

PROGRAM & ABSTRACTS

2017 ANNUAL MEETING

WYOMING ARCHAEOLOGICAL
SOCIETY AND
WYOMING ASSOCIATION OF
PROFESSIONAL ARCHAEOLOGISTS

Cody, Wyoming

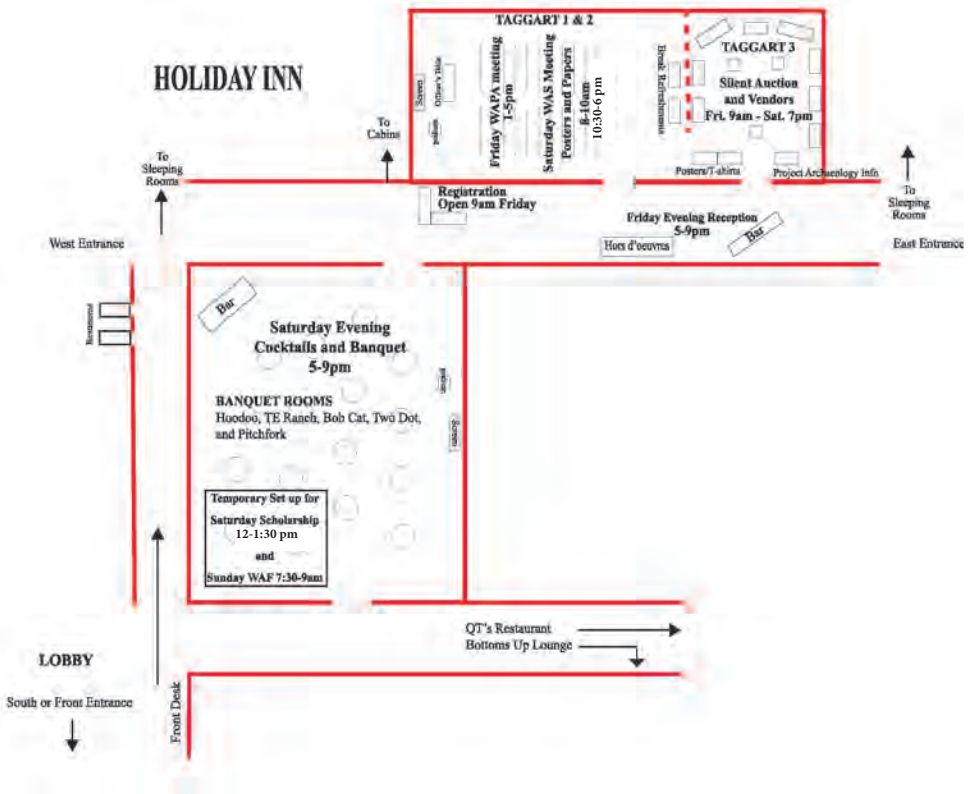
May 5-7, 2017



Wyoming Archaeology

HOSTED BY

The Absaroka Chapter of the Wyoming Archaeological Society is pleased to host the 2017 Spring Meeting of the Wyoming Archaeological Society (WAS) and Wyoming Association of Professional Archaeologists (WAPA) at the Holiday Inn Cody, 1701 Sheridan Ave., Cody, WY 82414, Phone No. 1-307-587-5555, <https://www.ihg.com/holidayinn/hotels/us/en/cody/codwy/hoteldetail>.



COVER PHOTO: The cover photo is courtesy of Judy Wolf, Wyoming State Historic Preservation Office. The photo shows the T-shirt design for the 2017 Wyoming Archaeology Awareness Month T-shirts available from Wyoming SHPO.

2017 SPRING MEETING
MAY 5-7, 2017
SUMMARY SCHEDULE

Friday, May 5, 2017

WAPA Meeting	1:00-5:00 pm
Poster Set-up	5:00-6:00 pm
Welcome Social	5:00-9:00 pm

Saturday, May 6, 2017

WAS Business Meeting	8:00-10:00 am
Paper Presentations	10:30-11:50 am
LUNCH	11:50 am-1:40 pm
Scholarship Committee Meeting	12:00-1:30 pm
Paper Presentations	1:40-3:20 pm
BREAK	3:20-3:40 pm
Paper Presentations	3:40-5:00 pm
Poster Presentations *and during meeting breaks	5:00-6:00 pm*
Evening Social	5:00-6:30 pm
BANQUET	6:30-9:00 pm

Sunday, May 7, 2017

WAF Meeting	7:30-9:00 am
Field Trip	9:00 am-TBD

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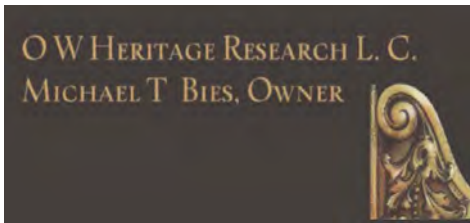
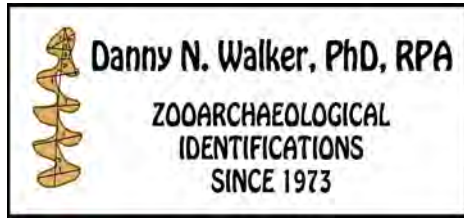
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MEETING SPONSORS

- The Absaroka Chapter of the Wyoming Archaeological Society
- Mike Bies, OW Heritage Research
- The Wyoming Association of Professional Archaeologists (WAPA)
- Dr. Danny Walker, Zoological Investigations
- Office of the Wyoming State Archaeologist
- Cody Local Businesses-watch for sponsorship signs over the weekend



GENERAL INFORMATION

Meeting Headquarters

All meeting events will be held at the Holiday Inn, 1701 Sheridan Ave., Cody, WY 82414. Call 1-307-587-5555 for more information.

