of maize cobs from eastern Utah (San Juan County, Canyonlands area), northwestern Colorado (Rio Blanco County), and the Front Range of Colorado (Douglas and Pueblo Counties) as our example. We include Anasazi, Fremont, and Plains cultural groups. Morphometric data sort into populations of cobs that are compared by location. For instance, cobs from Pueblo and Douglas County, Colorado, appear to represent distinctly different lineages of maize, with the cobs from Pueblo County exhibiting similarities to cobs from Canyonlands, Utah rather than northwestern Colorado, suggesting the possibility of a more southerly trade or exchange route, or perhaps a network that included both locations, but did not link them directly with one another. Cobs from Douglas County are more similar to end members of the Hopi Blue group, some of the Fremont cobs from Rio Blanco County, and primitive varieties of maize. This paper uses data on maize to address possible relationships of people and use of space across this portion of the Intermountain west.

Joshua Davis
Black Glass: An XRF Analysis of 11 Obsidian Artifacts

The use of XRF Spectrometry to source obsidian artifacts has been an invaluable asset to archaeologists studying trade and long-distance travel throughout prehistory and across the globe. During the 2019 University of Oklahoma Archaeological Field School in Colorado's Gunnison Basin, 11 flakes and other artifacts that appeared to be made of obsidian were collected and sourced using XRF Spectrometry. Here, I present the results of this analysis and some hypotheses about the routes by which this material made its way into the Gunnison Basin.

Meghan J. Dudley, Lupita Mendoza-Valera
Do You See What I See? An In-Field Groundstone Analysis at the Gatekeeper Site, Gunnison County, Colorado

During the University of Oklahoma's 2019 archaeological field school, we surveyed the Gatekeeper Site in Gunnison County, which appeared to have a higher-than-expected frequency of expediently used groundstone artifacts ($n > 40$). If people had used that much groundstone at the site, it would have forced us to acknowledge the role that plant gathering played in site location for hunter-gatherers at high elevations. To determine if groundstone might be occurring in higher numbers at this site than is typical ($n < 10$), we conducted macro- and microscopic in-field analyses of a sample of potential netherstone and mano artifacts. Our results suggest that, although groundstone is present at the site, it does not occur in the abundance we originally thought, and, rather, conforms to traditional expectations of hunter-gatherer groundstone use in the Colorado Rockies.

William Eckerle
Landscape-scale Archaeological Site Burial Model for Jackson Hole, Wyoming

Jackson Hole, Wyoming, a ~6000-7000 ft. above sea level structural valley occupied by the Snake River, flanked by the Teton Range to the west and the Gros Ventre Mountains to the east, formed the southern termini for both Illinoian and Wisconsin Yellowstone plateau-piedmont glaciers. While these glaciers preceded cultural occupation of Jackson Hole, their landforms and deposits influence almost all archaeological site burial contexts. A landscape-scale GIS-informed site burial model, created by combining geoarchaeological information compiled by the author with Quaternary geology knowledge recently published by Kenneth Pierce (U.S. Geological Survey, emeritus) and collaborators, allows forecasting spatial distributions of landscapes possessing low vs. high archaeological site burial potential for Jackson Hole.

A.Dudley Gardner
A Brief Look at the Paleoindian and Early Archaic Features at Eagle Rock Shelter (5DT813): Gunnison Gorge, Colorado

Eagle Rock Shelter is a rockshelter above the Gunnison River in Delta County, Colorado that was occupied almost continuously from the Paleoindian period to historic times. As a result of excavations at the site, we are beginning to see variation in feature content and structure over time, but we are seeing some continuities too. This paper will present the initial results of our findings and what appears to be the unique site formational processes resulting from the construction of features and use of the space adjacent to thermal features. We will primarily focus on the period from 12,700 BP to 6000 BP.

Brian Gorrebeeck, Tom Flanigan
150th Anniversary of the Great Scientific Surveys of the West

The USDA Forest Service is celebrating the 150th anniversary of the Hayden, King, and Powell expeditions through Utah, with special emphasis on lands managed by the Uinta-Wasatch-Cache National Forests (UWCNF). Our Heritage Program is organizing historic exploration and scientific reports, photographs, and place names associated with the expeditions and expedition members. The UWCNF is synthesizing this material for forest visitors. The educational information will be available online through the UWCNF website, as well as on "trail apps". There will also be tangible interpretation materials available at UWCNF sites, such as the Logan, Kamas, and Bear River Ranger Stations. The goal of this undertaking is to enhance the publicÃ¢??s recreational opportunities through education relating to the history of "The Great Scientific Surveys", while they use forest trails and roads to visit Public Lands. Trail applications can give the public real-time information about the various expeditions' travel routes, provide historical background for place names encountered on roads and trails, and provide scientific insights related to biology, botany, geology, paleontology, and anthropology along the way. While the current project is focused on the 150th anniversary of "The Great Surveys", the UWCNF will expand this project in 2020/2021 to include the Fremont, Stansbury, Simpson, and Bonneville expeditions.

Todd Guenther
From Clovis to Cowboy: five years of archaeological reconnaissance between 10,000 and 13,800ft in the Wind River Mountains, Wyoming.

