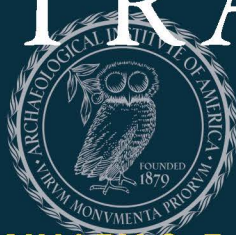## ARCHAEOLOGICAL INSTITUTE *of* AMERICA

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115TH ANNUAL MEETING
ABSTRACTS

JANUARY 2–5 2014
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SESSION 1A: Gold Medal Colloquium
Between Greek Prehistory and History

ORGANIZER: *Carl Knappett*, University of Toronto

Colloquium Overview Statement

The subfields of classical archaeology and Aegean prehistory continue to operate largely in parallel, despite calls for greater cross-pollination. Yet a rare band of scholars have long worked across this gap, without great fuss, conducting fieldwork and publishing diligently on both the second and first millennia. Here we honor one such scholar, Hugh Sackett, whose work over many decades at Knossos, Lefkandi, and Palaikastro exemplifies this commitment to unearthing and understanding the Greek past, whether we label it prehistoric or historic. Furthermore, Sackett has acted as teacher, mentor, and collaborator to many, both in the classroom and the field. The participants in this colloquium have all benefited from his expertise and generosity, through one or all of these roles. Each of the presentations addresses the honorand's deep concern with long-term history that transcends our own disciplinary divisions. After an introduction on this theme, the first paper underlines the importance of methodology in this process, notably the craft of archaeological sections. There follows a retrospective of Sackett's work at Lefkandi, the emblematic site in the Aegean for thinking about the Bronze Age–Iron Age transition. The next paper presents us with a review of the Palaikastro kouros 25 years after its discovery. Next, the focus remains on Palaikastro, with a discussion of the long-term history of its houses, many of which Sackett had a hand in bringing to light, and their potentially unique social role in what may be a palaceless community. Our trio of papers on this site is completed with a paper that sheds light on the historical period at Palaikastro and its sanctuary to Diktaian Zeus. Finally, we learn of recent research on the Little Palace North excavations at Knossos, reflecting on Sackett's work at the neighboring Unexplored Mansion. Together, these papers show substantively the importance of Sackett's work in opening up our horizons so that they stretch across the Bronze Age and classical worlds—indeed a fundamental mission of the AIA.

Introduction: Hugh Sackett. Field Archaeologist, Teacher, Gold Medalist
Gerald Cadogan, British School at Athens

This is an introductory, and personal, review of the achievements of Hugh Sackett, Gold Medalist of the AIA. As a collegiate field archaeologist, he has been a pioneer of the diachronic approach to life in the ancient Aegean, by combining multiperiod regional survey with excavation of particular sites: the Euboea Survey led to Lefkandi, the survey of the Dema Wall in Attica to the Dema House, with its important evidence for the mood of Athens following the Peace of Nicias. As an excavator Sackett is a master of the art: meticulous, and decisive in drawing the lines that separate periods—a difficult task always—and form the fundamental secure evidence for archaeological interpretations. His excavations range from Minoan Crete (Palaikastro) through prehistoric and Early Iron Age Euboea

(Lefkandi) to classical Attica (the Dema House and the house at Vari) and back to Roman Crete (Knossos). It is an extraordinary list of contributions.

Besides these achievements, Sackett is, I believe, the only person in all the United States to teach prehistoric Aegean and classical archaeology at a secondary level, showing many generations of the young what an exciting discipline we have and thus influencing, and even changing, their lives. As a brilliant teacher, he has produced both professional Aegean archaeologists and many supporters of archaeology in Greece, and the American School of Classical Studies at Athens. This could not be more valuable for our discipline and, of course, fits completely into the ideals of the AIA.

Thinking Vertically: The Role of Archaeological Sections in Prehistoric- and Historic-Period Site Publications from the Aegean
Eleni Hatzaki, University of Cincinnati

Archaeological sections have been one of the cornerstones of Hugh Sackett's academic interests, a legacy disseminated through a long series of marvelously detailed section plans published in site reports for excavations sponsored by the British School at Athens (BSA) at Knossos and Palaikastro on Crete and at Lefkandi in Euboea. While the recording/publication of archaeological sections in the Aegean is nowadays—it is hoped—standard, this may not have always been the case. In this paper, I review site reports from prehistoric and historic sites in the Aegean from the late 19th century onwards with the aim of addressing the following questions: When did archaeological sections first appear in site publications, what was their purpose, and what was their impact on contemporary and later scholarship? Has the use and frequency of archaeological sections changed over time? Has the recording of archaeological sections been favored by prehistoric rather than historic sites, and if so, why? In the case of modern Greece, the practice of recording/publishing archaeological sections relates to the changing recovery protocols and recording systems adopted by Greek and foreign institutions operating since the 19th century. I argue that Sackett's work on this subject is, however, part of a long BSA tradition, its origins traced to Arthur Evans' landmark excavations and Duncan Mackenzie's meticulous fieldwork recording at Knossos.