Registration

Meeting registration and packet pickup will begin as early as 9:00 am on Friday, May 5, at the Holiday Inn. Tables will be set up in the breezeway by the Taggart Rooms. Signage will direct you.

WAPA

The WAPA meeting is 1:00–5:00 pm, Friday, May 5, in Taggart Room 1.

Welcome Social

The Welcome Reception is Friday, May 5, from 5:00-9:00 pm at the Holiday Inn by Taggart Rooms 2 and 3. The “Early Bird Cocktail Party” is a no-host cash bar, and appetizers will be available.

WAS Business Meeting

The WAS business is 8:00-10:00 am, Saturday, May 6, in Taggart Rooms 1 and 2.

Paper and Poster Presentations

Oral presentations are Saturday, May 6, from 10:30 am-5:00 pm. Poster presentations are scheduled for May 5 to 6 during break times, and May 6 from 5:00-6:00 pm. All presentations will be in Taggart Rooms 1 and 2.

Silent Auction

The annual silent auction is in Taggart Room 3. The auction allows you to bid on items you cannot possibly live without. The auction will be open Friday, May 5, from 12:00-9:00 pm and Saturday, May 6, from 8:00 am to 7:00 pm. If anyone would like to donate auction items, please contact Sylvia Huber at 307-527-7523 or eagleofcody@tctwest.net.

Scholarship Committee

The Scholarship Committee meets from 12:00-1:30 pm, Saturday, May 6, in the Holiday Inn Boardroom. A limited menu is available.

Wyoming Archaeological Foundation

The Foundation Board meeting is Sunday, May 7, from 7:30-9:00 am in the Holiday Inn Boardroom. You may order from the menu. All are welcome.

BANQUET

The banquet will be in the TE Ranch Room on Saturday, May 6, at 6:30 pm. The keynote speaker for the banquet is Dr. Don Wyckoff. Dr. Wyckoff will be giving a talk entitled “Calf Creek: Middle Holocene Hunter-Gatherers on the Southern Plains.”

DR. DON WYCKOFF



Raised in north-central Kansas, I attended the University of New Mexico before transferring to Oklahoma University where I attained my B.A. (1961) and M.A. (1968) in anthropology. From 1962 to 1968 I was the principal archaeologist doing reservoir salvage archaeology in Oklahoma. From 1968 to 1981 I was the first State Archaeologist for Oklahoma, and from 1981 to 1996 served as Director of the Oklahoma Archaeological Survey. From 1996 to 2011, I held the joint position of professor of anthro-

pology at OU and Curator of Archaeology for the Sam Noble Oklahoma Museum of Natural History. I attended Washington State University where my major was in the Quaternary Studies Option of the Anthropology program and received my Ph.D. in 1980. My initial research focused on late prehistoric villagers and mound builders in eastern Oklahoma, but since 1985 I have concentrated on hunter-gatherer sites dating from 4500 to 9800 years ago and on diverse localities where information could be gathered on past environments from 1500 to 40,000 years ago. My special interests are Southern Plains lithic sources and hunter-gatherer lithic technology. Although I retired in 2011, marking 50 years working as a public archaeologist for Oklahoma, I remain active with several research projects, including the evidence for a 300 year span of hunter-gatherers who made distinctive tool kits on the southern Plains during middle Holocene times. My hobbies include collecting old time country and bluegrass music, playing the guitar, and singing and playing with a fiddle playing member of the OU anthropological faculty.

Calf Creek: Middle Holocene Hunter-Gatherers on the Southern Plains

From the combined efforts of avocational and professional archaeologists, information is accumulating on the brief presence of a unique hunting-gathering people who occupied southern Kansas, Oklahoma, and Texas to south of the Rio Grande. The available radiocarbon dates cluster between 6000 and 5600 years ago. Where animal remains are found, they are typically those of *Bison occidentalis*, but as yet no major bison kills by these people have been found and investigated. While a few rockshelters have yielded traces of their material culture, these people are best known for major, probably repeated, encampments near preferred sources of chert. These materials were processed into large biface cores, and large flakes from these cores were heated to a glassy state and knapped into large spear

BANQUET

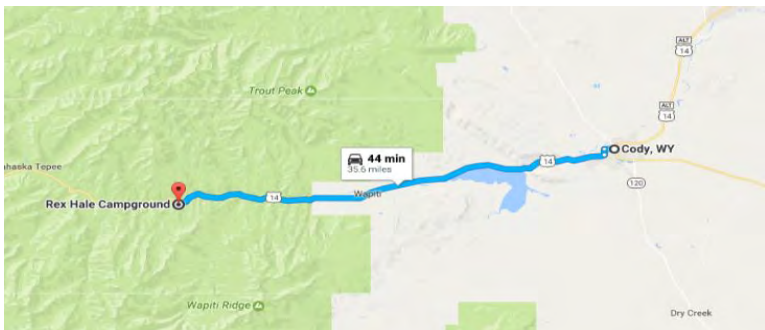
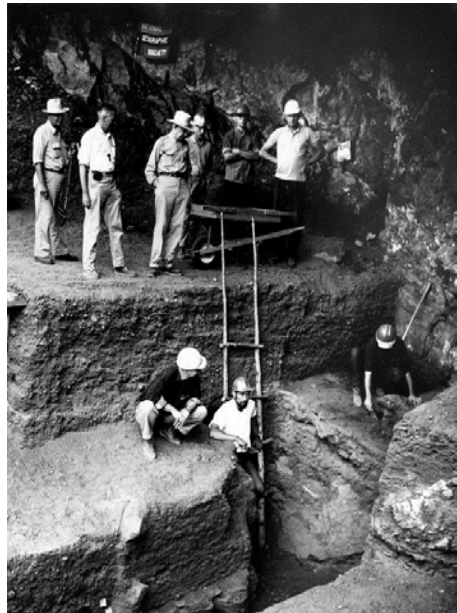
Calf Creek: Middle Holocene Hunter-Gatherers on the Southern Plains, Cont'd

points with basally notched hafts, resulting in 3 recognizable styles (Andice, Bell, and Calf Creek). A variety of scrapers, knives, and other tools were also made from heat-treated flakes derived from biface cores. Based on the favored use of particular cherts, band territories are becoming evident, and a few sites appear to attest to multi-band encampments. Compilations of information from Kansas, Missouri, Arkansas, Oklahoma and Texas, and a few isolated finds in New Mexico, Utah, and North Dakota are being developed into a major book which hopefully will be published in 2017.

