AIA News from the New York Society

Imagination - Experience - Science

Time: 1998; Place: USA
Who could imagine that in a few years there would be a worldwide pandemic? Very, very few!

Time: 162 CE; Place: Ancient Roman Empire
Who could imagine that in a few years there would be a major plague? Many, many people!

How the world has changed! But for the moment let me focus on "imagination."

A recent Smithsonian article (September 2021) references a book by the archaeologist Ann Axtell Morris in which

> she describes the archaeologist's three "absolutely necessary tools," which are the spade, the human eye, and imagination—the most important of all and most easily abused....
>
> Without imagination, she writes, the relics that archaeologists dig up are "nothing but dry bones and variegated dust." Imagination enables them "to rebuild the walls of fallen cities...visualize great trade roads stretching across the world, filled with curious travelers, greedy merchants and soldiers setting forth to great victories or defeats now completely forgotten."

Imagination, in my view, is crucial and as Morris wrote the "most easily abused." But archaeological and more generally social science imagination are not fantasy because they require more. Major breakthroughs in the natural sciences are often made by young scholars while breakthroughs in the social sciences are often achieved by older researchers. I marvel at the difficulties and creativity necessary for advances in the natural sciences and yet in some ways advances in social science are more challenging. Social science delves into the complexity of differing human cultures, languages, motivations, institutions and social structures, among many other aspects. This is a daunting task. It requires life experience, hence the observation about older researchers making breakthroughs.

Life experiences are critical but, in my view, not sufficient because any researcher or group of researchers, no matter how diverse, are bound by time, place and culture. One way to reduce these limitations is through familiarity with the work of researchers, past and present. Another way is to engage in cross-cultural and interdisciplinary investigation. How many times do works assert universal conclusions from research drawn from one particular culture or one particular discipline? In my view, far too many! In this regard, I have always found archaeology almost unique in its interdisciplinary engagement.

But for imagination to work appropriately more is needed. The Smithsonian article, quoting Morris-about the role of imagination:

> It must be carefully controlled by such facts as are available, while remaining fluid enough to shift and conform as new facts

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> are brought to light. It must be governed by stern logic and good common sense, and...measured out with the care of a chemist who compounds a life-giving drug.

Evidence is another critical factor! So, returning to where this Letter started, imagination is crucial but must be seeded by life experience, by knowledge of other research, by collaboration across disciplines and by evidence, replicable evidence. And all this through cross-cultural time—welcome to the world of archaeology.

The AIA-New York Society, your local society, is dedicated to bringing you into the world of archaeology. Please see the listing inside of forthcoming 2022 lectures—all digital. You will receive an email for you to register. Registration is required but is free. Please mark your calendars. Also included in this Newsletter are other items that you will find of interest. Many thanks for your membership in the AIA-NY Society.

- *Jeffrey Lamia*
President, AIA New York Society

AIA New York Society Spring 2022 Lecture Series

Phoenicians, East and West: Revealing a Lost Mediterranean Civilization through Archaeological Research from the Levant to Spain

Dr. J. David Schloen
Professor of Near Eastern Archaeology, Oriental Institute
and Department of Near Eastern Languages and Civilizations, University of Chicago

Beginning around 1500 BCE, if not earlier, Bronze Age Canaanites from the eastern shore of the Mediterranean began to sail westward, pioneering sea routes from Egypt to Greece and creating an international exchange system. By 900 BCE they were sailing as far west as Spain and Portugal, spreading the method of alphabetic writing we use to this day and inventing new techniques of trade that stimulated a new kind of market-based exchange. They settled in Sicily, Spain, and North Africa, linking east and west while planting the seeds of the great empire of Carthage, which fought Rome for control of the Mediterranean — and lost. Rome utterly destroyed Carthage in 146 B.C. and tried to erase its memory, but archaeology has revealed the amazing exploits of the Phoenicians and their Canaanite ancestors, the "makers of the Mediterranean."

In this lecture, Professor David Schloen of the University of Chicago will use archaeological finds to illustrate the long history of the Canaanites and their Phoenician descendants from the Bronze Age to the Roman era, explaining their role in making the ancient Mediterranean a single economic and cultural space. In ancient times, they were famous as sophisticated, literate merchants and purveyors of luxuries, traveling far and wide and teaching their backward customers—the Hebrews, Greeks, and many others—how to read and write. Sadly, their own literature has been lost and we know about them only through occasional distorted comments made by their rivals. However, archaeological research on the Phoenicians is progressing rapidly, with exciting new discoveries that help us to know when and where and how they traveled and the extent of their economic and culture impact on world history.


