



# AERA 2012–2013

## ANNUAL REPORT

# New Understandings, Foundations for the Future

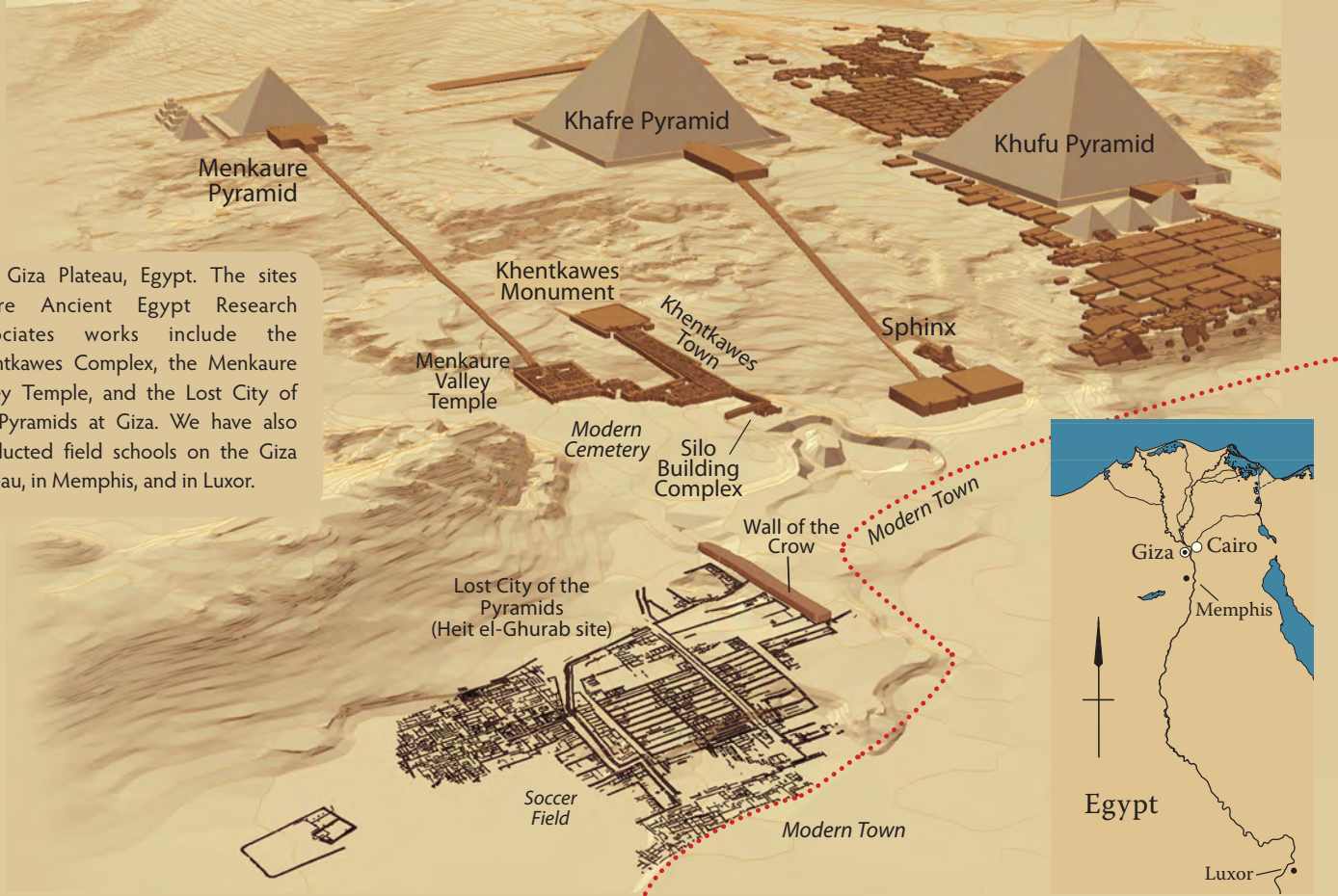
Ancient Egypt Research Associates

Curious about our cover?  
See page 2

<http://www.aeraweb.org>



The Giza Plateau, Egypt. The sites where Ancient Egypt Research Associates works include the Khentkawes Complex, the Menkaure Valley Temple, and the Lost City of the Pyramids at Giza. We have also conducted field schools on the Giza Plateau, in Memphis, and in Luxor.



## AERA-Egypt: Who We Are

For over 25 years Ancient Egypt Research Associates (AERA) has brought together archaeologists from all over the world to address one of the most important questions in Egyptian and world archaeology: What is the origin and nature of the Egyptian state, one of the five original states of the ancient world.

Answers lie in our excavations of the ruins of ancient settlements at the southeastern base of the Giza Plateau: the “Lost City of the Pyramids” south of the gigantic stone Wall of the Crow and the pyramid towns of Queen Khentkawes and the Pharaoh Menkaure. Through multi-disciplinary analysis and rigorous best standard practice of field archaeology, we open windows on the emergence of the ancient Egyptian civilization that built the Giza Pyramids and Sphinx as we shed light on everyday life at that time.

In 2005 AERA developed the extraordinary opportunity to work at Giza—granted by the Egyptian Ministry of State for Antiquities—into a training program for young Egyptian archaeologists who safeguard and investigate their country’s heritage. AERA teams have designed and directed nine archaeological training missions at the world heritage sites of Giza, Luxor, and Memphis in a comprehensive program funded by USAID through the American Research Center in Egypt.

Founded in 1985, AERA is a 501(c) (3) tax-exempt, nonprofit research institution located in Boston, MA, and Giza, fully registered in Egypt as a foreign non-government organization. AERA-Egypt owns and maintains the Mark Lehner Center in Giza. Our scientific and educational missions are supported by philanthropic individuals and foundations and USAID government funding in collaboration with the American Research Center in Egypt.

Ancient Egypt Research Associates, Inc.  
 26 Lincoln Street, Suite 5  
 Boston, MA 02135-2608 USA  
 E-mail: [cadilks@aeraweb.org](mailto:cadilks@aeraweb.org)  
 Website: <http://www.aeraweb.org>

© 2013 by Ancient Egypt Research Associates

The photos in our annual report were taken by Mark Lehner, Claire Malleson, Richard Redding, Ali Witsell, Jason Quinlan, Sayed Salah, Mary Anne Murray, and Heidi Nichols.

Cover photo: In the AERA field lab/storeroom at Giza, archaeobotanist and Director of Archaeological Science Dr. Claire Malleson works on ancient plant samples at her microscope while sheltered from flies by a mosquito net. The flies had been settling in the Petrie dishes with Claire's delicate, minute, sorted archaeological seeds, disturbing the samples. Study seasons, such as the one we held this past winter-spring, are especially critical for providing the time necessary to carry out comprehensive and detailed analyses of our collections. Excavation seasons do not afford specialists enough time to thoroughly study their samples and backlogs build up season after season.



# ANCIENT EGYPT RESEARCH ASSOCIATES

## New Understandings, Foundations for the Future

### A Message from the AERA Team

Yes, through all the news you've heard from the region, archaeology continues strong in Egypt. AERA worked full steam right through 2012 and the first half of 2013, making important contributions. We took this year as a study season to catch up on our backlog of materials and think about results. We sorely needed this time in the lab, at the computer, and in the library to analyze, integrate, and reflect on major discoveries we have made in the last several years.

#### Digging Deep Data

Without analyzing the material we have recovered—that is, without continuing to “excavate” by going to the micro-level in the lab—and reflecting on the data, we don't really know what we've found or what our discoveries mean.

A case in point: a major new understanding of the Lost City site emerged when we began looking at the distribution of Levantine imports across the site. In previous seasons charcoal analyst Rainer Gerisch had identified—amidst the thousands of pieces of Nile acacia—bits of olive wood, oak, pine, and cedar, all from the Levant. When we plotted the locations of these bits across the site, we discovered that they were scattered all over—foreign woods imported at great cost, but apparently ubiquitous and abundant enough to burn. We also found another Levantine import, combed ware pottery fragments. Archaeologists had previously found complete combed ware jars in the tombs of the well-to-do. But these pieces came from the galleries, which we hypothesized served as barracks. We began to realize the settlement must have been more than a workers' town, perhaps part of a harbor. Comparing our site with proven ports on the Red Sea that date from the Old and Middle Kingdoms, we can envision the Lost City as perhaps *the* port city of its time, a working hypothesis that Mark Lehner discussed in the last issue of our newsletter, *AERAGRAM* 14-1.

Here we are proud to share with you AERA's other major achievements over the past year, ranging from work in the lab, AERA field school accomplishments and new programs, developments with our archive and database, to plans for the AERA-Egypt Center in Giza.

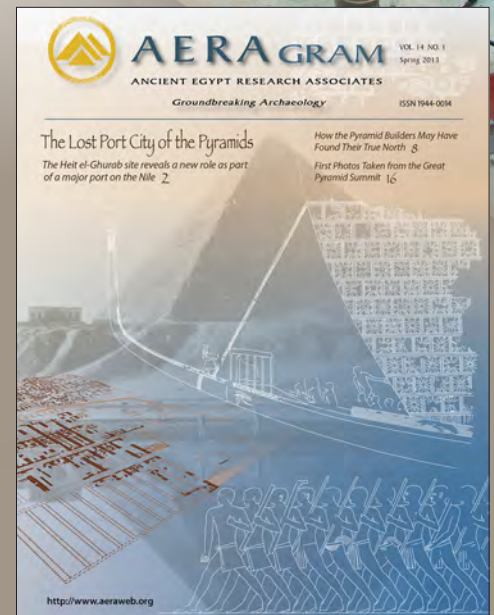
#### Accomplishments of 2012–2013

##### ❖ Analysis and Publication Field School Completes Book

Field School students convened at Giza and completed work they began during our 2010 Analysis and Publication Field School (APFS) for a 300-page volume that AERA will publish.