The iconic "Clovis to Cowboy" Wyoming Archaeology Month poster (1990) celebrated the long continuum of Wyoming's cultural heritage during an era when common wisdom held that prehistoric people avoided alpine regions. Recent research has documented considerable human presence at high elevations throughout the Rockies. Researchers include 35 Central Wyoming College archaeology students who, during five seasons, have collectively surveyed over 2,600 miles in the rugged Fitzpatrick Wilderness, including two ~25 mile transects originating in the Wind River Basin and culminating on the summit of Gannett Peak. Cultural resources were observed all along the routes and adjacent areas, documenting high alpine human activity from Clovis to cowboy sites. Prehistoric campsites exist up to the Dinwoody Glacier's Little Ice Age moraine; lodge pad village sites were recorded at 11,700ft; Paleo, pre-, proto- and historic periods are represented by diagnostics as high as 12,500ft. Surprising evidence of large-scale

communal subsistence and ceremonial activities also exists in the forms of a bison jump complex at 11,000ft and a heavily used pilgrimage trail from the petroglyph complex at Dinwoody Lakes up to the Dinwoody Glacier. In August 2019, CWC archaeologists identified the ceiling of Wyoming's prehistoric human activity at 13,470ft.

Jack L. Hofman, John Rapes, Lawrence C. Todd, William Dooley, Daniel Dalmas, and Barbara Crable
Utilization of Silicified Sediment as Tool Stone in Northwest Wyoming: Sources, Chronology, and Patterns of Use in the Absaroka Mountains

Veins of silicified sediments (SLS) occur in localized deposits throughout much of the Greater Yellowstone Ecosystem (GYE) where molten volcanics came into contact with silica rich sediments. Where available, these materials commonly serve as local sources of tool stone and provided alternatives to transporting non-local materials into high elevation areas. The quality of SLS for chipped-stone artifact manufacture varies greatly, ranging from coarse grained and brittle with poor conchoidal fracture to rarer high-quality materials comparable to fine cherts. Here we review the chronological patterns of SLS utilization as revealed by diagnostic artifacts, summarize the variety of artifact types represented by SLS, the overall frequency of SLS as compared to other materials, and document one workshop/quarry site in the Washakie Wilderness which illustrates some of the variability and uses of this tool stone.

Robert K. Hitchcock, Melinda C. Kelly
Elephant Hunting and Elephant Management in Southern Africa, 1844-2019

This paper explores wildlife issues in southern Africa with a particular emphasis on elephants (*Loxodonta africana*). Through an examination of archaeological, ethnohistoric, and contemporary ethnographic information on elephant hunting and the other ways in which indigenous people interact with elephants, we examine changes over time in human-elephant relations in the Kalahari Desert region of Botswana, Namibia, and Zimbabwe. There is archeological evidence of elephant kills, butchering, and scavenging of carcasses during the Pleistocene in Africa. Elephant hunting was not a common practice of San and other indigenous people in the Kalahari until the middle of the 19th century, in part because it was seen as both difficult and dangerous. Commercial exploitation of ivory by Europeans and Africans, which depended in part upon San guides and hunters, combined with habitat change and the spread of livestock disease in 1896-97 led to a drastic decline in wildlife numbers. Colonial and post-colonial wildlife management systems included the establishment of protected areas, and restrictions on the numbers of elephant hunting licenses. Elephants, which have long been valued culturally, have become a charismatic symbol of the animal rights movement, and their protection is viewed as critically important by many San who see multiple benefits in their presence, including the promotion of wildlife tourism.

Cameron Hogin
A Frequency Distribution Analysis of Rock Alignments in the Owyhee Uplands, Idaho

Rock alignments were previously reported on in the southcentral Owyhee Uplands. There has been no systematic analysis of rock alignments. This paper tests whether there are differences in rock alignment form relative to their geographic placement. 345 rock alignments were analyzed using a chi-square test. The result was significant; however it provides no conclusive evidence of how individual rock alignment forms reflect functional differences.

Elizabeth Hora
The Value and Practice of Public Archaeology in the Intermountain Region

The term “public archaeology” has been a popular buzzword in recent years, all the while it’s definition has been morphing and changing. To those of us here in Utah, public archaeology refers to archaeology that is performed for the public good, as well as public education and stewardship performed for the good of archaeology. Yet, the specifics remain hazy: how we define our publics and what are the goals of public archaeology are still open questions in our region. This presentation explores some of the needs for public archaeology identified by key interest groups and suggests ways that our regional professional archaeological community can participate in the national wave of public archaeology.

