



From the Director, Todd Surovell

The big news in the Department of Anthropology is that our former head, Dr. James Ahern, took a position with the university administration. He is now the Associate Vice Provost of Graduate Education. We are in need of a new head and that job has fallen to me. After five years as the Director of the Frison Institute, I will be handing the job off to Dr. Jason Toohey. I am optimistic about the future of the Institute and the Department, but moving on from this position has made me nostalgic about what we have accomplished since 2012.

In my first year, we funded six research projects in archaeology. During this academic year, we funded 21. Our endowment has more than \$800,000 in value. We have two new grant

programs, including the Fund for Wyoming Archaeology, which supports fieldwork across the state. The Frison Institute is making a real difference for students, faculty, and professional archaeologists working in Wyoming and truly around the world. While our focus will always be Wyoming, we have funded research in Alaska, New Mexico, Mexico, Mongolia, Peru, and Scotland. We have supported archaeologists affiliated with more than 20 institutions. When I first assembled this newsletter five years ago, I struggled to fill three pages with news; now I struggle to contain it within five pages. I am so thankful to all of our donors for their support. None of this would have been possible without you. Thank you for all you have done!

Bill and Gloria Tyrrell

By Robert Tyrrell

Bill Tyrrell was born and raised in Gillette, Wyoming. After serving in the Navy for four years, he returned to Wyoming to pursue a degree in geology with the help of the GI Bill, a World War II educational assistance program. In 1953, while working as a fishing guide on Jackson Lake, he met Gloria Schulze. Gloria had just completed her nursing education in her home state of Wisconsin and traveled west for a summer of adventure. The Wyoming adventure continued for the rest of her life when she and Bill were married that fall in Grand Teton Park.

Bill finished his degree in geology at U.W. and took a job with Atlantic Oil. That took him all across the western United States. The family now had three kids, Scott, Bob and Barb, and it was time to settle down. Bill reentered U.W. where he received his teaching certificate. He worked as biology teacher at Laramie Junior High, while Gloria worked as a nurse at Student Health at U.W.

Having spent time in fossil quarries from one end of Wyoming to the other while earning his geology degree and chasing all over the western U.S. "doodlebugging" for oil, Bill developed a passion for the high desert country of Wyoming. Hunting, camping and rock hunting were a way of life for this Wyoming family.

After moving the family to Rock Springs, Bill taught Earth Science, and Gloria became the first school nurse. The whole family became involved with the local chapter of the

Wyoming Archeological Society after hearing Dr. George Frison give a talk. A friendship and new passion took hold — high plains archeology. Numerous treks were organized and lending a hand with Dr. Frison's digs became the highlight of many summers in southwest Wyoming.

When Bill passed away in 2012, Gloria and the three children started a grant fund at the Frison Institute in his name. When Gloria passed away in 2017, the name of the scholarship fund was changed to the Bill and Gloria Tyrrell Fund with the hope that their shared passion for archeology in Wyoming and the Rocky Mountain West would continue to be shared through education at U.W.



Bill and Gloria Tyrrell

INSTITUTE FUNDED RESEARCH

STUDENT RESEARCH

The Frison Institute supported nine student research projects this year including those of **Ken Hladek**, **Meghan Kent**, **Madeline Mackie**, **Spencer Pelton**, and **Heidi Van Etten** from U.W. Also receiving funding were **Chris Merriman** (Univ. of New Mexico), **Cody Newton** (Univ. of Colorado Boulder), **Rachel Reckin** (Cambridge Univ.), and **Holly Smith** (Univ. of Alaska Fairbanks).

ALPINE ARCHAEOLOGY FUND



Rebecca Sgouros holds a piece of a soapstone bowl.