FIELD TRIP

Friday and Saturday (May 5-6): On-your-own touring of Cody and the Buffalo Bill Center of the West. The Center is offering a discounted admission of \$10.00 for registered conference attendees.

Sunday (May 7): Drs. Robert Kelly and Marcel Kornfeld will lead a tour to Mummy Cave (48PA201) located near the east entrance to Yellowstone National Park. The field trip will leave the Holiday Inn at 9:00 am (weather permitting). We will caravan from the Holiday Inn in Cody, should you want to meet at the Rex Hale Campground, follow these directions and be there by no later than 9:45 am: From Cody, travel west on U.S. Highway 14/16/20 for 36 miles to the Rex Hale campground (about 18 miles from the East Entrance of Yellowstone National Park). Please wait at the campground until the rest of the caravan arrives. All vehicles will have to stay parked at the Rex Hale campground.



ORAL PRESENTATIONS

Saturday, May 6, 2017

10:30 am-11:50 am

MORNING SCHEDULE

10:30 am *THE CONTINUING SEARCH FOR A LOST INDIAN WARS MASS GRAVE IN CENTRAL WYOMING* by Danny N. Walker (University of Wyoming), Rory Becker (Eastern Oregon University), Dan Lynch (Amherst), Carolyn Buff (Wyoming Archaeological Society), and Steve Haack (Lincoln, NE)

10:50 am *MAPPING GHOSTS: USING GEOREFERENCING TO MAP WASHAKIE'S SHOSHONE CAMP AS SHOWN IN AN 1870 PHOTOGRAPH* by Nathaniel Guenther (Central Wyoming College/Aero-Graphics, Inc.)

11:10 am *THE DINWOODY BISON JUMP: COMMUNAL HUNTING AT 11,000 FEET IN THE WIND RIVER MOUNTAINS* by Morgan Robins (Central Wyoming College/University of Wyoming)

11:30 am *THE 2015 TABLE MOUNTAIN ICE PATCH PROJECT, GRAND TETON NATIONAL PARK, WYOMING* by Marcia Peterson (Office of the Wyoming State Archaeologist)

11:50 am-1:40 pm **LUNCH**

ORAL PRESENTATIONS

Saturday, May 6, 2017

1:40 pm-3:20 pm

AFTERNOON SCHEDULE

1:40 pm *11,000 YEARS OF HUMAN ADAPTATION TO CLIMATE CHANGE IN WIND RIVER COUNTRY* by Jordan Walter (Central Wyoming College)

2:00 pm *WHAT I LEARNED WRITING A HISTORIC CONTEXT: DIGGING UP OLD DATA AND COMPILING A NEW, COMPREHENSIVE, WYOMING PALEOINDIAN CHRONOLOGY* by Brigid Grund (University of Wyoming)

2:20 pm *MICROWEAR ANALYSIS OF THE EARLY PLAINS ARCHAIC AND CODY LEVELS AT THE LADDIE CREEK SITE* by Zach Garhart (University of Wyoming)

2:40 pm *PAINT ROCK V LITHIC DEBITAGE ANALYSIS: IMPLICATIONS FOR PREHISTORIC HUMAN DEMOGRAPHY AND MOBILITY STRATEGIES NEAR THE BIGHORN BASIN AND MOUNTAINS, WYOMING* by Laura K. Cannon (University of Wyoming)

3:00 pm *WHO WANTS A DOG'S LIFE? CANID COMPARATIVE SKELETAL PATHOLOGY* by Rachael L. Shimek (University of Wyoming)

3:20-3:40 pm

BREAK

ORAL PRESENTATIONS

Saturday, May 6, 2017

3:40 pm-5:00 pm

AFTERNOON SCHEDULE, CONT'D

3:40 pm *THE UWAR BEAD COLLECTION: OH MY!* by Heidi Van Etten (University of Wyoming)

4:00 pm *SPIRAL PETROGLYPHS AND THE SOLSTICE: ARCHAEOASTRONOMY IN THE WIND AND BIGHORN RIVER BASINS* by Sara Bales and Bailey Lewis (Central Wyoming College)

4:20 pm *WITH LANDOWNER'S PERMISSION: USING PRIVATE COLLECTIONS TO EVALUATE PUBLIC LAND ARCHAEOLOGY IN CROOK COUNTY, WYOMING* by Christopher M. Rowe (University of Wyoming)

4:40 pm *A BRIEF ANALYSIS OF CHINESE SETTLEMENTS IN SOUTHWESTERN WYOMING FROM 1868-1900* by A. Dudley Gardner, PhD

ORAL PRESENTATIONS

Saturday, May 6, 2017

Paper Abstracts

Bales, Sara, and Bailey Lewis (Central Wyoming College)

Spiral Petroglyphs and the Solstice: Archaeoastronomy in the Wind and Bighorn River Basins

The Central Wyoming Field School discovered a spiral petroglyph, reminiscent of those common in the desert southwest, on a large boulder in the foothills of the Absaroka Mountains. Sighting from the spiral, over the point of an adjacent boulder, leads to a series of cairns on high points extending at least four miles to the southeast. The fact that similar petroglyphs in Chaco Canyon, New Mexico are associated with a variety of astronomical events caused field school students to wonder whether this is a calendric site. Other researchers have documented that a similar petroglyph near Thermopolis marks the Summer Solstice. This paper discusses the results of student research on four possible calendric petroglyph sites near Lander, Meeteetse, and Hyattville, Wyoming.