February 8 at 6:00 pm
Webinar *(details and link forthcoming)*

Humans and Alcohol: The Archaeology of a Deeply Entangled Relationship

Dr. Michael Dietler
Professor of Anthropology and of Social Sciences in the College Associated Faculty, Department of Classics; Affiliate, Program on the Ancient Mediterranean World, University of Chicago

Attitudes about alcohol exhibit a striking degree of ambivalence. On one hand, drinking alcohol is a broadly accepted and very popular activity around the world. Indeed, alcohol is by far the most widely and abundantly consumed psychoactive agent. Current estimates place the number of active consumers at over 2.4 billion people worldwide (or roughly a third of the earth's population). Yet, alcohol has also sometimes acquired a bad reputation as a dangerous substance and caused several mass panics. Some governments and religions have even tried to ban it altogether. Archaeological evidence shows that the human relationship with alcohol is by no means recent: the practice of drinking has a very deep antiquity on multiple continents and the biological adaptation that enables humans and a few close primates to metabolize alcohol goes back at least 10 to 12 million years. This lecture presents an anthropological framework for understanding the social and cultural significance of alcohol and examines the archaeological evidence for drinking in the past, with particular attention to the nature and consequences of the wine trade in the ancient Mediterranean.

(Ira Haupt II/Charles Elliot Norton Lecture)

March 10 at 6:00 pm
Webinar *(details and link forthcoming)*

From Predynastic Reality to Dynastic Imagery: The Language of Animals at Hierakopolis, Egypt

Dr. Renee Friedman
Director of the Hierakonpolis Expedition; Research Fellow of the Griffith Institute, University of Oxford

In the iconography of Predynastic Upper Egypt, animals play a dominant role in conveying messages of power and control. Their distinctive and stylized images appear in various media across Upper Egypt, including pottery, palettes, figurines and rock art . At the major predynastic site of Hierakonpolis, excavations have shown that the ruling elite took the language of animals more literally than elsewhere: they not only portrayed a variety of animals, they also captured and kept a range of actual living species, some for use in ritual sacrifices, others evidently for display in life and death, ultimately burying them around their own impressive tombs. This remarkable menagerie included elephants, aurochsen, hippos, hartebeest, crocodiles, leopard and baboons. These large and exotic species known first or only at Hierakonpolis must have made a strong impression because in the social, political and artistic reformulation that accompanied the formation of the Dynastic state, these animals become prominent components In messages of power and reverence. In this talk we will explore the uses and meanings of animals at Hierakonpolis and their influence on the development of Ancient Egyptian civilization.

April 23 at 1:00 pm
Webinar *(details and link forthcoming)*

AIA-NY Society Scholars, 2021–22 Announced

The AIA-NY Society is pleased to announce the awardees of its annual program, the AIA-NY Society Scholars Program. The Program seeks to promote young scholars in their study of archaeology by engaging them in the AIA and the activities of the AIA-New York Society and by supporting their participation in fieldwork projects. Designed specifically for the benefit of college students in New York City, the program is wholly administered and overseen by the New York Society.

Lylaah L. Bhalerao is a first-year PhD Student at the Institute for the Study of the Ancient World, New York University, and she comes to New York as a Fulbright Scholar from the United Kingdom. She has a background in Classics but has become interested in developing decolonising approaches to Ancient Mediterranean art and heritage, in situ and in museums in Europe and North America. She is also committed to improving equality and diversity within the disciplines of Classics and Archaeology. In 2018, she participated in the British School at Athens Undergraduate Summer Course and she has volunteered at the British Museum and the Museum of Classical Archaeology, Cambridge, helping to develop a trail on the polychromy at the latter. After her studies, she hopes to work as a curator and collaborate with heritage organizations to develop their policies.

My name is Illyamani Castro. I went to New York University for my Bachelors in Anthropology with a concentration in Native American and Indigenous studies. My specific area of interest is pre-colonial Andean cultures and languages. Currently (and COVID willing) I have plans to go to Ireland, Belize, and Peru for archaeological field school, as well as getting my Masters degree at University of Florida for Latin American Studies.