##### ❖ Archaeological Science Lab Program

Specialists in ceramics, animal bone, plant remains, objects, and clay sealings came to our Giza Lab over five months for intensive analysis of material excavated from the Lost City site, the Menkaure Valley Temple, the Khentkawes





Town, and the Silo Building Complex, with AERA Director of Archaeological Science Dr. Claire Malleson overseeing the lab.

❖ **Sealings Survey and the SBC Corpus**

Dr. John Nolan and Ali Witsell completed a study of clay sealings retrieved in 2012 from the Silo Building Complex and from our work in the Khentkawes Town. They discovered the names of four 5<sup>th</sup> Dynasty kings, shedding new light on royal activities in these areas during the late 4<sup>th</sup> to mid 5<sup>th</sup> Dynasty.

❖ **Botanical Study: A Snapshot of Old Kingdom Agriculture**

Dr. Claire Malleson completed a preliminary study of the plant remains from House E in the Khentkawes Town, which offer a unique snapshot of cultivated fields and agriculture during the Old Kingdom.

❖ **Faunal Analysis: Elegant Dining in a High-Status House**

AERA Faunal Analyst Dr. Richard Redding completed a study of the mammal and fish bone from House 1 at the Lost City site and determined that the residents ate the choicest meat and fish available to the town.

❖ **Data Curation Project Phase I Completed**

AERA Head Archivist Megan Lallier, Post-Excavation Manager Freya Sadarangani, Geographic Information Systems Director Rebekah Miracle, and Senior Archaeologist Dan Jones completed the first phase of a project to resolve the enormous size, complexity, and variability of AERA's vast trove of records into a uniform, searchable dataset that scholars will be able to access in a number of meaningful ways.

❖ **AERA K-12 Educational Outreach Launch**

Megan Lallier carried out a two-day pilot session of her new AERA Archives Outreach Program in the 4<sup>th</sup> grade class of a Vermont elementary school.

❖ **Archaeological Field Training Program (AFT)**

AERA-Egypt Executive Director Mohsen Kamel and Co-Field Director Ana Tavares developed the new Archaeological Field Training (AFT) program for both Egyptian and non-Egyptian students in partnership with the American University in Cairo. The Egyptian Ministry of State for Antiquities granted permission for the program, which will be partially supported through tuition, to begin in January 2015.

❖ **AERA-Egypt Building Campaign**

Ramses Nosschi of MADA Architects and Nicholas Warner finished concept design drawings for new facilities and renovations at our AERA-Egypt Center in Giza.

AERA's Year 2012-2013 was important for analyzing past discoveries and exploring further in the lab, with significant new insights into the totality of what we have excavated and recorded over many seasons. We laid the foundation toward greater sustainability while broadening AERA's reach through partnering with other organizations and institutions. In curating our archives, in our building campaign, and in setting up the AFT program, we took important steps toward ensuring a future for AERA's contribution to Egyptian archaeology.



# COMPLETING THEIR FIRST BOOK OF RESEARCH PAPERS: AERA Analysis and Publication Field School

Writing papers for publication challenges all academics, especially the first time they prepare a scholarly article. So we were delighted and proud to see the students in our 2010 Analysis and Publication Field School (APFS) complete their first research papers, which AERA will publish.

With the 2013 APFS we continued AERA's training program for young archaeologists in the Egyptian Ministry of State for Antiquities (MSA). Our field schools began in 2005 and grew into a comprehensive series of courses leading to the first Analysis and Publication Field School in 2010 under Co-Field School Director Ana Tavares. Students learned the basics of taking raw excavation data and material culture through analysis and writing to publication. They put classroom training into practice by working on areas and material excavated from AERA digs that field school teams had helped carry out, aiming for a publishable manuscript in English.

In 2013 a core group of students from the original APFS reconvened at the Mark Lehner Center in Giza to complete their 2010 work. Freya Sadarangani, AERA-ARCE Field School Instructor and Post-Excavation Manager, and Ali Witsell, Managing Editor, worked intensively with the team to help them finish their analyses and text. They challenged the students to go beyond purely descriptive reporting and look critically at their material, asking what it can tell us about the past.

At the end of the 2013 APFS session, Ali and Freya began editing the completed papers, working closely once again with the students to hone their articles. The volume of APFS papers goes to press this fall. Of all the publications we have produced, this will be one of the most gratifying.

The core group from the 2010 Analysis and Publication Field School who resumed work during 2013. They completed articles for publication on the topics listed under their names.



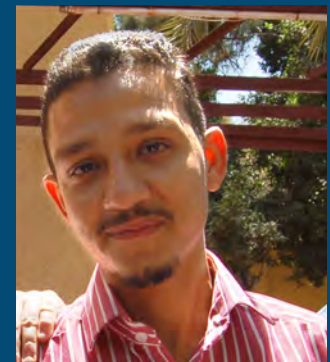
Mahmoud el-Shafey  
*Pottery, Main Street East Area*



Sherif Abd el-Monaem  
*Pottery, Main Street East Area*



Mohamed Naguib  
*Pottery, Main Street East Area*



Hassan Ramadan  
*Illustrator*



Rabee Eissa  
*Area EOG-D Bakery Excavations*



Rebab el-Gendy,  
*Plant Remains, House E  
Khentkawes Town*



Hanan Mahmoud  
*Area AA Bakery Excavations*



Rasha Nasr Abd el-Mageed  
*Faunal Remains, AA Bakery*



Ashraf Abd el-Aziz  
*Main Street East Excavations*



Afaf Wahba  
*Burials, Chute Area*



# A RUN OF ROYAL FAVOR: History from Clay Sealings

Dr. John Nolan, AERA Associate Director, and Publications Managing Editor Ali Witsell do double duty as AERA’s specialists in sealings—bits of clay that ancient Egyptians used to secure bags, boxes, jars, and string locks on doors and windows, as well as to label items. By rolling a hard cylinder into the clay daub while still wet, the Egyptians would impress the design incised on the cylinder—such as names, titles, figures, and geometric patterns. When the hard, dry sealing was broken off, the fragments were discarded.

This season John and Ali studied a new group of sealings from the Silo Building Complex (SBC), which we first exposed in 2011. Located east of the Khentkawes Town (κκτ) and basin, this mudbrick complex appears to have been a bakery, storage, and distribution center. John and Ali also studied their backlog of sealings from previous seasons’ excavation in κκτ and the Menkaure Valley Temple.

Altogether they examined 244 sealings and sealing-related objects—such as unused bits of clay prepared for the sealing process—including 144 from our limited 2012 excavations in the SBC. These sealings produced some surprising insights regarding royal activity in the κκτ and SBC areas. While the κκτ was likely built at the end of the 4<sup>th</sup> Dynasty, we knew of a single sealing bearing the name of the first 5<sup>th</sup> Dynasty king from our 2005 excavations. Then during the 2012 SBC excavations we identified 5<sup>th</sup> Dynasty sealings, one bearing Niuserre’s name and the title “Overseer of the Pyramid (town) of Khafre.” The latter raised the possibility that the king might have dedicated the SBC to maintaining the memory of Khafre. Taken in combination with other evidence that Niuserre’s officials refurbished the nearby Menkaure Valley Temple, we proposed that the royal house, having moved away from Giza after Menkaure

was laid to rest, was not active in these areas, until Niuserre returned nearly 40 years later.

But John and Ali’s work this season forces us to reconsider our ideas. In their κκτ backlog and from the SBC corpus combined they found Userkaf, Sahure, Neferirkare, and Raneferef sealings. Additionally, in the SBC corpus, they identified 10 sealings bearing the name Niuserre. Taken altogether these sealings give significant historical depth to the occupation here. Sealings dating to the reigns of Userkaf through Niuserre imply at least intermittent activity in this area for almost 60 years. As all of these sealings bore the Horus name of the king inside a *serekh*, a heraldic device, which was used only while the king was alive, we know the seals that left these impressions were made during that king’s reign.

This new sealing evidence gives us a clearer picture of royal activity in κκτ during the transition from the 4<sup>th</sup> to 5<sup>th</sup> Dynasties. But curiously, we have no SBC evidence for Neferirkare, although he is represented in the κκτ sealings. Similarly, no



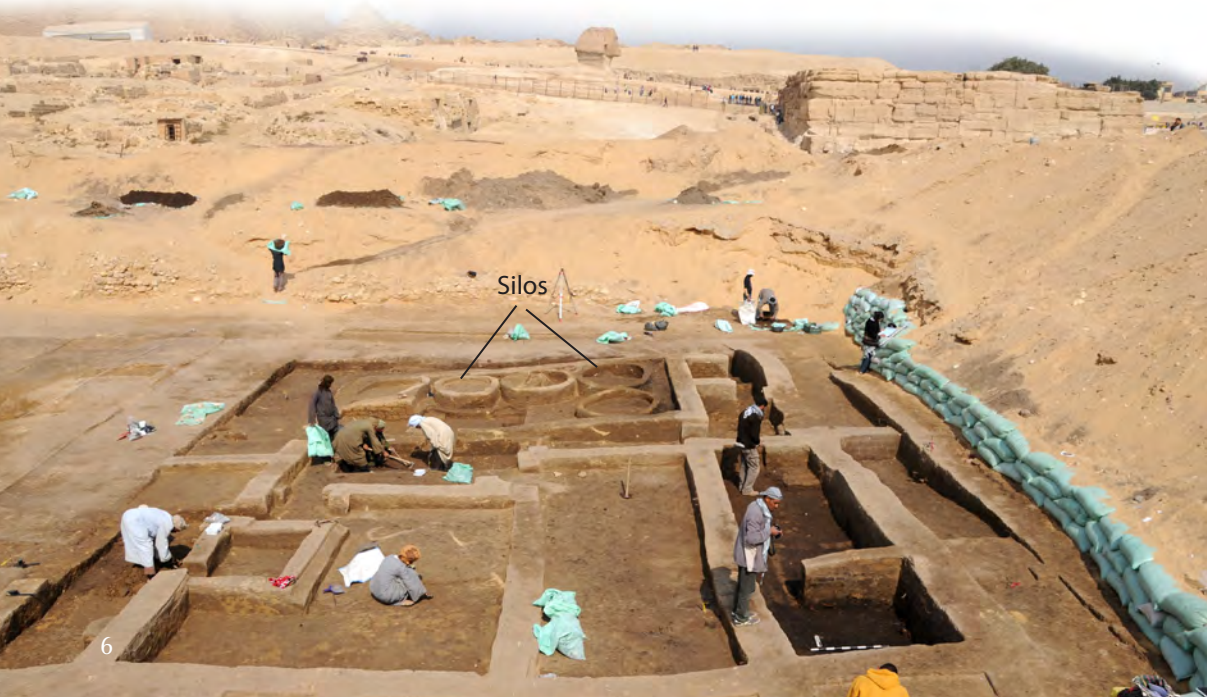
## A Run of 4th and 5th Dynasty Egyptian Kings

