



# The American Paleolithic

Steven and Kathleen Holen, Editors

## Introduction

The Center for American Paleolithic Research (CAPR) is seven years old and *The American Paleolithic* publication is the newest addition to disseminate information about our continuing mission to find and share archaeological evidence of early people in the Americas. We created CAPR because of a long-standing gap in the archaeological record between the habitation of eastern Siberia and Asia and the identification of the Clovis technological complex in the Americas. CAPR aims to systematically investigate new archaeological and paleontological sites older than 16,000 years. We also have an active museum collections research program. We have open minds regarding evidence of human presence that goes beyond chipped stone artifacts and includes multiple types of evidence such as bone technology associated with a wide range of human behaviors. We also have no preconceptions of when our human ancestors first arrived in the Americas, by which routes, and whether some early migrations into the Americas may not have been successful.

Over the past seven years CAPR has made steady progress in support of our goals. Our efforts include original research, publications and professional and public presentations. We have also established partnerships with other organizations, both national and international, which have expanded our research area and funding base. Below we list some of these accomplishments.

### **Publications**

Holen, K., R. Fullagar and S.R. Holen, 2019. Archaeological site interpretation using experimental quantitative and qualitative data: a response to Magnani et al. *Antiquity* 93(369):798-801.

Holen, S.R., T.A. Deméré, D.C. Fisher, R. Fullagar, J.B. Paces, G.T. Jefferson, J. M. Beeton, A.N. Rountrey and K.A. Holen 2018a. Disparate Perspectives on Evidence from the Cerutti Mastodon Site: A Reply to Braje et al. *PaleoAmerica* 3(3):200-202.

Holen, S. R., T. A. Deméré, D. C. Fisher, R. Fullagar, J. B. Paces, G. T. Jefferson, J. M. Beeton, A. N. Rountrey, and K. A. Holen. 2018b. Broken Bones and Hammerstones at the Cerutti Mastodon Site: A Reply to Haynes. *PaleoAmerica* 4(1):8-11.

Holen, S.R., T.A. Deméré, D.C. Fisher, R. Fullagar, J.B. Paces, G.T. Jefferson, J.M. Beeton, et al. 2018c. Reply to J.V. Ferraro et al. *Nature* 554:E3.

Holen, S.R., T.A. Deméré, D.C. Fisher, R. Fullagar, J.B. Paces, G.T. Jefferson, J.M. Beeton, R.A. Cerutti, A.N. Rountrey, L. Vescera, and K.A. Holen, 2017. A 130,000-Year-Old Archaeological Site in Southern California, USA. *Nature* 544: 479-483.

Holen, S.R., C.R. Harington and K.A. Holen, 2017. New Radiocarbon Ages on Percussion-Fractured and Flaked Proboscidean Limb Bones from Yukon, Canada. *Arctic* 70(2):141-150.

Holen, S R. 2014. Clovis Lithic Procurement, Caching and Mobility on the Central Great Plains of North America, In, *Clovis Caches, New Discoveries and New Research*, edited by B. Huckell and D. Kilby, University of New Mexico Press.

Holen, S. R. and K. Holen, 2014. The Mammoth Steppe Hypothesis: The Middle Wisconsin (Oxygen Isotope Stage 3) Peopling of North America. In, *Paleoamerican Odyssey*, edited by K.E. Graf, C.V. Ketron, and M.R. Waters, Texas A&M University Press, pp. 429-444.

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## **Museum Collections Research**

The Cerutti Mastodon Site publication in *Nature* was a result of 10 years of collaborative research between CAPR and paleontologists, Tom Deméré and Richard Cerutti at the San Diego Natural History Museum. Publication of an article in the journal *Arctic* was a collaborative project between paleontologist, C. Richard Harington and CAPR using collections from the Canadian Museum of Nature. We have also been assisting the Stout Paleontological Research Center/Anza-Borrego Desert State Park with research on the Sand Mammoth collection. We think it is imperative for archaeologists and paleontologists to collaborate on projects in geological deposits older than 16,000 years old to determine if there is a human presence.