Braden Cordivari is a first-year PhD student at the Institute for the Study of the Ancient World. His research interests include craft production, archaeological science (archaeometallurgy), and the Iron Age in Anatolia and Greece. He recently completed an MPhil in Archaeological Science at Cambridge with a thesis on copper metallurgy in the southern Republic of the Congo during the 15th–17th centuries CE. He has excavated at Gordion, Turkey, and Morgantina, Sicily.

Kristen M. Delatour is a senior at the City College of New York majoring in Anthropology and minoring in English. Within her undergraduate education, she has developed an interest in the archaeological study of Afro-diasporic foodways within the Atlantic world to understand more about how the practice of consumption and preservation intersects with racial capitalism. She worked as an intern with Preservation Long Island analyzing their archaeological collections of Joseph Lloyd Manor focusing on local consumption habits of the 20th century. Kristen plans to continue her research in graduate school and hopes to teach archaeology with an emphasis on accessibility to public education.

My name is Leticia Lobato-Gaudioso and I will be graduating in the Fall of 2021 from The College of Staten Island with two Bachelors's degrees, one in Art and the other in History, with a minor in Business. I am extremely passionate about Art and how it empowers people to make needed changes in our society, but the science of archaeology is my true passion. By combining both I hope to pursue my graduate degrees in arts and archaeology and to be able to apply my knowledge through educational programs in museum settings especially among young children using my current experience from the New York City Department of Education.

Kerri Matthews is a graduate student in the MS Human Skeletal Biology program at NYU. Her interests are in Zooarchaeology, Environmental Archaeology and Forensic Anthropology. She is particularly interested in faunal remains discovered at archaeological sites in New York City and Long Island, NY. She has worked with faunal assemblages at the Bayside Historical Society and is currently working on a project with the NYC Landmarks Preservation Commission's Archaeological Repository.

Spotlight on...

An AIA-NYS 2021–22 Scholar Shares His Experience Excavating an Elite Phrygian Tomb at Gordion in Central Turkey

I have been a member of the Gordion Archaeological Project in central Turkey since 2015, working in various capacities on the site's mapping, excavation, and research. Gordion was the capital city of the Phrygians, legendary already in antiquity for King Midas and the Gordian knot. Excavations at Gordion are directed by Dr. C. Brian Rose of the University of Pennsylvania, which has sponsored research there since 1950. In addition to the architecture on the citadel and the surrounding town, there are over 100 tumuli, monumental burial mounds, around the site, including the earliest known in Anatolia, dated to 850 BCE. In 2019, the Museum of Anatolian Civilizations in Ankara, in collaboration with the Gordion Project and team members including myself, carried out the excavation of one of the largest of these, Tumulus 52.

Excavations revealed that Tumulus 52, over 100 m in diameter and around 14 m in height, contained a typical Phrygian wooden tomb chamber. The roof had collapsed in antiquity, and the chamber was partially robbed during the 13th–14th centuries CE. Fortunately, the collapse of the roof protected many of the grave goods and the burials themselves. Inside the chamber were the inhumations of a young woman and child, as well as hundreds of amber beads, a remarkable burial unparalleled at Gordion. There were also typical elite Phrygian grave goods, including bronze banqueting equipment, fibulae, and belts, comparable to objects from the 8th century BCE, the period of Gordion and Phrygia's greatest prosperity.

Research is ongoing into questions including a more specific date, the origin of the amber, and the construction sequence of the tumulus, the last of which is facilitated by photogrammetric 3D modeling. We hope to understand how Tumulus 52 and the people buried inside relate to the other monumental burials at the site and events within the development of the city.

This project would not have been possible without the partnership of the Museum of Anatolian Civilizations, particularly the former and current directors, Enver Sağır and Yusuf Kıraç, the Conservation Department directed by Cengiz Özduygulu, and the support of the Turkish Ministry of Culture. My thanks also to Gordion Project director Brian Rose and assistant director Ayşe Gürsan-Salzmann and to my colleagues at the Ankara Museum and Gordion Project, particularly Mustafa Metin.