Hillary A. Jones, Judson B. Finley, Tammy M. Rittenour, Kenneth P. Cannon
Results of Paleoenvironmental and Geomorphic Investigations at Three Paleoindian Sites in Centennial Valley, Montana: Interpretations for Cultural Age Stratigraphic Indicators

Wave action along the shores of Lima Reservoir in Centennial Valley, Montana is actively eroding the southern margins of three neighboring Paleoindian sites. Despite ostensible similarity among the sites, major taphonomic differences are apparent in exposed sediments. Shoreline cutbank exposures one-to-five meters high connect the three sites and reveal a complicated geomorphic history. Although each site contains terminal Pleistocene-early Holocene occupations, Paleoindian deposits at these three localities occur in very different contexts: one is buried while the other two are surface artifact scatters. This raises the question of what geomorphic variables caused differences among late Quaternary sediment sequences in the area encompassing the three sites. Furthermore, as burial is advantageous for preserving site structure and a key consideration in assessing NRHP significance, it also prompts the management question of what other landforms in the valley could contain buried archeological material. This research project used a multi-pronged approach including optically stimulated luminescence dating, granulometry, and stratigraphic profiling to accomplish two objectives. First, we reconstructed the geomorphic and paleoenvironmental history of the area in and around the three Paleoindian sites. Second, we used these data to make predictions for identifying the locations of other buried Paleoindian age strata in Centennial Valley.

Carlie J. Ideker, Tammy M. Rittenour, Michelle S. Nelson, Judson Byrd Finley
Too Much Time: What Dating a Potsherd with 5 Geochronometric Techniques Tells Us

In 1985, researchers excavated a large piece of Intermountain Ware pottery from the Platt site in the Absaroka Mountain foothills of northwestern Wyoming. This particular sherd had an abundance of quartz in its temper and paste and lingering organic residue from a past cooking event. Because of these attributes, the Platt sherd became an ideal candidate to compare multiple geochronometric methods, such as luminescence and radiocarbon dating. Luminescence dating provides an age estimate of the last time quartz or feldspar mineral grains were exposed to sunlight or high temperatures. In the case of pottery, luminescence methods date vessel construction as heat from the firing process zeroes a grain’s previously acquired luminescence signal. Radiocarbon dating of sherd residue provides an age for vessel use and therefore, should post-date associated luminescence ages. The Platt sherd’s size meant several luminescence techniques could be employed. Those methods include single-grain optically stimulated luminescence (OSL), small aliquot OSL, fine-grain infrared stimulated luminescence (IRSL), and fine-grain OSL. While the five resulting luminescence and radiocarbon ages are within error, differences in age distributions provide an opportunity to explain the nuances of each dating technique and facilitate a discussion of when each method is best utilized to date pottery.

Cayla Kennedy, Mary M.H. Erlick, Judson Byrd Finley, Robert Kelly, Alexander Craib, Tammy M. Rittenour
Optically Stimulated Luminescence Dating at Alm Shelter, Bighorn Basin, Wyoming

Alm Shelter is one of many rockshelters in northern Wyoming's Bighorn Basin (USA) that provides key information about the late Quaternary environmental and population history of the region. However, unlike most regional rockshelters, which contain fragmentary stratigraphic records, Alm Shelter is a near-continuous depositional sequence that extends back to the Last Glacial Maximum. The excellent stratigraphic integrity of cultural and natural deposits can inform the formation processes, including the chronology of sequential eolian deposits reflecting periodic Holocene droughts. Despite its archaeological importance, and relatively robust radiocarbon chronology, the age of certain key stratigraphic layers remains unknown. Here, we review the existing radiocarbon data and report new ages obtained from optically stimulated luminescence (OSL) measurements on quartz sand from late Pleistocene and Holocene deposits associated with Alm Shelter. The four OSL ages presented provide improved constraints on the archaeological sequence at Alm Shelter, as well as late Pleistocene valley incision. Our work shows that the basal deposits at the site are associated with the terminal late Pleistocene and have preliminary OSL ages of 20 to 14 ka. We also dated the sediments under a 2m boulder, to more accurately determine when a roof fall event occurred, to just after 8.7 ka. Previous work has found that late Pleistocene fluvial gravels deposits associated with Level I at the base of the sequence date to 12.9 ± 5.7 ka calBP, and Level V sediments associated with the late Holocene archaeological deposits date to 1.1 ± 0.6 ka calBP. We compare the luminescence ages with the previous chronologies for Alm Shelter and briefly discuss how the revised chronology fits in the context of existing archaeological records and paleoclimatic reconstructions for the eastern Bighorn Basin with implications for the Central Rocky Mountains as a whole.

Garnet Kwader, David Byers
Taphonomy of Idaho Lava Tube Archaeofaunas

Idaho's Snake River Plain contains a trans-Holocene faunal record documenting human subsistence. In this paper, we seek to better understand how prehistoric peoples used animal resources by examining the faunal remains from four Snake River Plain lava tube assemblages: Wilde Cave, Scaredy Cat Cave, and Tom Cat Cave. We do so by using several metrics designed to document prey acquisition and processing intensity. These include Animals Represented, Percent Complete, Natural Modifications, Impact Scars, Cut Marks, and Number of Identified Specimens/Minimum Number of Elements to determine what prehistoric peoples chose to store and how they chose to use these resources. These variables suggest relationships between within-bone fat content and butchering decisions, illuminating early hunter-gatherers' dietary choices and processing practices.