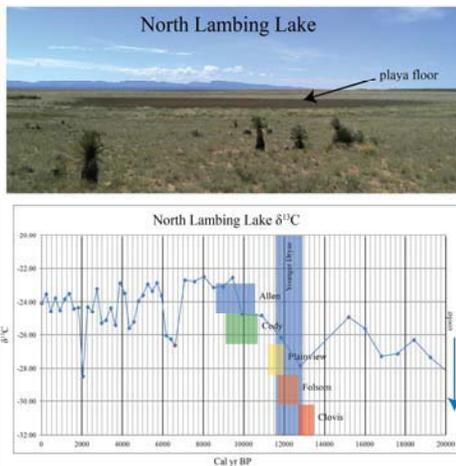
Matt Stirn and **Rebecca Sgouros** of the Jackson Hole History Museum collaborated with Bridger-Teton National Forest to conduct high elevation survey of new areas in the Gros Ventre Mountains. With support of the Frison Institute and Ed and Shirley Cheramy, they recorded nine prehistoric sites spanning the Early Archaic through Late Prehistoric periods and investigated melting ice patches for organic artifacts. Several pieces of groundstone and soapstone vessel fragments, the first recorded in the Gros Ventre, were collected and will be tested for food residues. In sum, the first season in the Gros Ventre was a great success and showed that the range was used extensively throughout prehistory and should be the focus of future research.

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WILLIAM AND GLORIA TYRRELL FUND

University of New Mexico Ph.D. candidate **Chris Merriman** is examining Paleoindian responses to the climate changes during the Pleistocene-Holocene transition in the Northern Jornada del Muerto basin in New Mexico. In addition to analyzing the spatial distribution of more than 50 sites and technological attributes of almost 800 Paleoindian projectile points, he is building a local paleoclimate record from three playas. Playas are ponds that are dry at least half of the year. He uses stratigraphy, ^{14}C dating (funded in part by the Tyrrell Fund) and stable carbon isotope analyses to better understand the shifting environments in which Paleoindians lived.

During Clovis times, the climate was warm and dry followed by cooler and wetter conditions in the Folsom period. By Cody times in the Early Holocene, the climate became much more arid.



North Laming Lake, NM (above) and its stable carbon isotopic sequence (below)

PATRICK ORION MULLEN FUND



Holly Smith at the total station at the Forty Mile Territorial Historic Site in Yukon Territory, Canada

Holly Smith is an Anthropology M.A. student at the University of Alaska Fairbanks studying the effects of the White River Ash Northern Lobe (WRN) on the local flora and indigenous populations. The prehistoric volcanic eruption responsible for the WRN originated in the Wrangell-St. Elias Mountains and deposited a layer of tephra along the Yukon-Alaska border. Holly will be conducting fine-grain pollen analysis from core samples taken from 6-Mile Lake, Alaska to determine environmental responses to the eruption in the local region. In addition, data from her 2017 archaeological excavations, along with previous work, at the Forty Mile Territorial Historic Site in the Yukon will be examined to explore the cultural response to this volcanic event. Holly is currently in the process of analyzing the data and writing her thesis.

JUNE FRISON FUND

Meghan Kent in her final year at U.W. completed a study in the geochemical sourcing of red ochre, or the mineral hematite, from the La Prele Mammoth site near Douglas, Wyoming. Meghan compared trace element concentrations of ochre from the site to samples she collected at the Powars II site/Sunrise Iron Mine near Hartville and the Rawlins Red Paint Mine. She found that these sources can be distinguished by measuring the amount of titanium and arsenic in each. She found that the ochre from La Prele came from the Sunrise source, which tells us that Clovis peoples carried bags of mineral pigments more than 50 miles up the North Platte from the southeast. We still don't know what the ochre was used for at the site but now know its source. This work will allow us to source ochre from other sites in Wyoming.



Meghan Kent collecting hematite samples from the Rawlins Red Paint Mine.

FEATURED PROJECT: THE LA PRELE MAMMOTH SITE



An overhead view of the 2017 excavations at the La Prele Mammoth site

A Mammoth Kill and Campsite in Eastern Wyoming

By Madeline Mackie

In the fall of 1986, Mike Earnst and William Hinrichs were walking along the La Prele Creek near Douglas, Wyoming, when they discovered mammoth bones poking out of a cut bank. That spring, Dr. George Frison and a small crew excavated a three-by-four meter area and discovered the partial remains of a juvenile Columbian mammoth. Intermixed with the mammoth remains were a stone tool, a possible hammerstone and nine chipped stone flakes suggesting humans had killed and/or dismembered the mammoth. Since 2014, with funding from QUEST Archaeological Research Program, the Frison Institute, the National Geographic Society and the Wyoming Cultural Trust Fund, U.W. Field School and research crews have been working at the La Prele Mammoth site to clarify the association between cultural activities and mammoth remains. These excavations have uncovered an approximately ca. 13,000-year-old mammoth kill with at least two associated activity areas, the Chopper and Northwest Blocks.