Cannon, Laura K. (University of Wyoming)

Paint Rock V Lithic Debitage Analysis: Implications for Prehistoric Human Demography and Mobility Strategies near the Bighorn Basin and Mountains, Wyoming

Paint Rock V is a well-stratified rockshelter on the western slopes of the Bighorn Mountains in Wyoming. Lithic materials and radiocarbon dates from two excavation units suggest that hunter-gatherers occupied the site consistently from ~7731 cal yr BP to the Late Prehistoric Period, with two intensified occupations. This research compares the frequencies of debitage to the current prehistoric human population curve for the Bighorn Basin, showing that people occupied Paint Rock Canyon most intensively during times of increased aridity and low regional human populations. The results indicate that Paint Rock Canyon may have been an optimal place to forage during arid times. A comparison of the two intensified occupations shows no significant change in the use of the shelter over time; instead, the shelter was probably always used as a short-term logistical hunting camp.

ORAL PRESENTATIONS

Saturday, May 6, 2017

Paper Abstracts

Gardner, A. Dudley, PhD

A Brief Analysis of Chinese Settlements in Southwestern Wyoming from 1868-1900

Chinese settlements in southwestern Wyoming exhibit unique material cultural remains. By 1885, Chinese immigrant populations in Southwestern Wyoming had developed a well ordered, sophisticated interaction sphere that extended to most mining and railroad communities in southern Wyoming. This presentation looks at how the archaeological evidence from Chinese settlements in Southwestern Wyoming indicate that a distinct social structure had evolved that was functional and interconnected. Both the archaeological and historical records give a good indication of how space was ordered in Chinatown and how Chinese individuals were linked together over a broad area to acquire critical resources. That ability to acquire critical resources enabled Chinese immigrants in the nineteenth century to survive in the unique natural environment of Southwestern Wyoming.

Garhart, Zach (University of Wyoming)

Microwear Analysis of the Early Plains Archaic and Cody Levels at the Laddie Creek Site

Early Plains Archaic and Cody complex behavior is interpreted through microwear data from the tools recovered from the Laddie Creek site, which is located in the western foothills of the Bighorn Mountains. The primary assumption of microwear studies is that the direction in which a tool was used and worked material can be inferred by microscopic traces. Use-wear studies can define the range of activities conducted with stone tools by prehistoric peoples. Understanding the activities conducted by groups provides insight into how they may have operated, and offers a tool to compare groups from the same and different time periods. Common activities that occurred throughout the different levels of the Laddie Creek site include the working of hide and wood. The results are compared to previous microwear studies in the region.

ORAL PRESENTATIONS

Saturday, May 6, 2017

Paper Abstracts

Grund, Brigid (University of Wyoming)

What I Learned Writing a Historic Context: Digging Up Old Data and Compiling a New, Comprehensive, Wyoming Paleoindian Chronology

Despite that the relative Paleoindian chronology for Wyoming was established at Hell Gap half a century ago, we still lack a precise temporal understanding of many Paleoindian cultural complexes. The chronological syntheses that do exist generally combine dates from large swaths of the American West and/or only hone in on a single cultural complex. A generous internship through the Laramie, Wyoming, SHPO funded by Wyoming State Parks and Cultural Resources afforded me an opportunity to write a new historic context for the Paleoindian period in Wyoming. In this presentation, I will go through an abridged version of Wyoming Paleoindian historiography, hone in on a few interesting finds from old publications and reports that seem to have been largely forgotten, and present my chronological synthesis of radiocarbon dates associated with Paleoindian diagnostics specific to the Wyoming area.

Guenther, Nathaniel (Central Wyoming College)

Mapping Ghosts: Using Georeferencing to Map Washakie's Shoshone Camp as Shown in an 1870 Photograph

In September 1870, renowned frontier photographer, William Henry Jackson, took a remarkable series of photographs of Chief Washakie's Eastern Shoshone tepee camp in the foothills of the Wind River Mountains. These extraordinary images provide a view of site structure that archaeologists usually can only dream about. No visible surface evidence of this camp remains today. Recently, private landowners have refused public access to the site, which had never been recorded. CWC Archaeology and GIS students mapped the site using georeferencing tools and techniques in the Fall of 2016. This project demonstrates that modern geospatial techniques can be used to record sites which are inaccessible or no longer exist.

ORAL PRESENTATIONS

Saturday, May 6, 2017

Paper Abstracts

Peterson, Marcia (Office of the Wyoming State Archaeologist)

The 2015 Table Mountain Ice Patch Project, Grand Teton National Park, Wyoming

In August 2015, the Office of the Wyoming State Archaeologist with funding from the University of Wyoming-National Park Service Research Station, surveyed ice patches around Table Mountain on the western boundary of Grand Teton National Park. One historic archaeological site (48TE1983) was located. This site consists predominantly of artifacts from the 1930s to the early 1960s, but some earlier historic artifacts are probable. Extremely dense modern trash from recreational use of the area likely obscured identification of historic and prehistoric material. Also, bison bone was recovered melting from the ice patch that dates to around 900 years BP. Finally, two sticks were collected that have been identified as Douglas fir at 11,000 ft above sea level, almost 2,000 ft higher in elevation than where Douglas fir has been documented in Grand Teton National Park. This paper will present the findings of the 2015 survey in detail and their implications for future research.