Jason M. LaBelle, Kelton A. Meyer
Fremont Storage Facilities along the Southern Margin of Blue Mountain, Moffat County, Colorado

Recent fieldwork within the Skull Creek and Willow Creek Wilderness Study Areas (WSAs) reveals a dense concentration of Fremont sites (dominated by granaries, but also limited rock art) within the southern canyons of Blue Mountain, Moffat County, Colorado. These masonry storage features were first noted in a brief article by Jean'on and Roberts (1927) and later by Wenger (1956) in his master's thesis. Field crews from the BLM and Colorado State University also conducted fieldwork on these sites in the mid-1970s and again within the last decade. Our on-going project (2016-present) visited and evaluated every known granary within the WSAs, assessed their condition through SfM (structure from motion) photogrammetry, and completed documentation of the extant collections. Field crews also recorded additional granaries discovered during survey. This poster presents an overview of our project, detailing the types of features

and artifacts encountered, and argues that the ubiquity of features demonstrates that a large Fremont population inhabited the canyons of northwestern Colorado.

Jason M. LaBelle, Kelton A. Meyer
"Gearing Up" at the Johnson Folsom site in the Foothills of Northern Colorado

Russell Johnson discovered the Johnson Folsom site in 1936, which led Marie Wormington and the Colorado Museum of Natural History to test the site later that year. Over the following 25 years, additional field parties excavated the site, culminating in Gene Galloway and George Agogino's 1961 Plains Anthropologist publication on the site assemblage. Since that time the site has received little attention, in part because no one knew what happened to the artifacts. The collection from the 1936 work was recently located and formally analyzed for this project. The Johnson collection contains mostly tools, including Folsom points, preforms, channel flakes, end scrapers, gravers, other flake tools, and debitage. Later cultural components are also known from the site. The discarded Folsom weaponry is made of high quality raw materials, much of it from non-local sources, while the preforms are made of local quartzite of moderate quality. The site represents a retooling or "gearing up" locale in the foothills of the Rocky Mountains. Our presentation provides the results of our analysis, as well as a site overview based on our recent fieldwork.

Craig Lee and Beth Horton
Ice Patches, Aerial Photography, and a Triennium of Challenging Conditions in the Greater Yellowstone

Changing climate is causing perennial ice patches at high latitudes and high elevations to melt, resulting in the release of ancient paleobiological and archaeological materials that, until recently, were in cryogenic-like stasis. Organic artifacts emerging from ice include basketry, leather and hair cordage, and millennia-old wooden shafts once used for hunting. Ice patches are also releasing stone tools, plants, and the remains of animals. The exposure of ancient archaeological and paleobiological materials in the Greater Yellowstone Area is a tangible indication of climate change in the Rocky Mountain West. The well-preserved materials hold clues about past and present climate change, and speak to how indigenous populations interacted with high-elevation landscapes. Areas that today are often characterized as "empty" wilderness were home to groups of Native Americans for millennia. While enormous loss has likely occurred, increased snow loads at some ice patches suggest there is still time to engage with these features in a thoughtful manner. Yellowstone National Park has been a strong supporter of this research, and the talk will highlight ongoing efforts there.

Rebekah Link, Bonnie L. Pitblado
A Potential Game Drive South of Lake City, Southwest Colorado

While conducting a survey south of Lake City, Colorado, near Yaeger Gulch, an area with many interesting characteristics caught our attention. We believe those interesting features are parts of an indigenous game drive because they include a linear array of juniper logs that would have been useful to direct animals, a juniper post purposely embedded in the ground, and multiple projectile point pieces. We envision people having driven elk or bighorn sheep--both common in the area today--through the logs and natural boulders and to a steep, rocky drop off. After researching and visiting other game drives in the surrounding Gunnison Basin, it seems possible that drive strategies similar to those documented in the Great Basin and elsewhere in the Rocky Mountains were also implemented here. Even if this is not a formal game drive, it is likely that the juniper wood served as infrastructure for a series of hunting blinds.

Dan MacNulty
Implications of The Wilderness Concept for Understanding the Ecology of Yellowstone National Park

National parks and other protected areas are often conceptualized by the public and the scientific community as wilderness landscapes where human presence is, and always has been, negligible or non-existent. This perspective has led many observers to treat these areas as ecological baselines, or reference states, against which human-dominated landscapes are compared. As baselines, protected areas also provide goals for ecological restoration, including large carnivore reintroduction. However, the validity of the wilderness concept as a basis for ecological inference and management is questionable given that many protected areas have a substantial record of historic and prehistoric indigenous human presence. Ecological studies of these areas in a contemporary context, including those that attribute changes in biodiversity to the top-down effects of large carnivores, have mostly overlooked the (pre)historic presence of indigenous peoples and their role in shaping biodiversity. I explore the gap between the wilderness concept and the record of indigenous presence within the context of a long-term study of the ecological impacts of wolf reintroduction in Yellowstone National Park. I argue that a deeper understanding of the forces that structure ecosystems requires greater communication and collaboration between ecologists and scientists in the historical disciplines.