## **Field Research**

We continue an active field research program and since 2013 we have conducted research on late Pleistocene sites in South Dakota, Nebraska, Kansas, Colorado and California.

## **Project Funding**

In recent years we have funded research by archaeologists working on late Pleistocene archaeological sites in Argentina, Mexico and the United States. Going forward, CAPR plans to continue to fund similar projects anywhere in the Americas. We hope to increase our outreach and funding to student archaeologists who share our research interests. Contact us if you have a project in need of preliminary funding for a potential archaeological site more than 16,000 years old. We may be able to help.

## **Professional/Public Presentations**

***We list a few of our recent presentations.***

- American Institute of Archaeology, Guest Lecturer Series, 2014-1016 lectures in Florida, California, New York, and Ohio. “Early Humans in the Americas: When Did They Arrive and Where Did They Come From?”
- South Dakota Archaeological Society Annual Banquet Guest Speakers 2017. “The Cerutti Site”.
- Montana State University/Museum of the Rockies, March 2018. “The Archaeology of the Cerutti Mastodon Site, San Diego, California.
- USIPP International Paleolithic Conference. Paris, France, June 2018. “Early Hominin Dispersal into North America During Late MIS6/Early MIS5e: Climatic and Ecological Explanations of Hominin and Faunal Movements” co-authored with Richard Fullagar. (Also presented at the conference titled New Discoveries in the American Paleolithic: The Pre-16,000 BP Archaeological Record.)
- University of Oklahoma, March 2019. “Were Humans in the Americas 130,000 Years Ago? The Cerutti Mastodon Site”. Kathleen also taught an archaeology class during this trip.
- Anza-Borrego Desert State Park, Public Archaeology Day, February 2109. “The Early Peopling of America: From Time Immemorial”.
- “Cerutti Site Broken Mastodon Limb Bone Evidence Within a Worldwide Proboscidean Bone Technological Context”. Presented at the conference titled New Discoveries in the American Paleolithic: The Pre-16,000 BP Archaeological Record. January 2019.
- “No Chipped Stone Tools: An Evidentiary Standard for Human Activity at Large Animal Sites”. Presented at the conference titled New Discoveries in the American Paleolithic: The Pre-16,000 BP Archaeological Record. January 2019.



## Featured Article

### **The Debate Concerning the Early Peopling of the Americas Has Always Been a Paleontological Problem**

**Steven R. Holen, Ph.D., Director of Research**

The debate concerning the early peopling of the Americas has been at the forefront of scientific inquiry for more than 125 years. Although the subject is too broad to discuss in this short article, one aspect of the debate is the role that vertebrate paleontologists have played and the contributions they have made. This is not a comprehensive study, however, I will provide some of the highlights of paleontological research in the United States that have helped elucidate the timing of human expansion into the Americas.

In 1895-1896, H.T. Martin and T.R. Overton, were working for S.W. Williston, paleontologist at the University of Kansas in western Kansas at the 12 Mile Creek Site (Williston 1902, 1905; Rogers and Martin 1984; Hill 2006). They found one of the first archaeological sites discovered in the Americas by vertebrate paleontologists. During excavation of an extinct form of bison they found an associated fluted projectile point. Unfortunately, the projectile point is now lost. The artifact is most likely a Folsom point based on an old illustration and the most accurate radiocarbon age of  $10,520 \pm 70$  rcybp (Hill 2006). This age places the site at the Pleistocene/Holocene boundary. For various reasons discussed in Meltzer (1989) and Hill (2006) the 12 Mile Creek Site only played a minor role in the debate concerning early humans in the Americas.

Paleontologists were interested in and published research related to the early peopling of the Americas in the early 1900s. In general, paleontologists thought that humans were in the Americas during the late Pleistocene (Osborn 1910; Hay 1918) while most in the archaeological community, led by Wm. Henry Holmes and Aleš Hrdlička of the Bureau of American Ethnology, thought that Native Americans arrived in the Americas much later.