### 4th Dynasty

Khafre (2472–2448 BC)  
Menkaure (2447–2442 BC)  
Shepseskaf (2441–2436 BC)

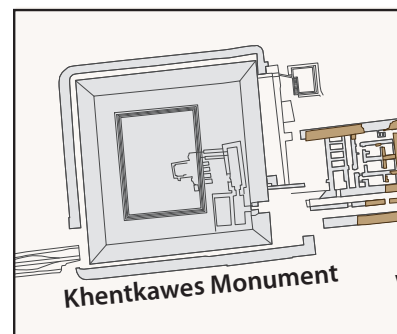
### 5th Dynasty

Userkaf (2435–2429 BC)  
Sahure (2428–2416 BC)  
Neferirkare (2415–2405 BC)  
Raneferef (2405–2403 BC)  
Shepseskare (2403 BC)  
Niuserre (2402–2374 BC)  
Menkauhor (2373–2366 BC)



Left: The Silo Building Complex, which AERA first uncovered in 2011 and excavated in 2012. View to the north.

Below: Map of the Khentkawes Town on the Giza Plateau. Just east of the settlement lies a basin and the Silo Building Complex.







## Hippo-Goddesses in the Sealings

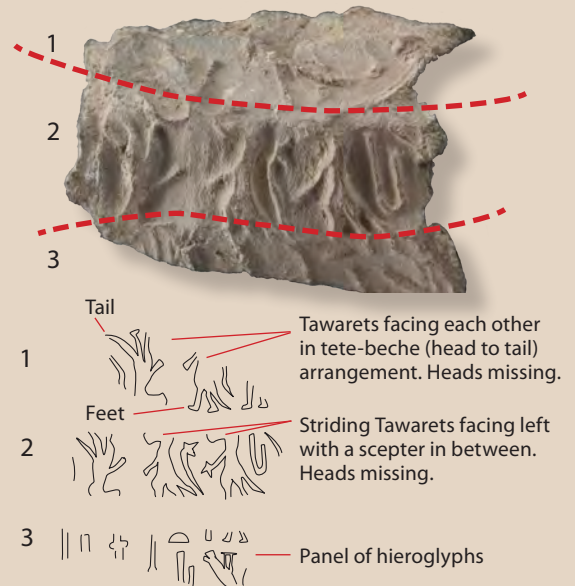
Amongst the Silo Building Complex sealings, Ali Witsell found one bearing an early representation of the hippo-goddess of childbirth, Tawaret, with leonine arms and legs and a crocodile tail. Three rolls of the cylinder seal created the three impressions, with the upper and middle ones repeating elements of the same part of the seal, just slightly askew. The upper impression gives the feet of the figures in the middle impression, but all the tops of the heads are missing. The lowest impression gives a panel of hieroglyphs too partial, unfortunately, to suggest a solid reading.

The back of the sealing bears the impression of a peg and string closure—twine or string coiled around a wooden peg or dowel. These fasteners are often associated with storage devices such as small granaries or bins.

The representation of Tawaret on the SBC sealing is not unique. Other examples can be found among Old Kingdom sealings, such as the possible Tawaret figure highlighted in blue in the drawing below. The figure to the right is a fully developed Tawaret representation common in later periods. A modern reproduction of a Tawaret figure graces the fountain at our AERA-Egypt Center, as shown on page 15.

Animals, and among them hippos, are a common motif in these informal Old Kingdom seals, so called because they do not include the titles of officials, as do formal sealings.

Sealing 5175 from the Silo Building Complex



Left: Old Kingdom steatite seal with a Tawaret figure. (After P. Kaplony, *Die Rollsiegel des Alten Reichs, II, Katalog der Rollsiegel, B. Tafeln. Monumenta Aegyptiaca 3B*. Brussels: Fondation Egyptologique Reine Elisabeth, 1981, plate 169, number 112.)

Right: Line drawing of a Tawaret from a later period.

Facing page: Sealing 5067 bears Raneferef's name. The impression on the back indicates that it was used to seal a jar.

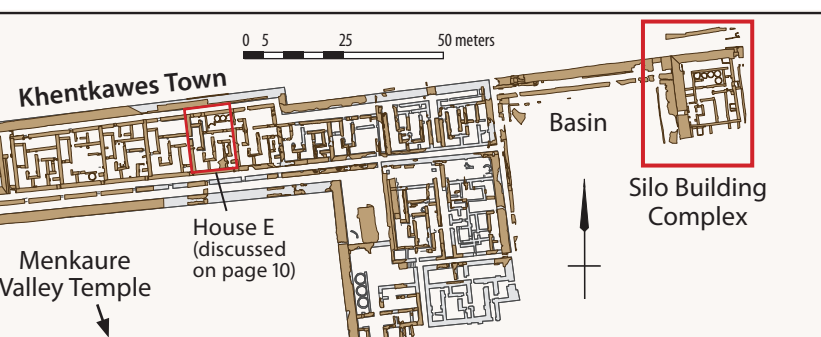
Above: AERA Associate Director and Sealings Specialist Dr. John Nolan.

sealings bear the name of Menkaure's son Shepseskaf although he was active at Giza completing his father's tomb and valley temple.

The new corpus of sealings also shed light on daily activities in the SBC. Over 18% of them were used with peg and string fasteners—a type of closure found on architectural features such as doors, windows, and granaries. Another 20% of the SBC sealings were used on jars. In contrast, at the Lost City site only 4% of the sealings were peg and string types, but nearly 47% were jar sealings. The SBC apparently had many secured architectural features—perhaps doors and granaries—suggesting the value and importance of the materials stored here.

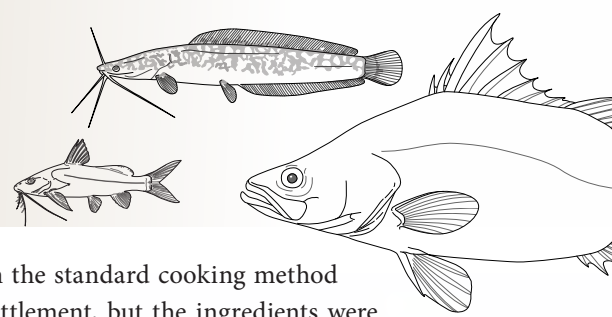
We can also conclude that the government was directly involved. The majority of the SBC sealings with impressions are formal—meaning they bore royal names and official titles. They outnumber the informals—those with geometric designs or figures—in a ratio of 3 to 1, an exceptionally high proportion. In addition, almost 5% of the SBC sealings were for documents, a significant number. At the Lost City site there were almost none except in a trash dump, Pottery Mound, where the total was less than 3% even though much of the deposit apparently came from a scribal workshop.

We hope to continue our excavations of the SBC in 2014 and recover more sealings to help flesh out its history and function.





# DINING IN A HIGH-STATUS HOUSE: The Good Life, 4th Dynasty Style



Since we first uncovered House 1 at the Lost City site in 2004, we have been learning about daily life here. The largest of all the houses we have found so far, it was outfitted with fine architectural details, such as a bed niche with painted plaster decoration and a unique double bed platform. The master of the house appears to have been a high ranking scribe who headed a scribal workshop based here.\* Now, we also know that the residents enjoyed a diet of the choicest meat and fish.

During the 2013 study season, faunal analyst and AERA Chief Research Officer Dr. Richard Redding examined nearly 1,100 bone fragments, discards from meals that excavators recovered from floor surfaces and the rubble of collapsed roofs, representing the final years of occupation in House 1.

