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Aerial Imaging Using UAVs (Drones) in Chihuahua and Nayarit, Mexico, to Map and Archive Archaeological Sites

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INDIVIDUAL ABSTRACTS OF THE SAA 83RD ANNUAL MEETING

Searcy, Michael (Brigham Young University), Scott Ure, Michael Mathiowetz, Jaclyn Eckersley and Haylie Ferguson
[68] *Aerial Imaging Using UAVs (Drones) in Chihuahua and Nayarit, Mexico, to Map and Archive Archaeological Sites*

In 2017, we used UAVs (drones) to record eight archaeological sites from the air. As this type of technology becomes more refined, we have found that it is especially useful in carrying out three specific tasks: contour mapping, archiving site conditions, and identifying architecture. This paper reports our findings resulting from aerial images captured while flying archaeological sites in Nayarit and Chihuahua, Mexico.

Searle, Jeremy [125] see Hulme-Bearman, Ardern

Sears, Erin (University of Kentucky/Smithsonian Institution)
[139] *The New Adventures of Old Ceramic Figurines from Tres Zapotes, Mexico*

The long-term exploration of Formative fluorescence within the Veracruz region of Mexico has been supported through mid-20th century archaeological excavations and collection management protocols of the Smithsonian Institution's Natural History Museum Department of Anthropology. The Olmec site of Tres Zapotes has been a focus of archaeological investigation since 1938 by Smithsonian's Bureau of American Ethnology Director, Matthew Stirling. Research at the site continues to explore the regional diversity as currently carried out by Christopher Pool and team members from the University of Kentucky. This report concerns the use of miniature ceramic figurines as a focus for understanding variation using current and previously excavated material. Through the use of technical studies, archives and comparative methods, interpretive benefits of incorporating museum collections with data emerging from current research are discussed.

Sebastian, Lynne (SRI Foundation)
[233] *Discussant***Sedig, Jakob (Harvard University)**
[97] *An Archaeologist amongst Geneticists: Overview of My Experiences as an Archaeologist in an Ancient DNA Laboratory*

In this paper, I provide insight on the field of ancient DNA (aDNA) analysis from my unique perspective as an archaeologist employed in a leading aDNA laboratory. Ancient DNA research has advanced so much that genomic data from thousands of individuals across the globe are now available for study. These data are allowing geneticists and archaeologists to conduct studies that provide new insights into migration, demographic transitions, and relatedness of ancient individuals. They also afford an entirely new dataset to examine longstanding archaeological questions. While aDNA analysis is having a significant impact on interpretation of the past, due to the very rapid growth and development of the field, archaeologists might find themselves falling behind on increasingly complex methods and numerous publications. Thus, I provide a brief overview on the process of aDNA research. Additionally, this paper addresses some of the recent controversies in aDNA studies, such as "sample hoarding," the seeming focus on European samples, and ethical issues surrounding aDNA analysis. Finally, while there certainly have been many fruitful collaborations between archaeologists and geneticists, there have also been disagreements about results and data interpretation. I therefore also examine how archaeologists and geneticists can better collaborate in future research.

Sedig, Jakob [91] see Gilman, Patricia

Seeley, Sarah, Jonathan Reeves, Matthew Douglas and David R. Braun
[99] *Lithic Taphonomy and Digital Hydrogeologic Models: A GIS Based Approach to Understanding the Formational History of Surface Assemblages*

Surface assemblages play an important role in understanding human behavior. However, modern erosional processes—specifically flowing water—can limit the behavioral inferences that can be gained from surface assemblages by transporting materials from their original discard sites. The influence of these processes can be observed in the size distribution and condition of surface lithic assemblages. The topography and geomorphology of the landscape heavily dictates the degree to which fluvial processes erode and redistribute artifacts. Thus, considering formation processes alongside aspects of topography and geomorphology provides a means to investigate the extent to which modern geomorphological processes have altered surface assemblages. Here, we use digital terrain analysis to explore this relationship between the surface assemblages and modern erosional processes. We characterize the location of surface artifacts from the Koobi Fora Formation, Kenya, by stream power (erosive potential) and topographic wetness (the potential for water to pool). We then pair these data with attributes of stone tools that reflect post-depositional damage. We assess the overall influence of hydrological processes on the spatial arrangement of surface assemblages. A discussion of the applied methods and preliminary results is presented. This research was supported by the U.S. National Science Foundation, OISE awards 1358178 and 1358200.

Seeman, Mark [74] see Nolan, Kevin

Séguy, Isabelle [302] see Granados Vazquez, Geraldine

Seibel, Scott (AECOM) and Christopher McDaid (Joint Base Langley-Eustis (Eustis))
[42] *Managing the Effects of Erosion and Sea Level Rise on Archaeological Sites at Fort Eustis, Newport News, Virginia*

Fort Eustis, part of Joint Base Langley-Eustis, located on Mulberry Island along the James River in Virginia, is extremely vulnerable to the threat of erosion resulting from sea level rise, increased tidal range, and flooding from increased rainfall and storm surge. Currently, dozens of archaeological sites on the island are experiencing damage resulting from erosion, including sites where human remains have been found protruding from erosional scarps. To meet the installation's short and long-term planning needs and their regulatory obligations under the National Historic Preservation Act, the Fort Eustis Cultural Resources Management Program implemented a study of the effects of sea level rise and shoreline erosion on 31 threatened archaeological sites at Fort Eustis. The interdisciplinary study involved archaeologists and coastal engineers from AECOM and examined historic and current erosion rates and future sea level rise projections, conducted site visits, developed comprehensive risk assessments, evaluated of current and long-term threats, and generated potential management strategies. The installation currently uses the data from the study to establish priorities regarding which sites to evaluate for significance, to develop cost estimates, and to aid when deciding whether to protect a site or to conduct data recovery.

Seibert, Michael [154] see Elliott, Daniel

Seidemann, Ryan (Louisiana Department of Justice)
[62] *Discussant*

Seidemann, Ryan [107] see Halling, Christine