J.C. Merriam, paleontologist at the University of California (Berkeley) in conjunction with the new Department of Anthropology at the same institution developed a major project to investigate reported finds of Pleistocene human bones and artifacts in California. Merriam found no definitive evidence of a Pleistocene human presence based on this research (Merriam 1915:543-544); however, he suggested that humans may have arrived quite early in the Americas, did not survive and left almost no archaeological record. He stated,

“It is possible that man coming from the Old World, the place of origin of the human race, has at various times colonized the North American continent, but was unable to secure a permanent foot-hold, and because of the brief period of his occupancy has left no ancient relics” (Merriam 1915:544).

This astute observation of human colonization and possible extinction in the Americas was repeated many years later by C. V. Haynes (1967), a geoarchaeologist, and Meltzer (1989) an archaeologist, apparently being unaware of Merriam's earlier work.

The Colorado Museum of Natural History made the first paleontological/archaeological discovery that completely changed the debate over early humans in the Americas in the 1920s. In 1926 and 1927 a paleontological crew was excavating a bison bone bed at Folsom, New Mexico. In 1926, fluted Folsom points were found at the site, but not in situ (Figgins 1927). In 1927, more careful excavation found a Folsom point, which was left in situ, associated directly with the bison bone. Several scientists from other institutions were called in to confirm the association. These included Barnum Brown, paleontologist from the American Museum of Natural History, Frank Roberts, archaeologist from the Bureau of American Ethnology and Alfred Kidder, archaeologist from the Peabody Museum of Archaeology and Ethnology at Harvard. These three well-known scientists confirmed the association of the spear points and bison bones and it was then accepted that humans were in North America during the late Pleistocene, hunting an extinct form of bison, *Bison antiquus*. In 1928, Barnum Brown took over the excavation of the Folsom Site and found more Folsom points associated with the bison (Brown 1928, 1929). For a more detailed and quite interesting discussion of this discovery read Meltzer's accounts (Meltzer 1991; 2006).

The Folsom discovery could only have been made by paleontologists because early 20<sup>th</sup> century archaeologists' field search designs, largely dictated by Holmes and Hrdlička, assumed that Native Americans arrived in the Americas much later, perhaps 4,000 years ago. Archaeologists generally accepted this interpretation and thus were not conducting research in geological deposits of late Pleistocene age. Consequently, archaeologists relinquished research in these deposits to paleontologists.

In 1933, paleontologists from the Colorado Museum of Natural History made another amazing discovery at the Dent Site about 50 miles north of Denver (Figgins 1933). Father Conrad Bilgery of Regis College in Denver received word of large bones eroding from a cutbank at the Dent railroad siding in 1932. He took some of his students from Regis to investigate the find and found a spear point associated with mammoth bones, but unfortunately did not leave the point in place. He turned the excavation over to Jesse Figgins, Director of the Colorado Museum in 1933, and Figgins sent his paleontological crew to excavate the site. They found a spear point, now known as a Clovis point, in association with the mammoth bones, left it in place and photographed it (Figgins 1933). This was the first well-documented evidence of mammoth hunting by humans in the Americas.

Paleontological crews from the University of Nebraska State Museum made significant discoveries of Paleoindian sites from the late 1920s to the late 1940s. They reported on several sites with artifacts associated with late Pleistocene/early Holocene fauna including Meserve (Barbour and Schultz 1932a; Meserve and Barbour 1932; Schultz 1932), Scottsbluff Bison Quarry (Barbour and Schultz 1932b; Schultz and Eiseley 1936), Cumro (Schultz 1932) and the Lime Creek Site (Schultz and Frankforter 1948). The Plunkett Site contained two Goshen projectile points associated with a hearth (Barbour and Schultz 1936; Holen 2009). Barbour and Schultz (1936:431) stated that "...evidence is accumulating to show that man actually had reached North America before the last glacial advance" although they admit that the

“classification of the Pleistocene is still in dispute”. In fact, all these sites were later found to be early Holocene in age based on radiocarbon dating and projectile point typology.