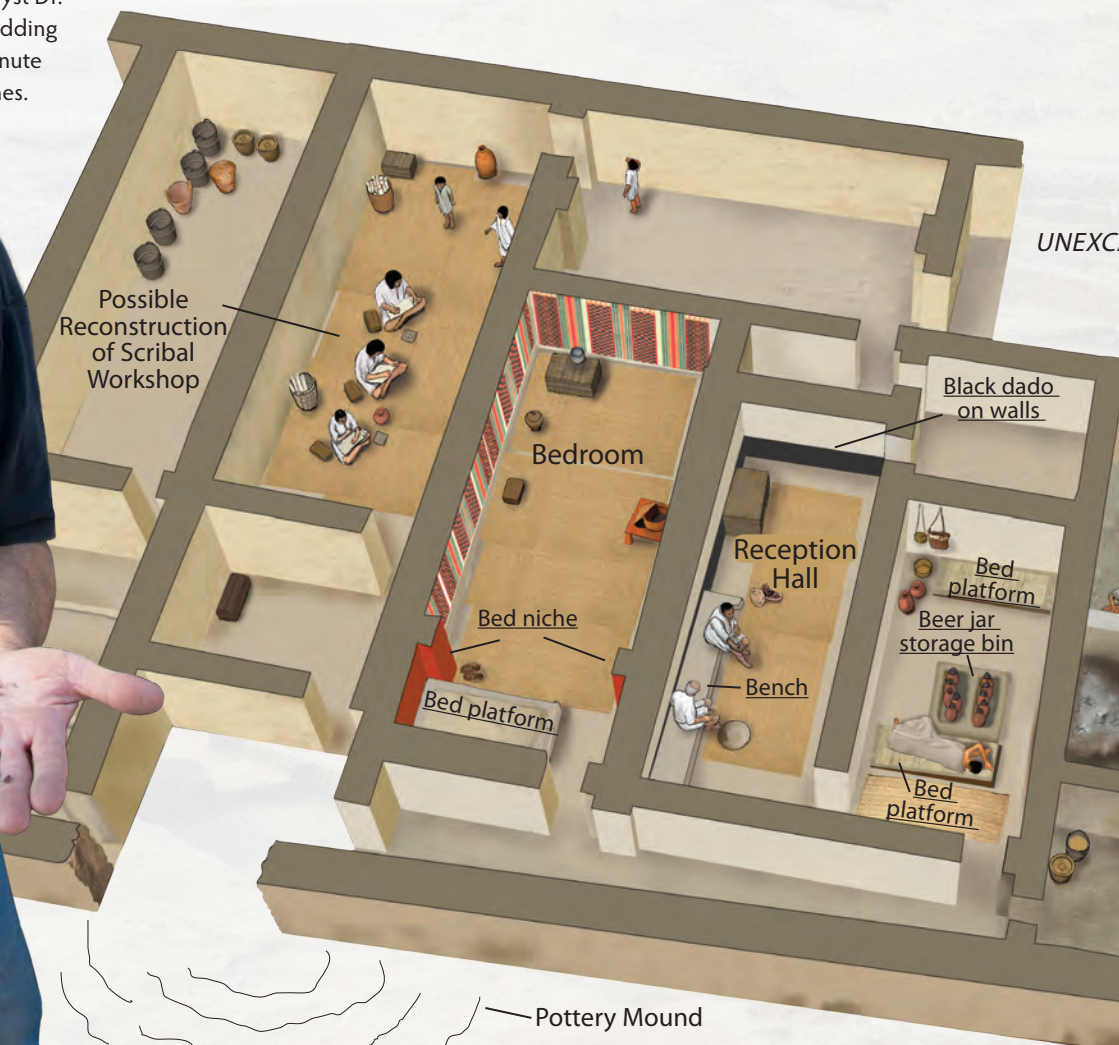
Most of the bone had been smashed while fresh, as indicated by telltale fracture patterns. Cooks apparently broke up cuts of meat for a stew pot. As the meat cooked, the marrow would have released flavor and fat into the broth. Stews

seem to have been the standard cooking method throughout the settlement, but the ingredients were not all the same. In House 1, stews were made of young cattle and Nile perch, highly prized in ancient Egypt and still expensive today.

While cattle supplied most of the meat, the residents also ate sheep, goat, and an occasional pig, all of which arrived at House 1 on the hoof. But cattle were delivered as cuts of meat, some of which reflect the special status of the residents. The hind legs accounted for more than three-quarters of the total cattle limb bones—an odd ratio since one would expect hind- and forelimb numbers to be about equal. But it is not so odd in light of ancient Egyptian religious practices. In tombs at Giza and Saqqara, scenes of offering processions show bearers carrying cattle forelimbs. Slaughter scenes in these tombs depict cattle on the ground trussed, with forelimbs removed. Apparently House 1 residents ate the hind leg “leftovers” from ritual slaughter. Richard has not found such a pattern in cattle limb bones in any other area of the site, except in Pottery Mound, the trash dump adjacent to House 1 where the residents of the house apparently discarded their rubbish.

\*John Nolan, PhD dissertation, “Mud Sealings and Fourth Dynasty Administration at Giza.” University of Chicago, 2010.

Faunal analyst Dr. Richard Redding holding minute animal bones.





Right: Detail of a slaughter scene in Sahure's mortuary temple at Saqqara. A butcher has cut off the bull's forelimb, which workers carry away for use as offerings. (After L. Borchardt, *Das Grabdenkmal des Königs Sahu-re'*, Band II, *Die Wanderbilder*, Leipzig, J. C. Hinrichs'sche Buchhandlung, 1913, plate 38.)



Left: The three most common fish species found among the animal bone recovered from House 1: from left, *Synodontis* and *Clarius*, two species of catfish, and Nile perch (*Lates*). *Clarius* is considered a very good food fish, but perch is the best and also the largest fish in the Nile.

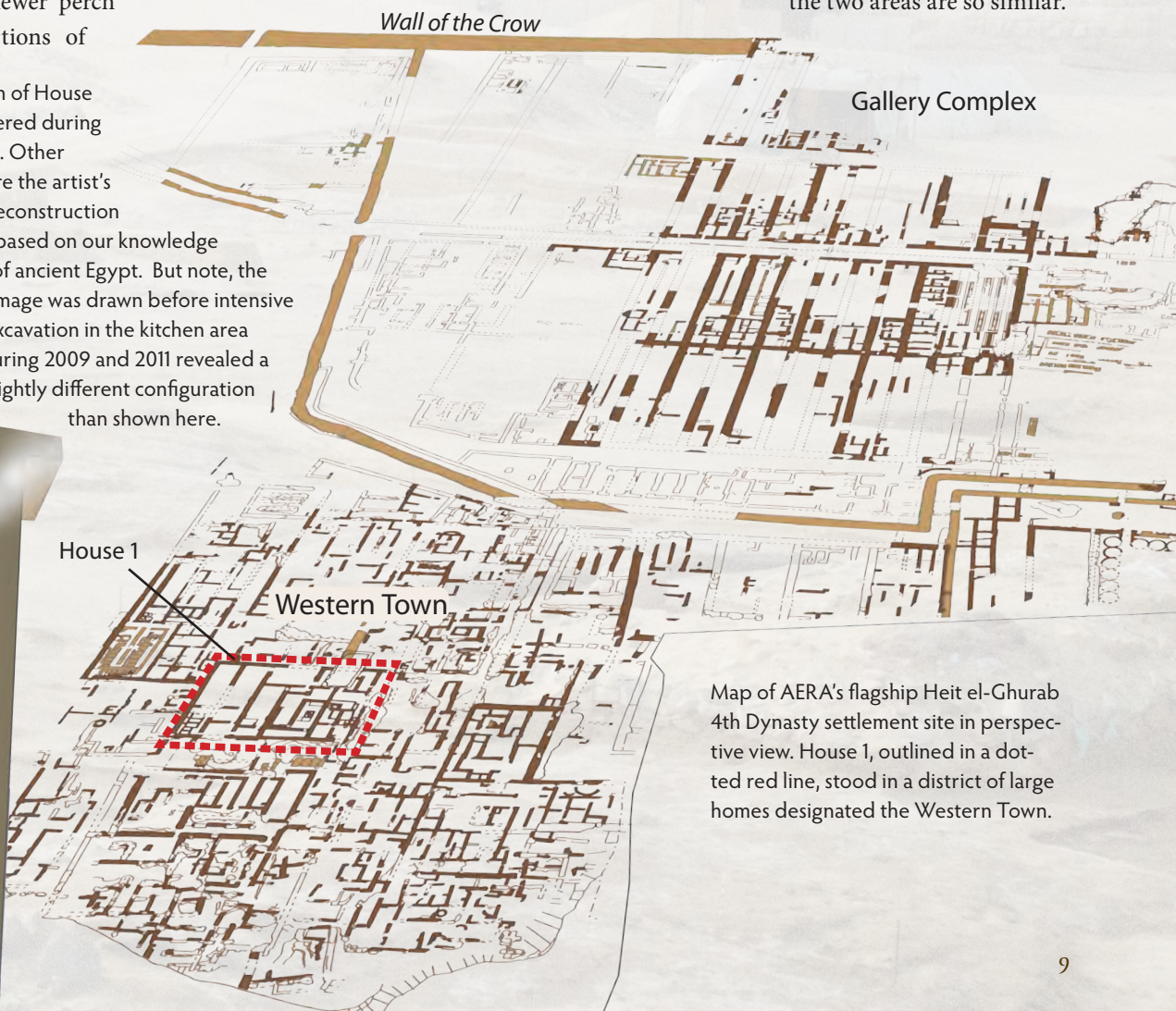
The residents also ate the most delectable beef: cattle 10 to 12 months old. Elsewhere across the settlement beef came from slightly older cattle, up to 24 months of age, culled at the optimum age to maximize the investment put into raising a herd.

House E residents enjoyed the choicest fish too. Two kinds of catfish and Nile perch accounted for most of their fish species, but the perch—the largest and most desirable fish in the Nile—supplied the bulk of the flesh. The House 1 perch were around a meter long. Other fish, though smaller, were at the large end of their species' size spectrum, suggesting that House 1 received the best pickings from catches, probably hauled in by professional fishermen. Perch in particular, as denizens of the deep Nile channel, could not have been caught by people who lacked equipment and training. In other areas of the settlement we see fewer perch and higher proportions of

less desirable species, as well as more varieties that could have been easily captured in shallow pools left by receding floods.

Another clue to the high status of the residents of House 1 comes from a single metapodial (toe) bone from what is probably a leopard. It could have come from a ritual garment. Whole leopard pelts with head and claws attached were worn in mortuary rituals by the *sem* priest, a high-ranking person. In 2004 two leopard teeth, which we speculated came from a ritual garment, were found in Pottery Mound, a trash midden next to House 1. We suspected that House 1 accounted for some of the refuse in the dump and was therefore the likely source of the leopard teeth. Now we are reasonably certain that House 1 did indeed dump trash in Pottery Mound, based on the fact that the composition of the faunal collections from the two areas are so similar.

Left: 3D reconstruction of House 1, with features discovered during excavation underlined. Other features shown are the artist's reconstruction based on our knowledge of ancient Egypt. But note, the image was drawn before intensive excavation in the kitchen area during 2009 and 2011 revealed a slightly different configuration than shown here.



Map of AERA's flagship Heit el-Ghurab 4th Dynasty settlement site in perspective view. House 1, outlined in a dotted red line, stood in a district of large homes designated the Western Town.