Houston Martin, Kenneth P. Cannon
A Preliminary Bone Preservation Suitability Model Using Fuzzy Logic Overlay Analysis for Jackson Hole, Teton County, Wyoming

We present a preliminary bone preservation model for the Jackson Hole region. Using a GIS-based fuzzy logic overlay analysis, we incorporate data concerning both areas with potential for buried archaeological materials, as well as the physical and chemical properties of the soils and their impact on preservation. The latter includes landforms that are unlikely to host buried archaeological sites, such as areas with surficial Pleistocene deposits, bedrock exposures, or exhibiting high slopes, while the former includes taphonomic factors that influence the preservation of bone, including the impacts of tree-tip outs, soil alkalinity/acidity, erodibility, drainage, and frost action. Through this GIS analysis, we identify areas where osseous materials may not preserve or be subject to increased rates of deterioration. Likewise, the model also identifies suitable locations for such materials to be intact. This illustrates that taphonomy must be considered carefully when attempting to reconstruct past human behavior or pre-contact biogeography of species such as *Bison bison* in the Greater Yellowstone Ecosystem.

Gideon Maughn
Edible Plants of the Snake River Plain

While archaeologists may find evidence of the dietary exploitation of both flora and fauna in the archaeological record, faunal remains have received considerably more attention in research than non-domesticated flora. Notable applications include interpretation of lifeways, dating, and description of

environmental contexts. To interpret environmental contexts, we must recognize that plants autocorrelate both spatially and temporally, shifting in their relative proportions dependent on temperature and moisture. Notably, among shrubs, saltbrush fairs better among xeric and saline conditions, while sagebrush fairs better among less saline and more mesic conditions; palynologists have used the fact to describe climatic shifts in the Great Basin. We propose that differences in the relative proportions of various plant species in the diet may provide evidence of spatial and temporal differences in environment. We provide an overview of various edible plants in the northern portion of the Snake River Plain. We rank plants by return rates, and project general hypotheses about relative proportions of plants included in the diet at various times in the prehistoric past based on how these return rates might fluctuate in response to decadal changes in average temperature and precipitation.

Riza J. McClurkin
Analysis of Projectile Point Chronology on the MIller Flats, Colorado

The Miller Flats are located in Hinsdale County, south of Lake City, Colorado and have been more or less continuously used for about 10,000 years. In early June 2019 our OU team of archaeological field school students did surface surveys of the Miller Flats and identified tips and bases of twenty-two projectile points of various raw materials. We identified points, when possible, based on bifacial flaking patterns and general shape, while bases specifically were identified by their notches, ears, or stems. I served as lithic illustrator for our group, and I point-provenienced and drew each projectile point specimen we found in the field. Of the twenty-two total points we located and I illustrated, eight were diagnostic to type and the collection ranged in age from 9,500 to 200 years old. This poster overviews and discusses those projectile points and the archaeological chronology they represent.

Lupita Mendoza, Amber Vinson, Meghan Dudley
An Experimental Study of “Netherstones,” Lake Fork of the Gunnison Valley, Colorado

Our poster reports on an experimental study of ephemeral groundstone referred to as “netherstone”by most Colorado archaeologists. Mobile hunter-gatherers who used the Colorado Rockies, including our 2019 OU Archaeology Field School project area in the Lake Fork Valley, created netherstones by using local river cobbles for grinding, rather than shaping and carrying around heavy, formal groundstone tools. To evaluate netherstone technology experimentally, we collected natural river cobbles from a nearby alluvial deposit and used it to grind Siberian pine nuts for 1 hour, 3 hours, and 6 hours. We then examined the usewear signatures left behind on the river cobbles using a Dino-Lite microscope at 65X. Our poster presents the results of our work and discusses the implications of our findings for netherstones from archaeological contexts.

Christopher W. Merritt
Japanese Railroad Worker Archaeology in Central Utah

Now that the 150th Anniversary of the Transcontinental Railroad has passed, and the incredible highlighting of the Chinese worker’s role, it is important to continue adding untold stories to the historical and archaeological narrative. After the anti-Chinese immigration push of the late 19th century, railroads replaced those workers with Japanese immigrants throughout the West. By 1910, nearly 1/5 of all railroad workers in the West were of Japanese descent. Archaeologists are now beginning recognize the material culture signature of the Japanese workers in central Utah, in Millard and Juab Counties in partnership with the Utah School and Institutional Trust Lands Administration and Bureau of Land Management.

Kelton A. Meyer
Spatial Classification of Intercept Areas at the High Grade Game Drive (5BL148), Rollins Pass, Colorado.

The High Grade game drive site (5BL148) is a spatially complicated mosaic of stone features (walls, blinds, and cairns) situated within a landscape-level complex of 12 alpine hunting sites near Rollins Pass, in the Front Range of Colorado's Southern Rockies. Time-diagnostic artifact types, radiocarbon dates on bone and charcoal, as well as lichenometric dates on stone walls all suggest that Native American hunter-gatherer groups intermittently occupied High Grade between the Early Archaic and Protohistoric periods. This paper considers changes in the spatial structure and function of the drive system over the course of its occupational history, based upon an analysis of multiple game intercept areas and the orientation of stone alignments. The results of the spatial analysis indicate that hunting groups periodically constructed new intercept areas at the site, while also abandoning use of other stone features in the drive system during reoccupation events.

Kelton A. Meyer, Jason M. LaBelle
Familiar Faces in Northwestern Colorado: 3D Reconstruction of Clay Fremont Figurines from Rat Midden (5MF14) and 5RB1879.