Robins, Morgan (Central Wyoming College/University of Wyoming)

The Dinwoody Bison Jump: Communal Hunting At 11,000 Feet in the Wind River Mountains

The Dinwoody Bison Jump (48FR7682) is located at 11,000 ft. overlooking Dinwoody Canyon in the Wind River Mountains. This is extraordinarily high compared to the fewer than 30 other documented bison jumps and pounds recorded in SHPO files. Thirty years ago, the conventional wisdom was that prehistoric Native Americans (excluding a few sheep eater Indians) avoided the high country. Research since that time has documented extensive use of Wyoming's alpine regions by hunter gatherers. The Dinwoody Jump suggests another previously unrecognized adaptation at elevation-that of communal bison hunting. A 600 acre series of campsites dating between Folsom and Early Contact is adjacent to the jump. This paper presents the results of the Central Wyoming College Field School 2016 field work and lab analysis of the paleoecology and cultural resources of the Dinwoody site complex.

ORAL PRESENTATIONS

Saturday, May 6, 2017

Paper Abstracts

Rowe, Christopher M. (University of Wyoming)

With Landowner's Permission: Using Private Collections to Evaluate Public Land Archaeology in Crook County, Wyoming

With a majority of archaeological investigations now occurring on public land, it is necessary to ask if this provides us with an accurate representation of the past. While the University of Wyoming Archaeological Repository (UWAR) was able to provide data from public and some private land, in order to acquire broad, coarse-grained spatiotemporal data from private land, a series of "Artifact Roadshow" events were conducted. At these roadshows, over 800 privately held artifacts were recorded, many of them projectile points. Using projectile points as temporal markers, it became possible to compare patterns of land use over time between public and private land in eastern Crook County, Wyoming. The results of this comparison will be discussed.

Shimek, Rachael L. (University of Wyoming)

Who Wants a Dog's Life? Canid Comparative Skeletal Pathology

This talk presents the results of a pilot study to assess the comparative skeletal pathologies of captive and wild canids with the end goal of learning about humans' treatment of dogs in prehistory. Using methods borrowed from bioarchaeology and human osteology, the occurrence and frequency of different skeletal pathologies were tabulated in a modern comparative collection of dogs, dog-wolf hybrids, wolves, and coyotes. This pilot study focused on osteoarthritis, generalized periosteal reactions, and long bone fractures. The findings from the comparative study were assessed considering ethnographic information about the care and treatment of dogs in non-industrial societies. Finally, a sample of canid remains from archaeological sites in Wyoming were examined for signs of these and other skeletal pathologies.

Van Etten, Heidi (University of Wyoming)

The UWAR Bead Collection: Oh My!

A recent project updating the University of Wyoming Archaeological Repository's (UWAR) bead collection to make it more accessible for research brought about some interesting finds. Although beads are not common in the Repository collections, UWAR does house some fantastic beads. During my re-analysis of the beads, I identified some issues regarding cataloging, which followed the beads from excavation through curation. This paper will discuss those issues.

ORAL PRESENTATIONS

Saturday, May 6, 2017

Paper Abstracts

Walker, Danny N. (University of Wyoming)

The Continuing Search for a Lost Indian Wars Mass Grave in Central Wyoming

What happened in June 1865 during a battle between 20 United States soldiers, lead by 11th Kansas Volunteer Cavalry Commissary Sgt. Amos Custard, and 2-3000 Sioux, Cheyenne and Arapaho warriors at what has become known as the Battle of Red Buttes? Research since the 1920s has failed to reveal the exact location of the Battle of Red Buttes. A re-evaluation of the battle including additional archaeological field and archive research has been ongoing since 2005 but have still failed to locate the battle or the mass grave. Twenty-five hectares were surveyed with Bartington magnetometers in 2012 and 2016. While a four hour battle may have an ephemeral archaeological footprint, it should still be visible because of the battle activities (i.e., burned wagon parts). Field studies in 2016 yielded the best evidence to date for the battle location, but definitive evidence continues to be elusive.

Walter, Jordan (Central Wyoming College)

11,000 Years of Human Adaptation to Climate Change in Wind River Country

Archaeology students participating in the Central Wyoming College Interdisciplinary Climate Change Expeditions have documented extensive human use of the Dinwoody drainage system in the Wind River Mountains beginning with some of the earliest Paleoindian cultures at the end of the Pleistocene to the present. Cold-adapted cultures sought out the harsh, high alpine environment throughout episodes of continental warming or cooling. Andean cultures make annual pilgrimages to worship glaciers as sacred sources of water. The dense concentration of Dinwoody petroglyphs indicates that Native peoples have regarded the Dinwoody as sacred for thousands of years. Ethnographic research conducted for this project with the Eastern Shoshones confirms this interpretation, and reveals that recent discussions have occurred in which some Tribal officials have considered requesting that the US Forest Service close the area to recreation and archaeological research. Wind River Reservation governments, however, have no plans to adapt to the pressing impacts of climate change or imminent extinction of the glaciers. The National Park Service is assisting Tribes in Louisiana and Alaska with evacuation plans as their communities become uninhabitable. This paper poses questions about the future of the Shoshone and Arapaho Tribes in the Wind River Country.

POSTER PRESENTATIONS
Saturday, May 6, 2017
During Meeting Breaks & 5:00-6:00 pm

GENERAL POSTER SESSION

Organizer: **Peterson, Marcia** (Office of the Wyoming State Archaeologist)

The general poster session includes 11 posters on a variety of archaeological issues including bioturbation in the Shoshone National Forest, archaeological monitoring at Superfund sites, public archaeological projects on private land in Wyoming, some results from the 2016 field season at the Hell Gap site, settlement patterns of the Cajamarca Valley in Peru, and some results of work done as part of the Central Wyoming College Interdisciplinary Climate Change Expedition.