# A RARE SNAPSHOT OF ANCIENT FIELDS: Multi-Cropped Food, Fodder, and Fuel

Archaeobotanist and AERA Director of Archaeological Science Dr. Claire Malleson spent the 2013 season sorting and identifying over 57,000 charred seeds and plant parts recovered from a priest's house in the Khentkawes Town (map on pages 6–7). Based on a preliminary study (see page 5), she knew this was an exceptionally rich array of types superbly preserved. But not until well into her study did Claire realize that they offered an extensive inventory of the variety of wild plants/weeds growing in fields 4,500 years ago, with important implications for studying Egyptian agriculture.

The plant remains, all charred in fires, still retained many of their original features—such as shape, size, and surface texture—allowing Claire to identify many to species.

The plant types were typical of Egyptian settlement sites: mainly “waste” from threshing, winnowing, and sieving to clean the cereal crop. But Claire found far more types than are usually seen in these collections.

The waste products—cereal chaff and field weeds harvested with the crop—were valuable, especially as fodder and fuel. Harvest waste fodder often appears among botanical samples from Egyptian settlements, since dung was a common fuel in ancient Egypt, and some seeds and other plant parts pass through the animal gut more or less undigested.

But Claire's samples must have been burned directly as kindling, rather than in dung used as fuel. With minute hairs, delicate papery husks and other fine details still intact, the remains are too well preserved to have been bovine cud. Moreover, wood appears to have been the main fuel for cooking and heating; charcoal was abundant, while there were almost no remains of dung.

Thus the House E collection directly reflects the weeds/wild plants growing in cereal fields, but it offers more than most plant assemblages from Egyptian settlement sites. Because of the exceptional preservation, the collection includes species that are rarely recovered or identifiable—a unique snapshot.

Based on the habitat of the weeds, Claire concluded that the cereals consumed in House E were grown close to the desert

Far right: A “snapshot” created from a harvest scene in a tomb at Saqqara. A weed can be seen just below the sickle, growing with the cereal plants. Above: A charred clover (*Trifolium* sp) seed, a weed from House E, Khentkawes Town. Flower parts adhere to the seed. Shown about 10× actual size.

on the edge of the Nile floodplain. Since many of the weed species are much shorter than the cereals, farmers obviously harvested very low to the ground. They could have avoided many of the weeds by cutting high up on the stalk, as shown in the “snapshot” above. But perhaps the other plants were more than “weeds,” furnishing valuable kindling and fodder, which the farmers harvested together with the cereals and then sorted out later.

The great quantity of weed/wild seeds indicates that the ancient fields were heavily infested and apparently not weeded. Crop loss due to competition from these wild plants must not have concerned the farmers. Perhaps they intended the fields to be heterogeneous reservoirs of many useful plants—even if cereals were the primary ones.

Claire also inferred that harvest workers cleaned the crop only minimally before it went into granaries. This cleaning job required a large workforce for just a few days/weeks once a year. The rest of the cleaning was done when grains were taken out of storage as needed. Apparently it was more economically viable to have workers clean grain through the course of the year rather than immediately following the harvest.

Excavations in 2009 at House E in the Khentkawes Town on the Giza Plateau. The plant remains that Claire Malleson studied came from the fill collected from hearths and floors, and from under the silos seen in the foreground. View to the south.



Claire Malleson,  
AERA Archaeobotanist  
and Director of  
Archaeological Science





# DATA CURATION PROJECT: Phase I Completed

Over the past 25 years AERA excavation teams have collected vast amounts of data, as shown in the sidebar (below right), which does not even list all of our material. AERA's data set is now one of the most detailed, extensive, and comprehensive from an ancient settlement site in Egypt—an archaeological exemplar of “big data,” or “deep data,” that itself must now be “excavated” to get the fullest, most accurate understanding of life 4,500 years ago in the settlements we have excavated.

But digging into the data and making full use of it has been a challenge. Over the course of 25 years our excavation and recording methods have evolved and changed. Errors, such as incorrect feature numbers, have crept in. Excavation data have not always been recorded consistently. Not all excavation records have been scanned and incorporated into our server and database, which make them accessible to team members worldwide. And much of the spatial data from areas excavated prior to 2005 is unavailable for instant query in our Geographic Information Systems (GIS) database. Moreover, the sheer volume and complexity of the data have rendered some of it impenetrable to all but the most dogged researchers, and even then they have not always succeeded in finding what they needed.

This will no longer be the case thanks to AERA Head Archivist Megan Lallier, Post-Excavation Manager Freya Sadarangani, GIS Director Rebekah Miracle, and Senior Archaeologist Dan Jones. This spring they completed the first phase of the Data Curation Project, a massive undertaking to resolve the enormous size, complexity, and variability of AERA's information into a uniform, searchable, query-able data set. When the Data Curation Project is finished the AERA Excavation Archive will meet the highest professional standards and allow us to interpret and understand our data more thoroughly than we ever have, as well as explore new research avenues. In the long term our excavation data will continue to be accessible and meaningful for future generations of scholars. Ultimately, the AERA Archive will remain our most significant legacy for future generations.



## AERA DATA

### 23 excavation seasons at Giza have generated:

Features	19,369
Burials	1,360
Drawings (maps)	6,724
Field notebooks	345
Photos	200,000+
Bags of all finds/samples	64,033
Bags of animal bone	8,292
Bags of ceramics	17,472
Bags of charcoal	5,737
Bags of lithics	6,556
Bags of objects	3,214
Bags of sealings	3,354
Flotation samples	6,088
Wet sieve samples	7,302
Mineral/pigment samples	540
Reports on database	1,403

### Field school excavations, Luxor:

Features	2,550
Photographs	6,650

### Field school excavations, Mit Rahina:

Features	700
Photographs	1,700

Rebekah Miracle



Freya Sadarangani



Megan Lallier



Dan Jones



Left and right: Data Curation Project team.



# BRINGING THE AERA ARCHIVES TO LIFE: AERA Educational Outreach

With a masters degree in Library & Information Science (Archives Concentration) from Simmons College, Boston, AERA Archivist Megan Lallier brings to AERA the concept that archives are not static, silent repositories, but rather well-springs for dynamic educational outreach. In March Megan launched the AERA Archive Outreach Program with a pilot session for 4<sup>th</sup> graders studying ancient Egypt at Dothan Brook Elementary School in Wilder, Vermont.

Megan brought maps, photographs, and excavation records from the AERA Boston Office Archive. The goal was not just to describe the lives of pyramid builders, but to show how we do archaeology and then challenge the students to think critically about our results, as we must do.

Megan laid out a large-scale map of the Gallery Complex at our Lost City site and asked the students: What did the pyramid builders do in these strange structures that look something like ancient bowling alleys? (We think they were barracks for troops and workers.)

Megan gave students “clues:” a photo of 40 workers lying comfortably in the long front hall of a gallery, followed by photos and drawings of artifacts and material we retrieved while excavating these structures: bread pots and ash, stone tools, casserole-like bowls, sealings from jars and bags, a sewing needle, and a hippopotamus bone.

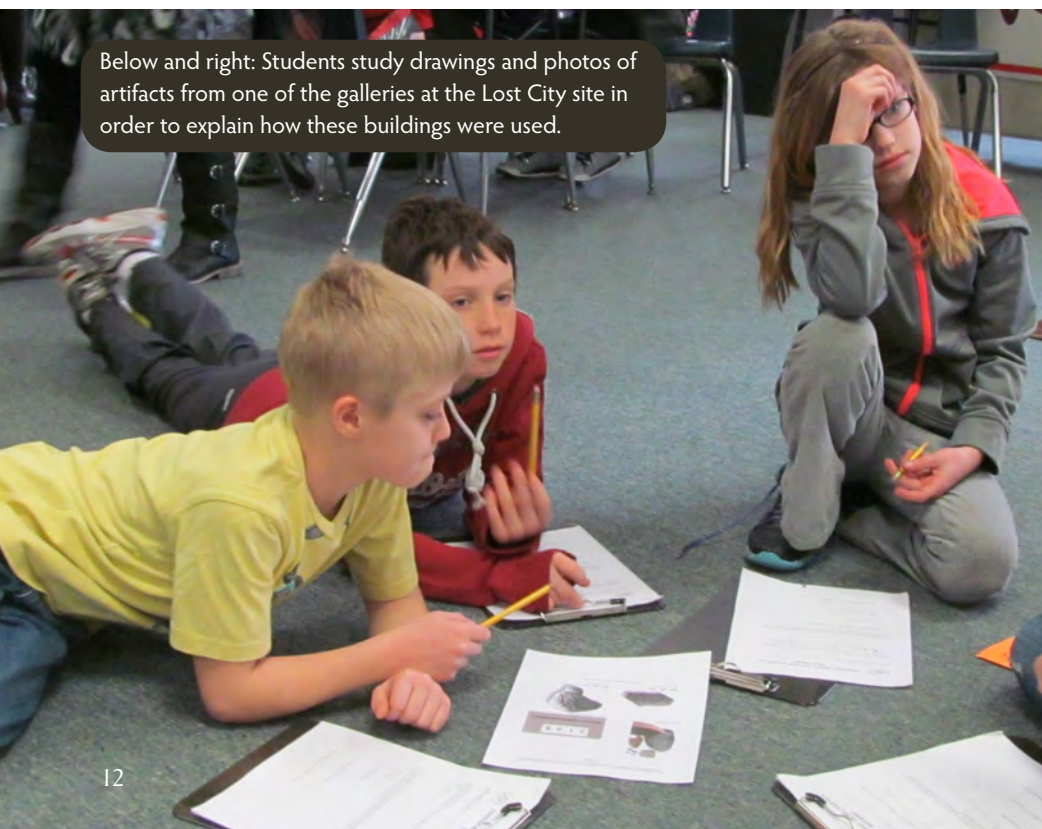
The students met in small groups to work out answers. What did people do in the galleries? Does everyone in the group agree? Can you come up with alternative ideas (hy-

AERA Archivist Megan Lallier listens to students propose ideas for how the galleries at the Lost City site were used.

potheses)? Did you change your minds with additional clues? While stated simply, these questions are our very thought processes as archaeologists.