Even later in the 1980s, other University of Nebraska State Museum paleontologists continued their research on this subject with reports of archaeological materials pumped from gravel pits in southwest Nebraska (Myers and Corner 1985) and the discovery of Pleistocene megafaunal bones thought to have been modified by humans (Voorhies and Corner 1984). Again, these finds were not dated, and their significance remains unknown.

Paleontologists are keen observers of faunal changes including range expansions and contractions, extinctions and extirpations. They have a unique perspective on these events, including human adaptations. Kurten and Anderson (1980) devote Chapter 18 of their book “Pleistocene Mammals of North America” to the Order Primates/Family Hominidae-Man. They present evidence (some of which is now considered invalid) regarding human expansion into the Americas and state,

“At face value, the evidence suggests a pre-Paleo-Indian immigration, preceding the Wisconsinan glacial maximum, which populated the western part of the Americas. If such was the case, the population seems to have remained sparse throughout, with a low cultural profile; it may have been swamped by the vigorously spreading Paleo-Indian invaders of the late Wisconsinan, with their marked reliance on big game” (p.356).

Other notable archaeological research carried out by paleontologists more recently includes excavation of the Kimmswick Mastodon Clovis Site in eastern Missouri (Graham et al. 1981) and the excavation of mastodon meat caches found in former ponds in Michigan (Fisher 1984a&b). Unfortunately, Fisher’s research has been largely ignored by the archaeological community. This is another example of the extreme silos within which archaeologists and paleontologists generally work despite all the calls for interdisciplinary research in Quaternary Sciences.

The latest example of paleontologists making a discovery of early human evidence is the excavation and discovery of the Cerutti Mastodon Site in southern California (Holen et al. 2017). Research was conducted as part of a highway construction project. Richard Cerutti a paleontological monitor with significant archaeological excavation experience, noticed large cobbles in fine-grained low-energy sediments associated with highly fragmented spirally fractured mastodon limb bones. The site was excavated using archaeological techniques over a five-month period with all fragments over ca. 2 cm in size being mapped in three dimensions. All matrix was screened through fine mesh screen. Evidence from this site indicated the unexpected presence of early humans in the Americas 130,000 years ago. These early humans were breaking mastodon limb bones and molars using a hammer and anvil technique. Once again, only paleontologists could have made this discovery because archaeologists do not conduct research in deposits this old.

The prevailing bias among most archaeologists in the United States is that humans did not enter the Americas until the late Pleistocene (Potter et al. 2018) ca. 14,000-15,000 cal BP. Archaeologists generally do not work in older geological deposits because they “know” there are no archaeological sites there. Future articles will discuss the problems that have occurred because of this approach to science.

Archaeologists in the United States have effectively ceded the archaeological record older than ca. 20,000 years to paleontologists. Only paleontologists in the United States, excepting a small minority of open-minded and geologically-trained archaeologists, conduct research on a regular basis in deposits dating 20,000 years and older. It follows that paleontologists and geologists have the best opportunity to find archaeological sites older than 20,000 years in the United States. Unfortunately, many early sites have “fallen through the cracks” between the disciplines of archaeology, paleontology and geology and important data have been lost. Therefore, archaeologists should work closely with paleontologists and geologists to survey older geological deposits in search of archaeological sites. Most archaeologists do not have the necessary experience with these older geological deposits and associated dating methods so cooperation with other disciplines is mandatory. This is especially true during monitoring of construction projects in older Pleistocene deposits. Also, archaeologists in universities and colleges should remind their students that the timing of the early peopling of the Americas remains an open question and that research should be conducted with an open mind. Researchers working in Pleistocene geological deposits more than 20,000 years old will no doubt discover additional evidence of an early human presence in North America.