The Chopper Block is a hearth centered activity area about ten meters south of the mammoth which contains seven stone tools, hundreds of flakes, and numerous bone fragments as

well as artifacts not traditionally found in association with a mammoth including a large ochre (red pigment) stain, a bone bead and likely the oldest bone needle fragments from the lower 48 states. The bone fragments found were too small to be as mammoth and too fragmentary for species identification using traditional methods. We submitted samples of the bone fragments for species identification using ancient DNA analysis. Both samples were identified as belonging to *Bison*, confirming the presence of a second large animal species at the site. Based on the artifact assemblage and spatial patterning, we believe this area may be a campsite.

In the last two seasons, the La Prele site boundary has continued to expand including the discovery of a second activity area, the Northwest Block, located about seven meters west of the mammoth. This area contains three stone tools, over 600 pieces of chipped stone, and bone fragments. This season we found the “smoking gun,” a nearly complete Clovis point five meters south of the Chopper Block. The point securely identifies the site as a Clovis mammoth kill. The La Prele site is the second confirmed mammoth kill site in Wyoming and one of less than 20 mammoth kill sites known in North America.



A Pleistocene bison rib identified using ancient DNA. This photo was taken during 2016 excavations.



A Clovis point recovered during 2017 excavations. The raw material may be chert from the Phosphoria Formation.



A sample of bone needles. The needle fragment on the lower left retains a portion of the eye.



The stain of red ochre found south of the mammoth. Image has been enhanced to make the stain more visible.



A view of our water screening area from the 2016 field season with the excavation area in the background.



Our 2017 field school crew at the end of excavations in July. A newly-acquired drone lets us get aerial shots like this.

BLACK HILLS SURVEY

by Greg Pierce, Wyoming State Archaeologist



OWSA crews augering a possible bison jump locality.

The **Office of the Wyoming State Archaeologist** conducted survey and site testing in the Red Desert of the Black Hills of Wyoming. This work was part of a research project aimed at identifying sites associated with bison hunting activity in the Late Prehistoric and Protohistoric. We recorded and mapped a drive line, surveyed approximately 640 acres, and tested a possible bison jump. Survey identified six sites

and 16 isolates. These date from the Archaic through the Historic period. In one location, auger probes identified the presence of a possible bison bone bed associated with drive lines. Participating in this field session were five volunteers from North Dakota and Wyoming and one U.W. undergraduate intern supported by the institute's Fund for Wyoming Archaeology.

COLLECTIONS GRANT

Angela Perri, postdoc at Durham University and research associate at the Max Planck Institute for Evolutionary Anthropology, was at the U.W. Archaeological Repository in August with the support of a Collections Grant from the Frison Institute. Angela was in Laramie to collect samples from several archaeological canids housed at UWAR. The samples will be dated and DNA will be extracted, helping to illuminate the interactions between dogs, wild canids, and humans in ancient North America. U.W. Anthropology Ph.D. candidate **Rachael Shimek** is a co-principal investigator on this ancient canid DNA project.



Angela Perri sampling for DNA.

FALL LECTURE

Professor Emeritus in the UCLA Department of Anthropology, gave this year's Frison Institute annual lecture. His talk titled "New Insights on the Nazca Lines of Ancient Peru" addressed his investigations of geoglyphs and associated mound sites in the nearby Chincha valley provided insights how geoglyphs functioned in the social and political realms. His talk can be viewed online on the Wyocast website:

wyocast.uwyo.edu/



2017 Frison Institute speaker Dr. Charles Stanish (UCLA)

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