Northwestern Colorado is often argued as peripheral to the core distribution of Fremont agricultural sites known from the Uinta Basin and Tavaputs Plateau of Utah. However, dense concentrations of Fremont rock shelters, middens, corn granaries, overlooks, and rock art sites are known from the lower White and Yampa river basins of Colorado. Anthropomorphic clay figurines, however, remain rare finds and the few examples known from Colorado are largely incomplete and provide a challenge to explore manufacture characteristics and morphological attributes. This poster presents a digital reconstruction of two fragmentary clay heads and a broken torso, encompassing at least one figurine from the Rat Midden site (5MF14) within Castle Park in Moffat County, and another from an open multicomponent campsite in Rio Blanco County. Structure from Motion (SfM) photogrammetry is used to generate a 3D dataset of the artifacts, allowing for in-depth classification of facial characteristics and other traits that can be compared to more complete examples of Fremont forms, such as the well-known Pilling figurines.

Matthew Neff, Rachel Channell, Lawrence Todd
Archaeological Post-Fire Assessment, Documentation, and Monitoring

Large, intense, wildland fires in the 21st Century have presented Rocky Mountain archaeologists with opportunities and challenges. While destruction of wooden structures such as game traps and timber lodges can be part of such fires, a more common impact is to the near-surface archaeological record. Post-fire artifact and feature visibility increases dramatically. Since many recent fires have taken place in Wilderness areas where little or no archaeological inventory has been conducted, the materials exposed often provide the first glimpse into an areas prehistoric archaeological record. Once exposed, however, the record is susceptible to a variety of threats including looting, rapid deterioration of organic materials, trampling, and erosion. Examples of post-fire archaeological assessment efforts and results, as well as longer-term condition monitoring work on the Shoshone National Forest, NW Wyoming illustrate some of the potentials and frustrations associated with working in burned areas.

Kendra Nichols, Robert Goddard, Erin Haycock, Nathan Greiner, David Byers
Recent Survey on the Eastern Snake River Plain

Our poster presents the results of two seasons of survey in an area of the eastern Snake River Plain at the mouth of the Birch Creek drainage. We document a prehistoric cultural landscape that includes Archaic and Late Prehistoric occupations, as well as a relatively large and dense concentration of Paleoindian materials. The survey protocol included the collection of not only spatial information, but also complete records of material types for debitage and tools. Here we compare period specific settlement patterns and toolstone use. Our results suggest that, when compared with the later periods, Paleoindians located themselves differently on the landscape, favored different toolstones, and consequently may have followed different mobility patterns.

Bonnie L. Pitblado
FLOOD WARNING! Evacuating the Historical Hinsdale County Museum, Colorado, May 2019

Exceptionally high avalanche activity in winter 2019 created more than 200 natural dams of streams in the high country surrounding Lake City, Colorado. In early spring, the Colorado governor declared a state of emergency for Hinsdale County based on consequent flooding fears, and an emergency management team set up its headquarters in town. Some Lake City residents evacuated the region, others moved to higher ground, and volunteers helped fill thousands of sandbags to shore up key buildings and homes. The Hinsdale County Museum, too, found itself in the prospective flood's "red zone." This poster describes a coordinated town, county, state, and federal effort to secure storage space for more than a million documents, photographs, ethnographic and historic objects, and archaeological finds, and to physically move the objects to safety. Crews eventually dislodged enough of the avalanche debris to prevent wide-scale flooding, and the museum's collections are currently being moved back to the museum. The evacuation created a superb opportunity to create a coherent accession system for all the museum's materials, so that post-crisis, they are in better shape than ever before.

Bonnie L Pitblado, Meghan J Dudley
Symposium: Recent Research in Gunnison, Hinsdale and Mineral Counties, Southwest Colorado

The summer 2019 University of Oklahoma archaeological field school was based in Hinsdale County, Colorado. Students participated in two limited test-excavations and survey of a parcel along the Lake Fork of the Gunnison River, and in teams or individually conducted independent field research. This poster session showcases the results of student and staff independent research, which collectively encompasses three counties in Southwestern Colorado and extends chronologically from the Late Paleoindian through Historic eras. Projects include synthetic explorations of rock shelters and spiritually significant sites in the Gunnison Basin; site-specific studies of Euro-historic, game drive, and high-altitude ceramic-bearing localities; and artifact-level analyses of the projectile point, debitage and obsidian assemblages of the 2019 survey area. Two additional posters report on the emergency evacuation of Hinsdale County Museum collections in the face of imminent flood danger in May 2019 and an experimental archaeological study of pine-nut grinding and its archaeological traces.

Noah Place, Cody Webster
Debitage Montage, Gatekeeper Site, Colorado Rocky Mountains

When surveying the Gatekeeper Site near the Lake Fork River in Gunnison County, high densities of lithic materials seemed to follow a pattern topographically. We hypothesized that there would be clusters with a greater concentration of chert higher up the slope, and clusters with a greater amount of quartzite

lower. To investigate this, we conducted an in-field lithic analysis of 872 Gatekeeper flakes. Although there was no correlation between material type and elevation, there were pertinent results regarding the material type, number of dorsal scars and flake size. On average, quartzite flakes were larger and had fewer dorsal scars than their chert counterparts. Our poster reports details of our analysis and offers interpretations of our results.