We plan to continue AERA educational outreach as a regular, ongoing program aimed, not only at K-12, but also K-retirement.

Below and right: Students study drawings and photos of artifacts from one of the galleries at the Lost City site in order to explain how these buildings were used.





# BROADENING OUR REACH: AERA/AUC Archaeological Field Training

Not least of our achievements during the 2013 season: obtaining an agreement from the Egyptian Ministry of State for Antiquities (MSA) for permission to launch the new Archaeological Field Training (AFT) program in January 2015. In partnership with the American University in Cairo (AUC), we will offer the program to both Egyptian and non-Egyptian students. We had originally scheduled the AFT for January 2014, but to give more time to develop the program and to allow conditions in Egypt to settle, we plan now to launch in January 2015.

Mohsen Kamel, AERA Joint Field Director and Executive Director of the AERA-Egypt NGO, negotiated the agreement with the MSA, while Joint Field Director Ana Tavares worked out the agreement between AERA and AUC, with generous help from AERA legal counsel Douglas Rawles of Reed Smith LLP.

Our poster advertising the AFT program.

**GIZA, EGYPT  
ARCHAEOLOGICAL  
FIELD  
TRAINING**

January to March 2015

This eight-week, comprehensive package covers tuition for eight academic credits from The American University in Cairo, accommodations and on-site food, tool kit and supplies, medical insurance, local transportation, and field trips to archaeological sites. Instruction will be provided by Ancient Egypt Research Associates and the Egyptology program of the American University in Cairo.

**ACADEMIC PROGRAM and DETAILS**

- Designed for upper level undergraduate and graduate students from Egypt and abroad, with instruction by both Egyptian and foreign specialists and teachers.
- Work in research teams of five or six fellow students, with an instructor and material culture specialist. Excavate for six weeks, followed by one work week in the lab. Students will take weekly tests, write six weekly reports, attend lectures, and complete one final report for incorporation into Ancient Egypt Research Associates' Archives.
- Learn systematic excavation and recording techniques including drawing, survey, and photography.
- Survey diverse archaeological structures on the southern Giza Plateau, ranging from mudbrick to stone monuments.
- Retrieve and analyze material culture while placing it in the context of life in an ancient settlement, including ceramic, floral, faunal, and lithic evidence.
- Study the excavation of human remains with bio-archaeologists.
- Learn to use a computer database and spreadsheet applications to manage and analyze information.

**THE AMERICAN UNIVERSITY IN CAIRO**  
الجامعة الأمريكية بالقاهرة

**ANCIENT EGYPT RESEARCH ASSOCIATES**

Further information and application forms available March 2014.



Above: Justine Gesell (upper right) teaches MSA inspectors in the AERA-ARCE Field School.

AERA has formally trained students in archaeological methods since 2005. With support from USAID (through the American Research Center in Egypt), we have run nine field schools for inspectors in the MSA. The AFT will open our training program for the first time to foreigners. They will work side by side with Egyptian students in small teams taught by both foreign and Egyptian teachers, the latter among the best of our field school graduates.

The eight-week AFT program, designed for graduate students and upper level undergrads, will offer a comprehensive introduction to all aspects of field work at a settlement site: such as survey; systematic excavation; recording; mapping; photography; and retrieving and analyzing material culture.

The students will join AERA archaeologists in our ongoing excavations of the Silo Building Complex on the Giza Plateau (discussed on pages 6–7). Foreign students will receive college credit through AUC. Their tuition money, in turn, will largely support the AFT's field operations, as well as cover the costs for the Egyptian students, who train for free.

We are thrilled to be going forward with this new phase of our field school and believe it offers benefits beyond the excellent field training the students will receive. Partnering with AUC will broaden AERA's footprint and sustainability for the future. Integrating foreign students into the AFT will open young Egyptian archaeologists to the scholarship of their foreign counterparts. In addition, the cultural exchange inherent in the AFT will make a small contribution toward improving U.S.-Egyptian relations.



# AERA-EGYPT: Growing a Community of Archaeologists



Since buying a villa near the entrance to the pyramids in 2009, we have turned the property into the Mark Lehner Center, an efficient and comfortable base of operations, supporting our team both during field work and off season. This Study Season 2013 the Analysis and Publication Field School team worked at the center, drawing upon resources in the archives and library. Other team members, who worked in the AERA field lab, joined them at the center for meals and socializing. The computer server in the center's IT office makes AERA files available to team members 24/7 for research and writing year-round. In addition Egyptian colleagues and former AERA field school students often use the library throughout the year for their research.

As active as the AERA-Egypt center has become, we have greater plans for it. Our goal is to create a first rate archaeological facility and an international community of archaeologists. To realize this vision, we need to first expand the facilities.

In our fiscal year 2012–2013 we took an important first step toward this goal by engaging Ramses Nosschi of the Egyptian firm MADA Architects and architect Nicholas Warner to design our expansion. They first completed an architectural and photographic survey of existing structures and then developed a preliminary design, which they reviewed with Mark Lehner, Mohsen Kamel (Executive Director of our NGO AERA-Egypt) and AERA Board Member Richard Redding, who acted as point person for the building initiative.



Top: Conceptual drawing for the renovations and additions to the Mark Lehner Center, AERA's home base in Giza, Egypt, designed by Nicholas Warner and MADA Architects. Above: The center as it is now. This south-facing facade will change little with the proposed work.

Next Warner and Nosschi met with officials from the *Hayy el-Haram*, the government office that grants building permits, and then prepared a revised concept design, shown above.

Within the approximately 2,800 square meters of our plot, Warner and Nosschi conceived a new residential building, auditorium, refectory, and guest house/director suite. They designed with an eye toward the environmental sensibilities of the site, such as saving most of the existing trees, preserving the orientation—facing directly toward the Great Pyramid—



and maximizing cross-ventilation, shade, and natural light.

At the same time, their design accommodates modern living and working requirements. The four-floor dormitory building, with screened and shaded roof, will house 34 people. The auditorium will seat 100 people.

This design makes maximum use of the existing structure and keeps the built footprint to a minimum. It employs a variety of strategies to optimize environmental performance, including photo-voltaic panels on the roof of the main buildings to provide a “green” source of energy. The design includes a standby generator to serve as a backup during power outages and a system for gray water recycling.

We look forward to developing this efficient complex that will allow us to house all team members on site during our field seasons, provide ample working space, hold lectures and host conferences, as well as to open our doors to the wider community of archaeologists in Egypt.

Right: Over the past two years we rebuilt the crumbling fountain that was on the property when we bought it. The rebuilt fountain features four spouting frogs and Tawaret, goddess of childbirth, standing at the back wall, which shows in relief a fishing scene based on an Old Kingdom tomb relief. We named the fountain in honor of the late George Link, longtime AERA board member and legal counsel. Below: The Analysis and Publication Field School team discusses plans for their work in the library at the Mark Leher Center.

## An Ancient Real Estate Transaction

Our purchase of the AERA-Egypt property in 2009 followed a long tradition of real estate transactions near the Giza Pyramids. Uvo Hölscher discovered the oldest recorded property sale at Giza, dated to around 2450 BC, during his 1909 excavations in front of the Khafre Valley Temple, described in his *Das Grabdenkmal des Königs Chephren* (1912). A legal text etched in stone documented the sale of a house by a scribe named Tjenti to another man who paid in cloth and a wooden bed equaling ten units of copper. A butcher, bricklayer, two assistant directors of phyles (service crews), a stone worker, and three funerary priests witnessed the transaction, which was then sealed in the land registry in the “court of magistrates of the Pyramid, Horizon of Khufu.” These men must have lived in the pyramid town of Khufu. The legal notice—the stone etching—may have been posted at the front of the Khafre Valley Temple; the pyramid temples served as courthouse and notary.

Some 4,500 years later we, like the man who bought from Tjenti, recorded our transaction for the AERA-Egypt property in an official land registry, albeit now civil rather than temple-based. As our whole purpose is uncovering the deep past, we feel in our property transaction a strong sense of continuity with the ancient people who lived in this very district, in the pyramid towns just around the corner of the Giza Plateau.



## Thanks to Our Benefactors

We are grateful to generous donors whose major gifts made it possible for us to establish the Mark Leher Center: the Waitt Family Foundation, the Ann and Robert H. Lurie Foundation, the David H. Koch Foundation, Charles and Lisa Simonyi, Peter Norton and the Isambard Kingdom Brunel Society, Dr. Marjorie Fisher, and the Urban Land Institute members on behalf of Bruce Ludwig.



# SHARING O



## Scholarly Publications

### YUKINORI KAWAE

(with Ichiroh Kanaya, Yoshihiro Yasumuro, Sayaka Shigetomi, Akio Yoshikawa, Hiroshige Dan, Masahiko Fuyuki, and Hiroyuki Kamei. "Volume Computation of the Monument of Queen Khentkawes." *Virtual Systems and Multimedia (VSM)*, 2012 18th International Conference, pp. 585-590. Institute of Electrical and Electronics Engineers, 2012.

### ANNA WODZIŃSKA

2013. "Domestic and Votive Pottery from Giza. A View from Heit el-Ghurab Settlement and Khentkawes Town." *Functional Aspects of Egyptian Ceramics in Their Archaeological Context, Proceedings of a Conference Held at the McDonald Institute for Archaeological Research, Cambridge, July 24th – July 25th, 2009*, eds. Bettina Bader and Mary F. Ownby. Leuven: Peeters, pp. 165-184.

## Lectures and Conference Presentations

(See also the symposia talks listed in the box on facing page)

### AFIFI ROHIM AFIFI and GLEN DASH

"An Excavation and Geophysical Survey in the Valley of the Kings." Current Research in Egyptology XIV Conference. Cambridge, England. March 21, 2013.