Dersam, Sari (Montana State University Graduate) and **Dr. Lawrence C. Todd** (Colorado State University Emeritus)

Rodent Burrows in 48FR7597, Shoshone National Forest

As stated by Bechberger (2010), pocket gophers have the capacity to expose previously unknown sites as well as give aid to land managers in assessing site significance and developing effective site testing plans. Do rodent burrow back dirt mounds provide a proxy for the quantity and distribution of artifacts underground? At site 48FR7597, a stone circle feature that had significant rodent activity was the object of study. A surface survey was conducted within the plot, recording several aspects of the lithic artifacts present. Next, rodent burrow backfill piles were excavated to ground surface and screened. The sizes and shapes of both artifacts and rocks are evaluated here to better understand the movement of artifacts and sediments as a result of pocket gopher activity. The frequencies of artifacts and sediments >1/4" as well as the size and shape are compared within and between rodent mounds.

POSTER PRESENTATIONS

Saturday, May 6, 2017

During Meeting Breaks & 5:00-6:00 pm

¹Garhart, Zach, ²Chris Griffith, ¹Karin Skinner, ³Tori Feldman, ⁴Franklin Norris, ⁵Zackery Scott, ¹Douglas Anderson, ¹Marcel Kornfeld, and ¹Mary Lou Larson (¹University of Wyoming, ²University of New Mexico, ³University of Central Florida, ⁴Marymount California University, ⁵University of South Florida)

Examining Early Paleoindian Strata: Hell Gap 2016

Current excavations of the Hell Gap site continue to clarify the Paleoindian cultural sequence. Excavations conducted during the summer of 2016 enhanced the delineation of the Folsom and Goshen cultural components through the recovery and analysis of over 1500 specimens, including: chipped stone tools, a Folsom preform and blade core, debitage, bison bone, ochre, and charcoal. Two distinct flake clusters were mapped and recovered in the Goshen cultural layer, the larger of which contained 378 specimens. A granite palette associated with a heavily worked ochre nodule was found in the Folsom horizon. More than 450 bones, many identified as *Bison antiquus*, were recovered. Identified elements include a horn core, two right mandibles, an articulated proximal radius and ulna, and two sets of 1st to 3rd cervical vertebrae articulations. Analysis indicates there is an MNE of 51 and an MNI of 2.

¹Garhart, Zach, ²Chris Griffith, ³Tori Feldman, and ⁴Michael Peterson (¹University of Wyoming, ²University of New Mexico, ³University of Central Florida, ⁴National Park Service)

From Refits to Butchery: 2016 Hell Gap Chipped Stone

A total of 1,060 chipped stone specimens were mapped and recovered during the 2016 excavations of the Folsom and Goshen cultural layers at Locality I of the Hell Gap site. Artifacts of note include a Folsom preform and blade core, a utilized flake, ten retouched flakes, two side scrapers, one spurred-end scraper, and debitage. Two distinct flake clusters were uncovered and mapped in the Goshen cultural layer, the larger of which contains 378 specimens. Our poster presents the preliminary results of the debitage analysis from the larger flake cluster. Examination of platform morphology, evidence of dorsal cortex, and dorsal flake scar count suggests bifacial tool production, rather than flake production. Preliminary Minimum Analytical Nodule Analysis cannot rule out that all the material derived from a single nodule. Four sets of refits and one conjoin have been found in the cluster. Use-wear analysis indicates that tools were utilized for butchery, wood-working, and hide scraping.

POSTER PRESENTATIONS

Saturday, May 6, 2017

During Meeting Breaks & 5:00-6:00 pm

Harris, Ashley (Central Wyoming College) and **Dr. Jason Toohey** (University of Wyoming)

Settlement Patterns of the Cajamarca Valley in Peru

The Cajamarca Valley of northern Peru saw changing settlement patterns throughout its nearly 4000 year human occupation. Archaeologists have categorized these archaeological sites into sequential time periods, a scheme still used today. Some sites were inhabited continuously, while others were occupied during different time periods. Although settlement pattern studies and spatial analysis have utilized Geographic Information Science (GIS) in other Peruvian regions, similar analysis for the Cajamarca Valley is lacking. This poster introduces a research project that will investigate shifting human settlement in the region through the application of GIS to existing settlement data.

Hartman, Grace, Shannon O'Sullivan, and Travis Adderhold (Central Wyoming College)

CWC's Interdisciplinary Climate Change Expedition (ICCE): Measuring Black Carbon, Water Quality, and Water Quantity in the Dinwoody Cirque

This research explores the hydrological and ecological impacts of climate change on Wyoming's high alpine environment, specifically the Dinwoody Cirque. Areas of emphasis include water quality, seasonal water flow, and measurements for effective black carbon (eBC). There are two prior seasons of CWC research data associated with water contamination and snow albedo, but this is the first data set to include flow data. The 2016 analysis for E.coli -- a surface bacterial indicator organism--revealed negative presence in all ten surface water samples, identical to the 2015 results. The 2016 water flow measurements were taken below the Dinwoody Cirque and ranged from .81 to 1.63 cubic meters per second (cms). These initial seven points provide comparable data to analyze the rate of future glacial melt. Black carbon, a powerful light-absorbing particle, is the strongest contributor in snow albedo reduction. Using field sampling and laboratory analysis methods provided by Dr. Carl Schmitt (National Center for Atmospheric Research), 22 samples were collected from glacial terrain and nearby snowfields. The values recorded for eBC for 2016 contrast sharply across years. Samples from 2014 and 2015 revealed an average value of 30ng/g of eBC, whereas the 2016 results indicated an average of 193ng/g. The reason for this increase is still being explored. Additional water quality, flow measurements, and black carbon sampling will be performed to document and assess the hydrological and ecological changes associated with glacial recession due to climate change.