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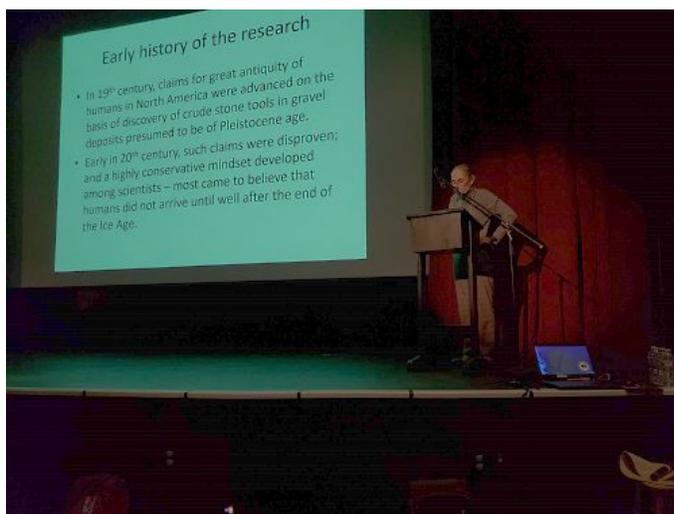
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## News from CAPR

### **New Discoveries in the American Paleolithic: The Pre-16,000 BP Archaeological Record**



Pictured: Ruth Gruhn presenting an overview of early sites in South America

The conference was held in Borrego Springs, California January 10-12, 2019 and featured international speakers from multiple disciplines who presented evidence from North and South American archaeological research of a human presence in the Americas before 16,000 BP. Scholars from France, Uruguay, Argentina, Canada, Australia and the United States presented papers. The three-day conference began with a

well-attended Meet & Greet/Poster Session at the Steele-Burnand Desert Research Institute. Professional and avocational archaeologists, paleontologists, geologists, geochronologists and students spent the evening viewing posters, eating and drinking fine fare and sharing information across disciplines. Everyone enjoyed the beautiful night sky in the desert.

The next morning, the Conference was opened with remarks from sponsors Steve Holen (CAPR), Briana Puzzo (Anza-Borrego Foundation) and Robin Connors (Anza-Borrego Desert State Park Archaeologist). Carmen Lucas (Kwaaymii Laguna Band of Mission Indians) presented a thoughtful message from the perspective of Native American history. She agreed with the opening statement made by Steve that Native people have lived in the Americas from time immemorial. That subject framed the conference agenda: The question of when people arrived in the Americas is not yet answered and more research is needed.

Two days of presentations on Friday and Saturday were held at the Anza-Borrego Performing Arts Center and all 177 seats were sold out. The first morning session featured four papers concerning the Cerutti Mastodon site. The first paper by Tom Deméré and Richard Cerutti discussed the history of investigations and present status of research on the site. This included the debate generated by the published report. Richard Fullagar of Australia presented new research being conducted at the University of Wollongong in Australia, concerning residues found on the stone hammers and anvils. Jared Beeton and Tom Deméré presented a revised interpretation of the geomorphic position of the Cerutti Mastodon site. The last paper in this

group was presented by Steve Holen and it placed the Cerutti bone breakage patterns within a worldwide proboscidean bone technological context beginning 1.5 million years ago in Africa. The last paper in the morning was presented by David May (on his 65<sup>th</sup> birthday). Dave explained the geomorphic context of several mammoth sites in the central Great Plains that contain impact-fractured and flaked limb bones.

The Friday afternoon session consisted of papers concerning dating techniques that have potential to be used at new archaeological sites where radiocarbon dating is not possible. The first paper by Jim Paces concerned Uranium-series dating of bone. The second paper by Warren Sharp also concerned Uranium-series dating but he concentrated his discussion on landforms, concretions on artifacts and ratite eggshells. Kim Blisniuk and Warren Sharp then presented a paper concerning dating landforms in the Anza-Borrego Desert using geomorphology and uranium-series. The last paper by Robin Conners described an experimental approach to date desert varnish on artifacts from desert pavements in Anza-Borrego Desert State Park. This paper generated a spirited discussion regarding the preliminary results indicating that some artifacts were at least 17,000 years old. The last presenter of the day, Kathleen Holen, discussed the evidence of human-induced bone technology on large animal limb bones from sites that lack chipped stone tools.