- Braden Cordivari

The author during the excavation of the tomb chamber, with the tops of the wooden beams of the walls visible in the foreground and background. (Photo by Ali Can Kırcaali)

Feature: Drone Mapping and Modeling on the Lagash Archaeological Project

In recent years, small unmanned aircraft systems (sUAS, commonly called "drones") have become regular tools in the archaeological toolkit. Gone are the days of perching precariously atop ladders or jury-rigging camera pole mounts in order to take top-down photos of trenches; nowadays it's far simpler to fly a drone instead. Even consumer-grade quadcopter drones have cameras that are entirely adequate for such tasks. These aircraft also provide new opportunities for aerial landscape photography and can even be used as platforms for other types of remote sensing such as thermal imaging, LiDAR, and multispectral arrays.

Alongside the revolution in the archaeological use of drones, advances in computer processing power have opened up the use of photogrammetry in our field. Specifically, a scene or object can be photographed from multiple angles and stitched together with specialized software into an accurate three-dimensional representation in a process called "Structure from Motion" (SfM) photogrammetry. With increasing frequency archaeologists are using this kind of photogrammetry to document excavations, record buildings for cultural heritage and preservation, and make models of artifacts. Unsurprisingly, a growing number of projects are using these two new technologies—drones and photogrammetry—in tandem to make maps and other visualizations of their sites...

...which is where I come in.

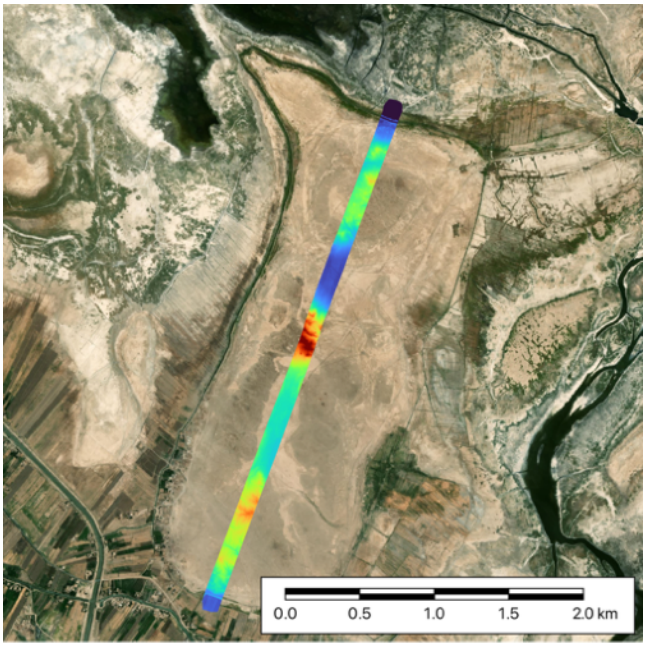
In September of 2021 I was asked by Dr. Holly Pittman, director of the University of Pennsylvania's Lagash Archaeological Project, to join her team as their drone pilot and mapmaker. After thirty years of hoping to someday visit Iraq, I jumped at the offer—and a month later was brought to Iraq alongside the rest of her team. My brief was simple: I was to create a new topographic map of the site and also provide the Iraqi authorities (SBAH, the State Board for Antiquities and Heritage) with aerial imagery and 3D models that they'd requested. That this field season would only be 2½ weeks long meant that I had to work fast—but it's a testament to how efficient drone mapping is that I not only met the stated goals but also took on side projects

and still had time to assist Dr. Pittman's graduate student collect soil core samples.

The site of al-Hiba is located in Dhi Qar Governorate in southern Iraq, about 25 miles north of Nasiriyah. It's a large site—the tell proper is over 450 hectares—often surrounded by marshes, as it probably was in antiquity. In the late 3rd Millennium BCE, during the "Early Dynastic III" period, Lagash (al-Hiba's ancient name) was one of the most powerful city-states in Mesopotamia. The site, however, is a fairly low and flat tell with architecture from that period visible from the air, and isn't an imposing mound. In the modern day, the ancient state of Lagash is most famous for its ruler Gudea—one of whose many statues is on display in New York at the Metropolitan Museum of Art. But Gudea was of the Neo-Sumerian period, two centuries later, and ruled from the city of Umma—and Lagash, the titular name of his state, was by then a much less significant urban center. In many ways, the uniqueness of al-Hiba/Lagash, with its relatively shallow deposition, makes it a perfect candidate for exploring new methods of archaeological prospection.