### YUKINORI KAWAE

(with Ichiroh Kanaya, Kosuke Sato, and Hiroyuki Kamei). "Digitizing Egyptian Heritage." The First International Conference Virtual Archaeology. The State Hermitage Museum, St. Petersburg, Russia, June 5, 2012.

(with Ichiroh Kanaya and Hiroyuki Kamei). "Archaeological Survey of the Tomb of Khentkawes." Japan Foundation Information Center Event. JFIC Hall, Tokyo, Japan, June 15, 2012.

"Pyramid Quest." TEDxKyoto. Kyoto University, Japan, September 16, 2012.

### MARK LEHNER

"The Ancient Egyptians Living at Giza, 25 Years of Archaeology." Digging For The Truth: Association for Research and Enlightenment. Virginia Beach, VA, October 6, 2012.

"Finding the Lost City of the Pyramids." Flintridge Preparatory School, La Canada, CA, October 11, 2012.

"Rocking the Pyramids: Stones of the Giza Buildings." Carl Sandburg Elementary School, Kirkland, WA, October 15, 2012.

"The Lost City Of The Pyramids: An Adventure Of Discovery." Ancient Egypt Distinguished Speakers Lecture Series. Pacific Science Center, Seattle, WA, October 16, 2012.

"Hieroglyphs, Buildings, Life and Religion." Lakeside School, Seattle, WA, October 17, 2012.

"Discovering Ancient Egypt with Modern Archaeology in a Changing World." Pacific Science Center's 50th Year. Pacific Science Center, Seattle, WA, October 18, 2012.

"Who Built the Pyramids? The Discovery and Excavation of the Workmen's Village on the Giza Plateau." Institute of Egyptian Art and Archaeology, University of Memphis. Memphis, TN, February 7, 2013.

"Niuserre and 5th Dynasty Renewals at Giza: Legitimizing?" 7. Tagung zur Königsideologie: Royal versus Divine Authority. Acquisition, Legitimization and Renewal of Power. Charles University, Prague, June 27, 2013.

### CLAIRE MALLESON

"Archaeobotany: The Study of Ancient Plant Remains." Ministry of Antiquities, Giza, February 18, 2013; Ministry of Antiquities, Saqqara, March 4, 2013; and American University in Cairo, February 25, 2013.

### JOHN NOLAN

"What Does An Egyptologist Do?" Boston Museum of Science. Boston, MA, July 11, 2012.

"AERA: Cutting-Edge Archaeology Exploring Ancient Lives." Lost Egypt Exhibit opening. Great Lakes Science Center, Cleveland, OH, January 26, 2013.

### RICHARD REDDING

"Meat for the Builders: The Animal Production System That Supported Pyramid Construction at Giza." Society for American Archaeology Annual Meeting. Honolulu Convention Center, HI, April 4, 2013.

"The Evolution of Human Subsistence Behavior." Our Food Supply: A Complicated Story (Lecture Series). The Osher Lifelong Learning Institute of the University of Michigan. Clarion Hotel, Ann Arbor, MI, April 11, 2013.

### ANA TAVARES

"The Pyramid Complex of Queen Khentkawes: Recent Excavations at Giza." Tra Cielo e Terra. Presso Hotel Roseo, Bagno di Romagna, Italy, June 29, 2012.

"The Luxor Town Mound. AERA-ARCE Salvage Archaeological Field School (SAFS 2) 2010." Pagans, Christians, and Muslims: Egypt in the First Millennium AD Conference. Workshop, British Museum, London, July 11, 2012.



# OUR WORK

“AERA-ARCE Archaeological Field Schools: Beginners and Advanced at Giza and Memphis,” and “AERA-ARCE Archaeological Field Schools: Salvage and Publication at Luxor and Giza.” Archaeology of Ancient Egypt course. Institute of Archaeology, University College London, January 24, 2013.

“The White Walls –The Landscape of the Capital Zone.” The Nile. A Natural Landscape and Cultural Landscape. Johannes Gutenberg Universität, Mainz, Germany, February 22, 2013.

“Workmen, Scribes and Priests: Two Pyramid Towns at Giza, Egypt.” Graduates’ Seminar, Lucy Cavendish College, Cambridge University, May 1, 2013.

“The Town and Valley Complex of Queen Khentkawes at Giza: Recent Excavations of Ancient Egypt Research Associates.” Complutense University, Madrid, Spain, May 10, 2013.



Above: Nagwan Bahaa el-Hadedi presents a paper on the AERA-ARCE Mit Rahina Field School at the annual meetings of the American Research Center in Egypt.

Facing page: Claire Malleson discusses her archaeobotanical work at Tell el-Retaba at the Bioarchaeology of Egypt Conference.

## Symposia Presentations

### BIOARCHAEOLOGY OF ANCIENT EGYPT

Flamenco (Golden Tulip) Hotel, Zamalek, Cairo, Egypt, January 31–February 2, 2013.

#### ZEINAB HASHESH

“Seasonality of Death at the Heit el Ghorab Cemetery, Giza.” January 31, 2013.

#### RASHA NASR ABD EL-MAGEED

“The Faunal Remains from the AA Bakery with a Comparison to Other Areas of the Heit el-Ghurab, Giza, Egypt.” February 2, 2013.

#### RICHARD REDDING and CLAIRE MALLESON

“Modeling Old Kingdom Food Production: What is the Limiting Factor?” February 1, 2013.

Field schools graduates Afaf Wahba and Ahmed Gabr also participated in the conference. Afaf presented her work on the cemetery associated with a small pyramid of the Teti complex. Ahmed Gabr described four burials in a

tomb from the Southern Cemetery at Abydos. Field School instructor Scott D. Haddow presented a paper on the dental morphology of Roman burials at the Dakhleh Oasis. AERA Director of Archaeological Science Claire Malleson spoke about her archaeobotanical work at Tell el-Retaba in addition to the paper she co-authored with Richard Redding.

### AMERICAN RESEARCH CENTER IN EGYPT ANNUAL MEETING

Hilton Netherland Plaza Hotel, Cincinnati, OH

#### RABEE EISSA MOHAMED

“The Silo Building Complex—A 5<sup>th</sup> Dynasty Site in Giza.” April 19, 2013.

#### NAGWAN BAHAA EL-HADEDI

“Middle Kingdom Objects in Context: Teaching at the AERA-ARCE Mit Rahina Field School.” April 21, 2013.

#### MOHSEN KAMEL

“Coming Full Circle: The AERA-ARCE Archaeological Field Schools.” April 21, 2013.



Richard Redding discusses faunal analysis for a group of inspectors at the Giza Inspectorate of the Ministry of State for Antiquities.



# THANK YOU TO OUR CONTRIBUTORS

AERA has been able to achieve all that we have described here in our annual report because of the generous contributions of our benefactors and members. Each and every tax-deductible donation supports AERA's archaeological excavations, the publication of our findings, and educational programs aimed at advancing knowledge about our common human heritage. We are extremely grateful to the following foundations, businesses, and individuals who generously supported our work this fiscal year.

## LEADERS CIRCLE: \$100,000 and up

Ann Lurie  
David H. Koch Foundation  
Douglas Rawles and Reed Smith LLP<sup>1</sup>

## KHUFU SOCIETY: \$10,000 to \$99,999

Mr. and Mrs. Lee M. Bass  
Dash Family Foundation  
Ed and Kathy Fries<sup>2</sup>  
Louis R. and Candice A. Hughes Charitable Foundation

## KHAFRE SOCIETY: \$5,000 to \$9,999

Lois and Michael Craig  
Marjorie M. Fisher Fund  
Dr. Bonnie Sampsell  
Ann Thompson

## MENKAURE SOCIETY: \$1,000 to \$4,999

Raymond and Mary Arce  
Association For Research And Enlightenment, Inc.  
Bill and Melinda Gates Foundation  
Richard S. Harwood  
McPheeters & Associates  
Myhrvold Family Trust  
Jeff and Tricia Raikes  
Significance Foundation – The Brian and Alice Hyman Foundation  
Craig and Nancy Smith

## SUPPORTING MEMBERSHIP: \$250 to \$999

Henry Becton, Jr.  
Leslie & Charles Thomas Cayce  
Susan Davy  
W. Benson Harer  
Bob & Barbara Hensinger  
Charles Keeling  
Don Kunz  
Norrene Leary  
Daniel Lehner  
Betsy Link  
Rufus Mosely  
Frederic Rheinstein  
Charles Rigano

## BASIC MEMBERSHIP

Roger Atkinson  
Sergio Barassi  
Carlos Borrigo  
Herbert Boudreau  
Thomas Breitzkreuz  
Edward Brovanski  
George R. Bunn Jr., Esq.  
Laura Cani Degli Esposti  
Ann Clapp  
Helen Cort  
Doug & Mary Davy  
Kenneth Dray  
Delores Eckrich  
Anne Charlotte Harvey  
Eslam Hassan  
Danny Hillis  
Ann Jaffin  
Norma Kershaw  
Santos Laserna  
Lora Lehner  
Jill Carlotta Maher  
Anita McHough  
Naomi Miller  
Gerri O'Brien  
Barbara Russo  
Judith Salkovitz  
Kim Sanders  
Ric Segura-Cuzner  
Ralph Trujillo  
Sugihiko Uchida  
Sara Waldheim  
Anna White  
Robin Young

## BUILDING FUND

Norma Kershaw  
Dr. Bonnie Sampsell  
Charles Thomas Cayce

1. AERA thanks Douglas Rawles of Reed Smith LLP for providing advice and counsel on a myriad of legal matters.
2. AERA thanks Kathy Fries for invaluable help with development.