Saturday morning opened with a provocative presentation entitled “Changes in the Conceptualization of the Initial Settlement of the Americas” by Ruth Gruhn. Her depth of knowledge and good humor set the tone for the morning session which focused on recent archaeological research in South America. We were honored to welcome international speakers Richard Fariña (Uruguay), Marcelo Toledo (Argentina), and Eric Boëda and Christelle LaHaye (France), who both work in northeast Brazil. Fariña’s paper concerned the 33,000 BP Arroyo Del Vizcaino site where sloth bones with numerous cut marks were found in association with one chipped stone tool. Marcelo Toledo’s paper discussed his reinvestigation of several sites in Argentina excavated by Ameghino in the 1870s and 1880s that contain human-induced impact fractured and flaked large mammal bone and teeth that date prior to the Last Glacial Maximum. The two papers by Eric Boëda and Christelle Lahaye (and many other authors) discussed eight rockshelter sites in northeast Brazil that have multiple cultural layers containing chipped stone tools. These sites were dated between 20,000 and 40,000 BP using luminescence dating by Lahaye and colleagues. This amazing group of sites offers very compelling evidence that humans were in South America by 40,000 BP an interpretation that was further supported by the data presented earlier Fariña and Toledo.

In the afternoon session, we returned to North America with a presentation by Thomas Williams, Michael Collins and Nancy Velchoff from the Gault School of Archaeological Research. The paper discussed the early components at the Gault Site containing chipped stone tools that date a minimum of 16,000 BP and possibly as much as 21,000 BP. Sandra and Robert Keeley, avocational paleontologists and their colleagues presented a preliminary report on the excavation of the Sand Mammoth Site discovered in the Anza-Borrego Desert State Park. The presentation demonstrated the importance of collaboration across the disciplines of archaeology and paleontology and between professionals and avocationalists. The site contains evidence of impact fractured mammoth limb bone, burned rocks, one with impact fractures, that date a minimum of 25,000 BP. Curtis Runnels, Priscilla Murray and Justin Holcomb wrote a paper presented by Steve concerning Robert Begole’s early sites containing artifacts from desert pavements in the park. Preliminary indications are that some of these artifacts date to the Last Glacial Maximum

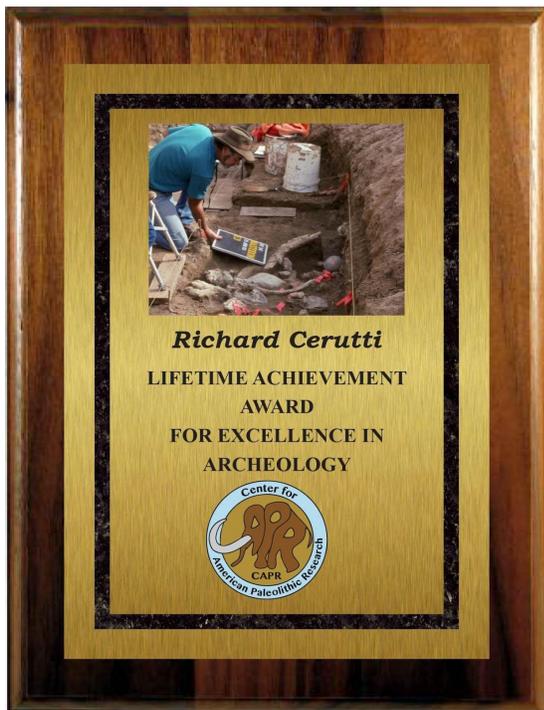
or earlier. The last paper of the day was by Steve Holen, Richard Fullagar and Kathleen Holen regarding climatic and ecological explanations for an early hominin expansion into the Americas sometime around 130,000 BP.