POSTER PRESENTATIONS

Saturday, May 6, 2017

During Meeting Breaks & 5:00-6:00 pm

Nico Holt (Central Wyoming College/University of Wyoming)

Upper Dinwoody Projectile Points: Killing Tools from the Pleistocene to the Little Ice Age

Central Wyoming College archaeology students have discovered a series of pre-historic sites along most of the trail leading to Gannett Peak and the Dinwoody Glacier. These sites provide evidence that people have lived and foraged for food at elevations up to 12,500 feet above sea level in the Wind River Mountains. The oldest identified so far was part of the Goshen Culture, over 11,000 years ago and only recently arrived from Berengia at the end of the Pleistocene Ice Age. That site was identified by the type of spear point recovered there. Other projectile points are used to date sites through the entire span of human presence in North America perhaps to the middle 1800s at the end of the Little Ice Age. This poster describes and discusses the various types of weapons that human hunters have used to obtain food and defend themselves in the high alpine of northwest Wyoming.

MacGlynn, Ian and Mike Hamrick

CWC Interdisciplinary Climate Change Expedition (ICCE): Glacier Depth Measurements Using Ground Penetrating Radar

Over 80 glaciers reside in the state of Wyoming. The Wind River Range, located in the west-central region of the state, is home to a majority of these frozen reservoirs. As the word “reservoir” suggests, these contribute a significant amount of water to summer and early-fall stream flow. The meltwater from Wyoming’s alpine glaciers is critical during the dry months when the snows have melted and precipitation is rare. Previous studies regarding the glacier sin the Wind River Range indicate an overall trend of recession since 1850, with only localized periods of growth. One study analyzed surface area change for 42 glaciers in the Wind River Range from 1985 to 2005, indicating significant reductions. Due to the relationship between alpine glaciers and water availability, it is critical to monitor the health of these glaciers and analyze their rate of recession. This study sought to determine the changes in ice depth of the Dinwoody Glacier (at the base of Gannett Peak) in the Wind River Range. Using ground penetrating radar (S&S Noggin 100MHz), the team collected subsurface data along a 1,800m transect of the Glacier. Results were compared to two previous studies conducted in 1991, and 2006. Data correlation with previous studies revealed a continuing trend of recession over the past three decades. These findings may affect current understanding of glacial recession rates in the Wind River Range, and expand knowledge of the applications of portable 100MHz antennae for remote alpine glacier studies.

POSTER PRESENTATIONS
Saturday, May 6, 2017
During Meeting Breaks & 5:00-6:00 pm

Mashak, Rebecca (Arcadis U.S., Inc.)

Practical Approaches: Recording & Recovery Methodology for Archaeological Material on a Construction Site

Archaeological monitoring is a treatment recommended, or often required during development or remediation projects that require soil removal in an area of archaeological concern. Monitoring occurs where archaeological sites are known, or thought to exist based on geographic and depositional setting or literature research indicates a potential for undiscovered cultural material, or human remains. Development and remediation projects subject to Section 106 consultation such as Abandoned Mine Land sites, U.S. Environmental Protection Agency Superfund sites; and oil and gas construction projects could potentially affect a historic property or sensitive area containing undocumented archaeological materials. A recording and recovery protocol is often vague, varies between agencies and states, and procedures are often left to the discretion and experience of the on-site archaeologist and corresponding consulting firm. The St. Maries Creosote Remediation site, and the Time Critical Removal Action of the Upper Columbia River project demonstrate the difficulty and complexity for identification, recovery, and recording of displaced objects and buried features within an Area of Potential Effect on Superfund remediation sites.

POSTER PRESENTATIONS
Saturday, May 6, 2017
During Meeting Breaks & 5:00-6:00 pm

Greg Pierce (Office of the Wyoming State Archaeologist)

Public Archaeology at the Gipson Site

At the Office of the Wyoming State Archaeologist (OWSA) we have adopted three basic tenets which we use to guide the work we do. These tenets include a dedication to outreach, research, and education. Outreach connects this office and our work to individuals across the State, and beyond, who would like to be involved in the identification, investigation, interpretation, and preservation of our archaeological resources. Research allows OWSA to explore the archaeological resources in Wyoming and to use the data from these investigations to add to the understanding of historic and prehistoric activities in the region. Educational programs and activities are an important conduit through which to inform the public about the nature of our archaeological heritage, how archaeology informs us about the past, and to present issues relating to the preservation of these valuable resources. We look to integrate these three foci into as much of what we do as possible. We truly believe that these topics are not mutually exclusive and when appropriate can be brought together for the benefit of the Office, the resource, and the public.

Recently OWSA was able to engage in a project which successfully integrated public outreach, academic research, and archaeological education. In the fall of 2015 we took twelve students and volunteers ranging in age from 10 to 60 into the field to conduct archaeological investigations at the Gipson Site at the behest of a local property owner. Investigations at this historic camp consisted of survey, metal detecting, and test excavations. This was the first systematic investigation of the site and the results have helped to give clarity to the nature of the 19th century occupation.