Anali Rappleye
The Scenic Route: Historic Filming Locations of Utah

Utah has been a home to the Hollywood film industry since the 1920s. The unique landscape has provided the film industry with awe-inspiring options for creating iconic scenes in television and movies production. The Utah Division of State History's Antiquities Section has identified the shooting locations of 570 films and counting. This research has identified temporal trends in the industry from including the change of location preference to shifts in movie genres, such as the early dominance of Westerns to comedies, horror, and drama. These early locations are now a part of the archaeological record as sets have been abandoned and forgotten. It is important to know where these film sites are in order to properly understand the full context and history of a space.

Morgan Robins
Luminescence Dating of the Dinwoody Bison Jump, Wind River Mountains, Wyoming.

The Dinwoody Bison Jump complex was discovered at 11,000 ft. in the Wind River Mountains during the 2015 field season and documentation has continued annually. The site consists of a grazing area, a 1.6km system of three converging drivelines with classic doglegs, an obscuring ridge, a scarp, butchering area, thousands of pieces of debitage, and a shaman structure. The jump is associated with a vast complex of campsites and lodge pad village sites. Diagnostic artifacts from Folsom through Late Prehistoric and into the Protohistoric have been documented in those sites. Lacking any diagnostic artifacts or a bone bed in the shallow soil to provide radiocarbon dates, the age of the bison jump was unknown. In September 2018, in partnership with the Utah State University optically stimulated luminescence (OSL) lab, soil samples from several stacked stone cairns and hunting blinds in the three drivelines were collected for luminescence dating. The results place the jump firmly in the Late Prehistoric period and support hypotheses of construction and maintenance sequences during use and re-use of the jump complex. OSL evidence indicates that the jump was last used shortly before the reservation period in the Wind River Valley below.

Sally Robinson, Chandler Cheairs
Southern Pottery in the San Juan Basin of Mineral County, Colorado

In 1994, a private collector found an assemblage of Ancestral Puebloan pottery (corrugated and black-on-white) on a luxury guest ranch in Mineral County, Colorado. According to state site records, this is the only occurrence of pottery documented in that county, and it was located in the northeast of the traditional "Southwest" culture area where Ancestral Puebloan pottery is commonly found. In this poster, I report on the pottery and the now-documented site on which the collector found it. I also offer possible explanations for and interpretations of its occurrence at 2680 meters above-sea-level in the Colorado Rocky Mountains.

Trista Schiele

Landscape-Scale Processes in the Space-Time Dynamics of the Uinta Fremont Agricultural Transition in Eastern Utah and Northwestern Colorado

Recent work in Utah's northern Uinta Basin shows close relationships between precipitation variability and population dynamics during the Fremont period, AD 300-1350. In this study, I evaluate the role that precipitation variability had on observed regional settlement patterns and community formation. I test Finley et al.'s (2019) model for community development in Cub Creek, Utah across the larger Uinta Basin and its periphery by creating two Kernel Density Estimation (KDE) models using radiocarbon data anchored in space and time. I conclude that while precipitation variability plays a role in the initial adoption of domesticates, the breakdown of precipitation variability does not appear to be directly associated with community development or increasing population densities across the study area. Rather, this research instead supports the idea that community formation and increased population densities reflect more discrete systems related to aspects of the foraging and farming opportunities specific to the ecological structure of smaller regions across the study area. In a broad sense, this research addresses socioeconomic changes in forager-farmer subsistence and settlement strategies within a context of emergent agriculture and high-resolution, multidecadal climate variability.

Ethan P. Ryan
New Interdisciplinary Research at 48PA551, a Middle Holocene Housepit Site of the Wyoming Rocky Mountains

The Middle Holocene in North America is recognized as a time of continent-wide cultural innovation and experimentation that included the appearance of villages and sedentism to ritualized behavior and complex earthwork constructions. However, within the Rocky Mountain region, the Middle Archaic is poorly understood though scholars have long recognized it as time of cultural diversity. Therefore, multi-disciplinary research is being designed to assess alternative models of McKean Complex socioeconomic adaptations at 48PA551 with specific studies focusing on geophysical investigations, dating and stratigraphy, lithic technological organization, paleoethnobotany, and faunal analyses. To support this next research phase of the project, collections research on the originally excavated materials from the initial site investigations in the late 1960s, 1970s, and 1980s is necessary. This presentation serves as an update to the project's findings outlining new discoveries and future directions of research.

Whitney Seal
Rust Is the New Black

Between the 1950Ã¢??s and 1970Ã¢??s The Utah State Prison disposed trash one mile away on a bluff overlooking the Jordan River. Historical research suggests this area was a frequent spot for prisoners to escape or hide contraband. The topic of escape and contraband at this dump was even a focus for the 1972 run of Calvin Rampton for Governor. Archaeologists with the Utah Division of State History conducted a detailed inventory of the dump by analyzing discrete concentrations. The primary objective of this project is to have a more nuanced understanding of inmate life in prisons, and is the first such type of research in the state.