The Keynote Speaker was Richard Fullagar, University of Wollongong, New South Wales, Australia. Richard was a co-author of the Cerutti Site *Nature Letter*. Richard's presentation was titled "When Did People First Arrive in Australia?" and provided evidence from his research at the 65,000 BP Madjedbebe site published in *Nature* in 2017. This is the oldest well-documented archaeological site in Australia.

These highlights are only part of a very informative conference. A complete program with abstracts can be obtained on our web page at <https://caprmammoth.org>. In addition, a published volume of many of the papers is planned. This report cannot convey the excitement, comradery and enthusiasm for scientific inquiry that was expressed by attendees. We hope to repeat the conference in two years to update the archaeological record from this international perspective. New Discoveries in the American Paleolithic: The Pre-16,000 BP Archaeological Record was collaborative effort by the Center for American Paleolithic Research (CAPR); Anza-Borrego Desert State Park; Anza-Borrego Foundation; Colorado Desert District, California State Parks; Colorado Desert Archaeological Society; Anza-Borrego Desert State Park Paleontological Society; Begole Archaeological Research Center; and Stout Research Center Paleontology Laboratory.

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## Lifetime Achievement Award



CAPR is presenting the first Lifetime Achievement Award to Richard Cerutti of southern California for his many years of work in archaeology and paleontology. Richard is an amateur archaeologist/flintknapper and was for more than 30 years a paleontological monitor of construction projects for the San Diego Natural History Museum. It was in 1992 that Richard discovered the Cerutti Mastodon Site in a highway construction project in San Diego. He recognized that the fracture patterns on the mastodon limb bone were unusual and that the large cobbles were out of place in the fine-grained low-energy depositional situation at the site. The ensuing detailed excavation led to the discovery that the Cerutti Mastodon site is a 130,000-year-old archaeological site. Publication of this site in *Nature* in 2017 is the crowning achievement of Richard's career and he has every right to be proud of this discovery named for him and for the fact that he saved this site for science.

## **This Can't be Archaeology; It's Too Old**

**Mick Hager, CAPR Board Member**

The “New Discoveries in the American Paleolithic Conference” held in January 2019 included presentations numerous Paleolithic sites in the Americas that ranged in age from 16,000 to 130,000 years old. Sites in Brazil, Uruguay and Argentina contain an amazing variety of humanly modified animal bones and Paleolithic stone tools dating from 20,000 to 40,000 years before present. Nearly every presentation reported comments by critics claiming that sites are not archaeological because the dates were too old. Evidence to the contrary was not refuted but dismissed without thorough examination. The same unscientific criticism was leveled at the 130,000-year-old Cerutti Mastodon site without credible alternative explanations for the multiple lines of collaborating evidence documented at this site. As Dr. Ruth Gruhn stated in her presentation at the conference, “general acceptance of the field evidence from a pre-LGM entry will require a continual accumulation of verified archaeological sites dated before the LGM...”.

How will we ever discover the truth if we dismiss credible evidence by simply stating “it's too old” and therefore not funding important research efforts? That's where **you** can make a difference. The Center for American Paleolithic Research is dedicated to multidisciplinary scientific research that seeks to find evidence of the earliest human dispersal into the Americas. Dissemination of these research findings is a crucial part of CAPR's mission. CAPR provided funding to help support most of the international scholars who attended the conference. Research and publication of the Cerutti Mastodon site would not have been possible without CAPR support. You can help fund these exciting new discoveries with a tax-deductible donation to CAPR. A \$500 contribution will help date an early site, and a \$10,000 donation will fund a major excavation. Donations of any size support both field work, publication, public and professional presentations and future conferences.

***These are exciting times in American Archaeology and your gift will have a huge impact on CAPR research efforts. If you would like to donate to support CAPR research go to our website at [caprmammoth.org](https://caprmammoth.org) and use our PayPal account, or send a check made out to CAPR to Center for American Paleolithic Research, 27930 Cascade Rd., Hot Springs, SD 57747. Thank you for your support.***



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