Skinner, Karin C., and Marcel Kornfeld (University of Wyoming)

Hell Gap 2016 Zooarchaeological Analysis

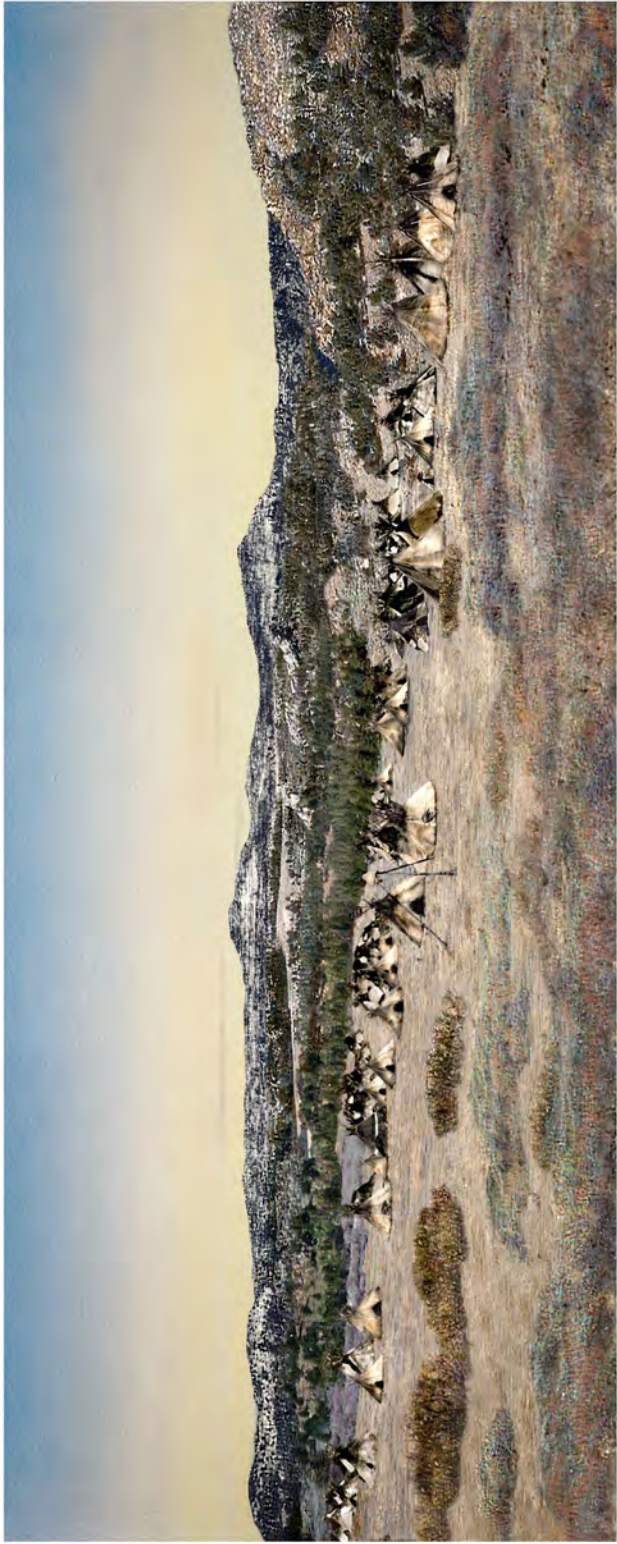
Excavations at Hell Gap in 2016 continue to contribute insights into the Paleoindian cultural sequence and lifeways. Folsom and Goshen components were exposed during the excavation, resulting in recovery of over 400 faunal specimens. Many identified specimens are of the taxon *Bison antiquus*. Human modification of the bone is indicative of intensive butchery, seen particularly in long bones, but also in mandibles. A significant addition to the Hell Gap faunal assemblage is two ageable mandibles. Weathering has adversely affected a number of specimens, but rodent and carnivore damage is minor. The nature of weathering has important implications for site formation processes at Hell Gap.

POSTER PRESENTATIONS
Saturday, May 6, 2017
During Meeting Breaks & 5:00-6:00 pm

Tomme, Lane, Grace Hartman, Travis Adderhold, and Shannon O'Sullivan (Central Wyoming College)

CWC Interdisciplinary Climate Change Expedition (ICCE): Black Carbon Measurements on the Dinwoody Glacier

Global Climate Change has had a measurable impact on the environment on a local and global scale. Glaciers worldwide are receding at unprecedented levels and the future of water resources are at stake. The intersection of climate induced alpine ice recession, airborne carbon particulate, and subsequent impacts on water resources is the foundation for the Interdisciplinary Climate Change Expeditions (ICCE) Black Carbon Research Project. Black Carbon (BC) is the highest light-absorbing abundant particulate in all of particulate matter (PM) and is created by the incomplete combustion of fossil fuels, biofuels and biomass. In climatology, Black Carbon is known as a “climate forcing” agent and it warms the earth by absorbing sunlight, thereby heating the Earth’s atmosphere and reducing the Albedo when the Black Carbon is deposited on snow/ice fields. In South America, this particulate has been documented in tropical glaciers in alpine environments. To date, black Carbon research on North American glaciers is limited. The CWC ICCE Black Carbon team in conjunction with Dr. Carl Schmitt and the American Climber Science Program has been sampling snow on Dinwoody Glacier for the past three seasons. This paper summarizes results of this research and discusses the impacts of black carbon on glacial ice melt.




SHOSHONE ENCAMPMENT AT SOUTH PASS

During the expedition of 1870, the United States Geological Survey of the Territories came across the above village of the Shoshones, numbering nearly one hundred lodges, encamped among the southern foothills of the Wind River Mountains . . . They were under the well known chief [sic] Washakie, and were on their way to the Wind River Valley to hunt buffalo for the winter's supply of food and clothing. Although the village had all the appearance of being a permanent abiding place, yet the following morning, before the sun was an hour high, there was not a tent in sight, and the last pack-pony with trailing lodge-poles had passed out of sight over the hills to the eastward.

—William Henry Jackson, September 1870

Using Jackson's images in conjunction with geospatial information systems data and georeferencing software, archaeologists were recently able to relocate and record Chief Washakie's 1870 campsite.

WYOMING ARCHAEOLOGY AWARENESS MONTH  SEPTEMBER 2017

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