Christian Thomas, Valerie Monahan, Claire Alix, Jen Herkes, Carcross/Tagish First Nation and Kwanlin Dun First Nation, Ty Heffner
The Alligator Lake throwing dart: New insights into ancient hunting technology from Yukon Ice Patches

In the mountains of the Yukon, northern Canada, mountain ice patches have been melting and revealing a 9,000-year record of First Nations' hunting weapons. Included in these assemblages are dozens of lost hunting arrows and the fragmentary remains of more ancient hunting spears referred to as throwing darts or atlatl darts. For 20 years the fragmentary remains of this locally extinct technology have been recovered from a variety of sites across southern Yukon. For the first time in the summer of 2018 a complete, and entirely intact throwing dart was recovered from the overlapping territories of the Carcross/Tagish and Kwanlin Dun First Nations. This specimen is crafted from three separate pieces of wood and features an intact stone point, sinew bindings and carefully applied fletching. In this poster we describe the construction and design of this weapon and new insights on previously made discoveries.

Lawrence Todd
When Wilderness and Culture Collide: Documenting Prehistoric Archaeology in the Washakie Wilderness, Shoshone National Forest, Wyoming

When the Wilderness Act was enacted in 1964, the now classic definition of wilderness, in contrast with those areas where man and his works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain, and was seen as a way to help protect a portion of US Federal lands from development. Unfortunately, this vision for future protection has been incorporated into most Wilderness management considerations as if it also described the long-term past dynamics of human interactions with these now remote, and since roadless, often considered inaccessible, landscapes. Results of a backcountry research project began in 2002, when only a single prehistoric archaeological was documented in NW Wyoming's nearly 285,000 ha Washakie Wilderness, as well as other high country investigations have clearly demonstrated that at the century to millennial scale, the humans as a "visitor who does not remain" notion is a severely inaccurate, misleading characterization of the mountain paleoecology. Incorporation of multi-species cultural dynamics, at multiple temporal and spatial scales into Wilderness discussions can provide a more holistic (and realistic) approach to management.

Lawrence Todd, Daniel Dalmas, Jack Hofman, John Rapes, Matthew Neff, Rachel Channell, William Dooley
A High Elevation Game Drive Complex, Washakie Wilderness, Shoshone National Forest, Wyoming.

Frison (1978:258-262) presents a succinct overview of the Boulder Ridge animal trap (48PA781). As part of a 2019 inventory project looking at archaeology along recently mapped large ungulate migration corridors, the site and a series of functionally related features were revisited, and an updated documentation (including mapping and individual description of each of the 2395 stones and 74 logs and stumps that make the drivelines) was completed. In addition to the features, previously unreported distributions of chipped stone artefacts and debitage add to our potential to interpret the 48PA781's age and use. Rosegate arrow points directly associated with the drive lines suggest Late Prehistoric use at least 1000 years ago and dart points in the site area hint to earlies use. Samples of wooden components of two of the structures were collected and have been submitted for radiocarbon dating. A series of other stone lines, cairns, blinds, and wooden features were also recorded stretching for nearly 5km along the crest of the ridge where 48PA781 is located. These range in elevations from 2900-3100m and attest to a diversity of high elevation hunting methods.

Martin H. Welker and David A. Byers
The Birch Creek Canids and Dogs as Transport Labor in the Intermountain West

Domestic dogs *(Canis familiaris)* were common features of Native American communities in the Intermountain West and Great Plains. Some of these dogs were reportedly bred specifically for the large size and stamina needed to transport shelters, equipment, firewood, and food on *travois* and in pannier-style packs. Ethnographic accounts frequently highlight the significance of dogs in Intermountain West and the plains mobility, and report dogs transporting loads of as much as 45 kg (100 lbs). Using body mass estimates generated from skeletal morphometric data to approximate prehistoric and historic dog load capacities for travois and pannier-style packs in the Intermountain West, Great Plains, and Great Basin we evaluate whether archaeological dogs were capable of ethnographically reported loads. Specimens of large dogs recovered from the Veratic Rockshelter in Idaho dating to at least 3,000 years, and dogs from Great Plains assemblages indicate the animals could carry weights comparable to ethnographically recorded loads. These data have important implications for our understanding of prehistoric mobility in the Intermountain West and the Great Plains and suggest that dogs may have been used in transporting cargo for several thousand years.

Jessica D. Wriedt, Jack de Morgan, Ashley Hansen Neff, Scotia Palmer Mullin, Sashuan Armbrister, Kody Rolle, Rachael Shimek, Mary Lou Larson, Marcel Kornfeld
Hell Gap 2019 Season: Preliminary Report

The 2019 season excavation at the Pleistocene/Holocene transition Hell Gap Paleoindian site marked a significant milestone in research. The excavation of units surrounding the witness block, which were initiated in 1999, was completed. All units reached sub cultural, late Pleistocene strata, greater than ~13,000 years in age that precede Clovis occupation of North America. These strata have not yielded any cultural material at Hell Gap in previous excavations. Because we focused on the subcultural sediments, the artifact recovery was minimal, but information yield was enormous. An adjacent unexcavated block to the east, where excavation begun in 2014, yielded significant additional information on the Agate Basin component of the site. Preliminary results of the work are presented.