# THE AERA TEAM 2012–2013

## PRESIDENT

Dr. Mark Lehner

## BOARD MEMBERS

Glen Dash, *Secretary*  
Dr. John Nolan, *Treasurer*  
Matthew McCauley  
Dr. James Allen  
Ed Fries  
Louis Hughes  
Jon Jerde  
Bruce Ludwig  
Ann Lurie  
Dr. Richard Redding

## SENIOR STAFF

Dr. John Nolan, *Chief Financial Officer, Associate Director, Egyptologist, Sealings Specialist, Boston Office Manager*  
Dr. Richard Redding, *Chief Research Officer, Archaeozoologist*  
Mohsen Kamel, *Co-Field Director*  
Ana Tavares, *Co-Field Director*  
Dr. Wilma Wetterstrom, *Art and Science Editor, Publications*

## PUBLICATIONS

Dr. Mark Lehner, *Executive Editor*  
Alexandra Witsell, *Managing Editor, Sealings Assistant*  
Dr. Wilma Wetterstrom, *Art and Science Editor*

## BOSTON OFFICE

Jim Schnare, *Communications Associate*

## BOSTON ARCHIVES

Megan Lallier, *AERA Archivist*  
Kate Cotti, *Volunteer*  
Melanie DeSantis, *Volunteer*  
Emily Lapworth, *Volunteer*

## ARCHAEOLOGICAL SCIENCE TEAM

**Archaeobotanist**  
Dr. Claire Malleson, *Director of Archaeological Science*

## Archaeozoologist

Dr. Richard Redding

## Clay Sealings Team

Dr. John Nolan, *Team Leader*  
Alexandra Witsell  
Hilary McDonald, *Photographer*

## Objects Team

Ana Tavares, *Team Leader*  
Emmy Malak, *Objects Registrar*  
Nagwan Bahaa el-Hadedi (MSA)  
Ahmed Ezz (MSA)

## Lab Support Team

Ahmed Ezz (MSA)  
Mohammed Hassan

## GIS TEAM

Rebekah Miracle

## POST-EXCAVATION MANAGER

Freya Sadarangani

## GIZA ARCHIVES

Rana Morgan, *Assistant Archivist*

## CAIRO PROJECT MANAGER

Amir Abdel Hamid

## GIZA IT MANAGER

Mohamed Said

## CAIRO BUSINESS MANAGER

Yasser Ibrahim

## DATA CURATION PROJECT

Daniel Jones  
Rebekah Miracle  
Freya Sadarangani  
Megan Lallier

## ANALYSIS AND PUBLICATION FIELD SCHOOL

Mohsen Kamel & Ana Tavares  
*Co-Field School Directors*

## Editors

Freya Sadarangani  
Alexandra Witsell

## Excavation Supervisors

Ashraf Abd el-Aziz (MSA)  
Rabee Eissa (MSA)  
Hanan Mahmud (MSA)  
James Taylor

## GIS Specialist

Rebekah Miracle

## Illustrator

Hassan Ramadan Mahmoud (MSA)

## Ceramics Team

Dr. Teodozja Rzeuska  
Mahmoud el-Shafey (MSA)  
Mohamed Naguib (MSA)  
Sherif Abd el-Monaem (MSA)

## Archaeobotanists

Dr. Mary Anne Murray  
Rebab el-Gendy (MSA)

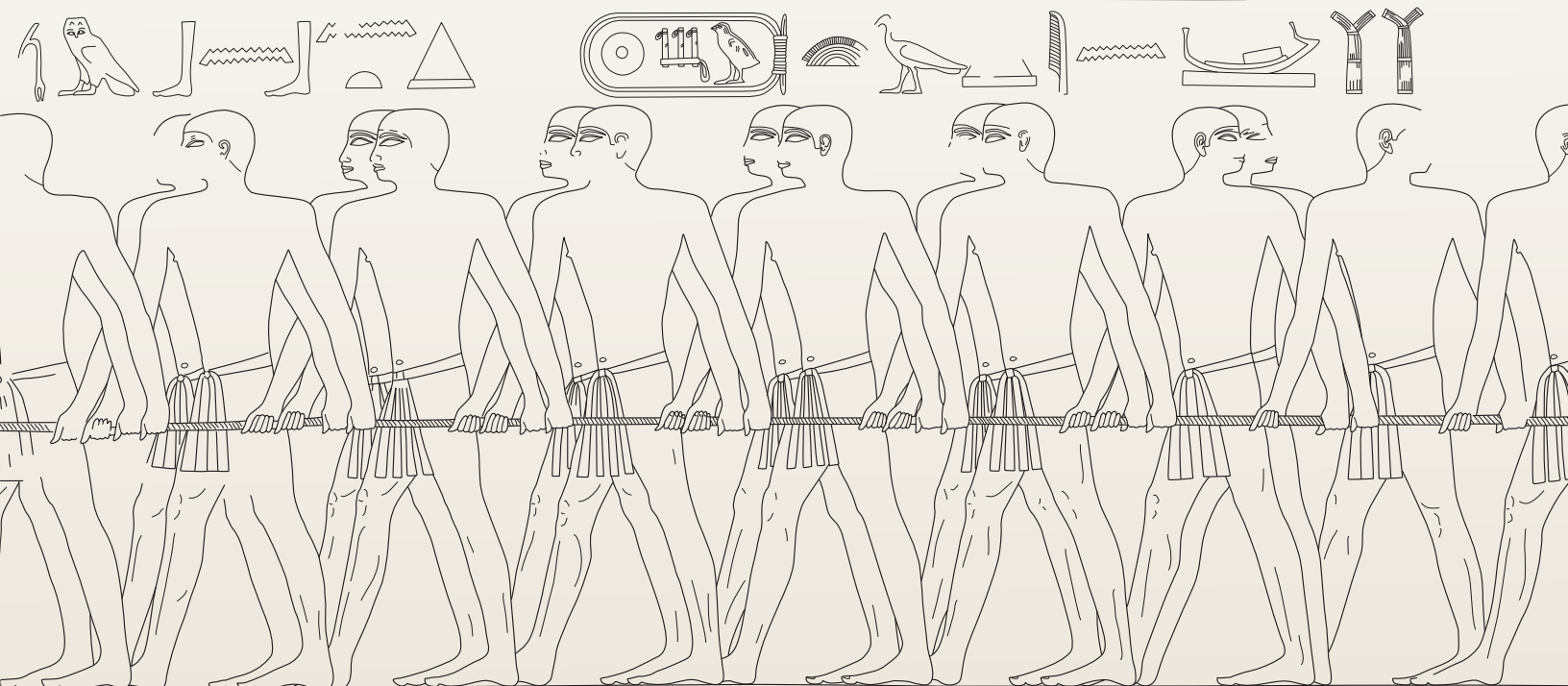
## Archaeozoologists

Dr. Richard Redding  
Rasha Nasr Abd el-Mageed (MSA)

## Osteoarchaeologists

Scott D. Haddow  
Afaf Wahba (MSA)

MSA is the Egyptian Ministry of State for Antiquities.



Detail from a scene in the pyramid causeway of Sahure at Abusir. Two rows of men, pulling together, drag the pyramidion (not shown) for Sahure's pyramid. (After a drawing by J. Malátková in *Abusir XVI, Sahure -The Pyramid Causeway: History and Decoration in the Old Kingdom*, T. El Awady, Charles University in Prague, Prague, 2009, plate 11.)





**Ancient Egypt Research Associates, Inc.**

**26 Lincoln Street, Suite 5**

**Boston, MA 02135-2608 USA**

**E-mail: [cadilks@aeraweb.org](mailto:cadilks@aeraweb.org)**

**Website: <http://www.aeraweb.org>**

**Phone: 617-783-0737**

## **Help support AERA's work**

Private donations provide funding for much of AERA's work, including excavation, analysis, publication, conservation, outreach and education, and rescue archaeology. Our AERA-Egypt Center in Giza—also supported by contributors—provides a home base for our field work and for a community of archaeologists. Our field school program for inspectors in the Egyptian Ministry of State for Antiquities promotes cultural exchange while providing valuable training in archaeological methods. During these unsettled times in Egypt, this educational and cultural exchange serves an especially important role.

**Please contribute online at <http://www.aeraweb.org/support/>.**

Or send donations to the address above. All donations are welcome. Donors who contribute at the level of basic member (\$55) or senior/student member (\$30), or more, receive our *AERAGRAM* newsletter twice a year, the AERA Annual Report, and dispatches from the field about our ongoing work.



The AERA Field Lab in the Western Cemetery on the Giza Plateau. Here, during study and field seasons, AERA specialists analyze their materials: ceramics, stone tools, animal bone, plant remains, clay sealings, objects, drill core samples, charcoal, pigments, etc. The Khafre pyramid looms in the background and the Menkaure pyramid stands in the distance. The mound just behind the lab is the mastaba of Hemiunu, architect of Khufu's pyramid. View to the south.





# JOIN AERA TODAY

## Be Part of our Global Past, Present, and Future

Your membership directly supports the main pillars of our mission at [Ancient Egypt Research Associates](#): archaeological excavation, analysis, publication, and educational outreach.

Donors who contribute at the level of basic member (\$55) or senior/student member (\$30) receive our AERAGRAM newsletter twice a year and the AERA Annual Report hot off the presses, months before we post these publications to our website. Donors also receive invitations to special events and regional lectures, as well as firsthand updates on research from the field.

By contributing to AERA, you'll receive the benefit of knowing that you've made a valuable investment in us all, helping to broaden our knowledge of the past, make an impact in the education of our students, and strengthen the future of our global community.

Please join or contribute online at: <http://www.aeraweb.org/support>. Or send your check to the address below. AERA is a 501(c)(3) tax exempt, nonprofit organization. Your membership or donation is tax deductible.

### MEMBERSHIPS:

Basic: \$55    Student/Senior: \$30    Non-US: \$65  
Egyptian National: LE100    Supporting \$250

Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_ Zip \_\_\_\_\_ Country \_\_\_\_\_

Phone \_\_\_\_\_

Email address \_\_\_\_\_

Please make check payable to AERA.

Or charge your membership to a credit card:

Name on card \_\_\_\_\_

Card number \_\_\_\_\_

Verification Security number (on back) \_\_\_\_\_

Expiration date \_\_\_\_\_

Signature \_\_\_\_\_

Please send application with payment to AERA at:  
26 Lincoln Street, Suite 5, Boston MA, 02135 USA