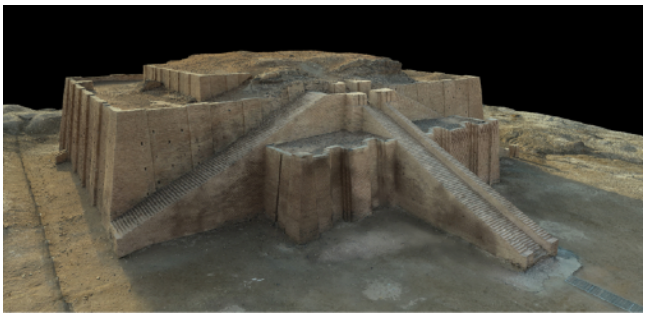
The archaeology of al-Hiba/Lagash is certainly not unknown. Prior to the inaugural 2019 season of the Lagash Archaeological Project, Dr. Pittman worked on the 1990 season of the NYU/Metropolitan Museum excavation there, itself a resumption of a project begun in 1968 but interrupted by war. At the start of the 1968 excavations, a topographic map was made of the site using traditional plane table surveying techniques. Clearly, modern technology (and drone mapping, in particular) could be used to generate a new map, with far greater accuracy, in support of the new project's goals.

Drone mapping consists of flying the drone in a pre-programmed zig-zag or criss-cross route across the site, with its camera pointed downward taking pictures at regular intervals to ensure a minimum overlap between adjacent photographs. The SfM software then recognizes features in each photograph as well as changes in perspective to assemble a highly accurate 3D model situated globally by the photographs' GPS metadata. Typically, such a flight plan will have a number of Ground Control Points (GCPs) placed across the site and measured with a total station or sub-centimeter GPS to provide fixed points of reference to the software. However, because of the great size of al-Hiba/Lagash, we felt that such a process would involve too much setup and be too slow to be practicable, so instead we used a DJI Phantom 4 RTK drone which combines four satellite positioning systems: GPS (USA), Galileo (Europe), GLONASS (Russia), and BeiDou (China). When flown in communication with a similarly-equipped static base station, this drone knows its location to about 1.5 cm horizontally and 2 cm vertically. With this advanced system, the entire site was mapped in under five days, including a buffer zone which increased the survey area to about 500 hectares. Starting at the south end of the site, I flew east–west transects, landing the drone and replacing its batteries every 25 minutes, in two-hour sessions. Over 12,000 photographs taken this way have since been uploaded to the online service DroneDeploy where they were processed into orthomosaic images and elevation models. Each of these elevation models has since been brought into the project GIS for further processing, and will soon be combined into the new contour plan.



Elevation map of a longitudinal transect flown over al-Hiba/Lagash, superimposed on a satellite image of the site. The rainbow colors indicate relative elevation, with red being the highest points on the site and indigo the lowest.

Between sessions at Lagash, I had the good fortune of visiting the site of Ur. Having studied archaeology at the University of Pennsylvania, where many of the finds from C. Leonard Woolley's Ur excavations are deposited, and having written about the site for my Master's Thesis, this was a special treat. My primary task at Ur was to make a 3D model of the E-dub-lal-mah structure (a small shrine near the Great Ziggurat), using the same drone-based techniques, for the SBAH scientists and conservators. This flight was completed successfully in under half an hour, so I took the opportunity to plan a flight path over the area of the Royal Cemetery and another over the Ziggurat. The Royal Cemetery imagery was for my personal use, in hopes of answering questions about its excavation that I initially raised in my MA, and is unlikely to be of general public or scholarly interest. On the other hand, I flew over the Ziggurat in hopes of producing a 3D model of that iconic structure. Happily, the finished product exceeded my wildest expectations, and by the time that you're reading this it will be publicly available through Sketchfab, an online site for 3D models favored by archaeologists.



3D model of the Great Ziggurat of Ur.

Owing to the success of the drone mapping and modeling of the 2021 season of the Lagash Archaeological Project, we are investigating additional uses of the equipment in 2022, including thermal imaging and detailed aerial photographs of those parts of the site where subsurface architecture is readily visible after the spring rains.

- Paul Zimmerman
Vice President, AIA New York Society

For more information about the Lagash Archaeological Project, visit their website at:
https://web.sas.upenn.edu/lagash/

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