Art and Crafts from Lefkandi: A Tribute to Hugh Sackett
Irene S. Lemos, University of Oxford

The site of Lefkandi in Euboea was first spotted by Hugh Sackett and his team when they surveyed the island in the 1960s. Later, Sackett, together with Mervyn Popham, excavated first the settlement on Xeropolis and later the cemeteries. Since 2003 more excavations were undertaken on Xeropolis under my directorship. There is no doubt that discoveries and publications of the excavations of the site have changed our perspective on one of the less-understood periods of ancient Greece. The character of the site has been the focus of much scholarly debate, with the discoveries of the Toumba building and the cemeteries attracting most of the attention of the academic community. It may be argued that among the finds from

Lefkandi, it is frequently the imported goods found mostly at Toumba that have attracted the attention of the scholars and the public in various exhibitions around the world. In this paper, however, I aim to explore the output of the local craftsmen during a period from 1200 to ca. 700 B.C.E., a period when much social and cultural change took place in the Aegean. In doing so, I show that part of the success of the site enjoyed in the transitional period from the end of the Palatial period to the emergence of the new social order depended on the achievements and the success of the Euboean craftsmen (architects, potters, and metalworkers).

Building techniques and landscaping from the 12th century onwards are presented to show that the monumental building at Toumba was the end result of a long tradition in architectural developments. The skill of the local potter is also traced from the production—in the middle of the 12th century—of the innovative pictorial style to the production of very distinctive Euboean Late Geometric ceramics in the eighth century. Some new finds highlight that the centaur from Lefkandi was not the exception in local coroplastic production. Finally, recent studies of the manufacture of metalwork in Lefkandi are presented, illustrating that most of the metal finds from the cemeteries were indeed locally produced by Euboean craftsmen.

The God of Palaikastro

J. Alexander MacGillivray, Independent Scholar

The Palaikastro kouros, the chryselephantine Minoan effigy of a young male striding forth with arms bent and fists clenched Osiris-style at his breast, was the first hard evidence for the existence of a Minoan male deity. Recovered in stages from 1987 to 1990, he was likened first to the male "votaries" from the nearby Mount Petsophas because images of Minoan gods were deemed scarce in the time of Arthur Evans' monotheistic "Mother Goddess" cult. But the sumptuous materials and fine craftsmanship led us to propose that he represented the Minoan forerunner of the Diktaian, or Cretan-born, Zeus listed in the Knossos Linear B tablets and invoked in the Hellenistic Hymn to the Kouros found less than 100 m away. Recent studies dismiss any suggestion of cult continuity from the Bronze Age and discredit modern notions of Cretan-born Zeus. Others suggest that the figure represents Poseidon Hippios, a hunter god, or the personification of the sun god. Here, I look at the various labels assigned to the effigy and consider how it has forced us to review our notions of Minoan religion, especially during Crete's reconstruction period following the Thera eruption.

Living in a Palaceless Place? Understanding the Palaikastro Community

Jan Driessen, Université Catholique de Louvain

The site of Roussolakkos remains to this day one of the most extensively explored Minoan urban settlements and, in contrast to most contemporary sites, has not (yet) yielded a court-centered building or palace. Whereas the possibility that such a building existed at one or more moments of its Bronze Age existence cannot be excluded, the paper examines whether an analysis of local features may

reveal patterns indicating the existence of another form of social organization. Three kinds of features are examined. First are aspects of urban layout, such as the arrangement of town blocks, access systems, and architectural details concerning construction technique, plan, and elevation. The second category is economic, ranging across craft production, particularly pottery and textiles, and agricultural production (e.g., wine presses). Third, administrative evidence is also considered, in terms of both sealing practices and literacy. These lines of evidence are then compared and contrasted with those present in palatial centers to show that idiosyncratic cultural features such as the Palaikastro Hall may correspond to a societal structure that was less hierarchical and more heterarchical than that usually reconstructed for palatial settlements.

Sacred Offerings: Early Greek Bronzes from the Sanctuary to Diktaian Zeus at Palaikastro

Seán Hemingway, Metropolitan Museum of Art, New York

Among the most important finds from the sanctuary of Diktaian Zeus at Palaikastro in eastern Crete are the Geometric and Archaic-period Greek bronze objects from the early (1902–1906) excavations of the British School at Athens. The rediscovery of this famous cult place of the thunder god yielded limited evidence of various phases of the sanctuary's long history beginning with the Geometric votive bronzes. Although now mostly quite fragmentary, originally the bronzes would have been displayed within the sanctuary or kept in a treasury. They were subsequently buried, perhaps to make room for new votive dedications since the sanctuary remained in use for more than 1,000 years. The Palaikastro bronzes received preliminary publication, and particular classes of objects—notably the shields and tripod fragments—have been included in individual studies. The material, however, has never before been treated as a corpus and considered in light of its archaeological context. Here, I argue that such consideration is essential to understand properly the nature of cult practice at the sanctuary and the status of the Eteocretans as well as the extent of wealth in the region during the Geometric and Archaic periods.

The Palaikastro bronzes are comparable to material from other early Greek sanctuaries on Crete such as at Dreros, Gortyn, the Idaean Cave, and Praisos, as well as votive assemblages of bronzes from major Panhellenic sanctuaries such as Olympia and Delphi. There are fragmentary remains of some 80 bronze objects. The earliest bronze is a leg from a rod tripod stand, a type with a long history on Crete, and there are fragments from at least a dozen tripod cauldrons, a variety of other vessels, and miniature armor. The full-scale, relief-decorated shields are an especially important class of bronze objects that compare well with other major examples from Crete; they would have been appropriate dedications to Zeus in memory of the Kouretes, who according to myth watched over Zeus as a baby in the Diktaian Cave. Another intriguing object is a sphyrelaton torso of a male belted youth from a small statue comparable to the sphyrelaton statue of Apollo from Dreros. The Palaikastro bronzes are one of the most important groups of early Greek votive material from the heartland of the Eteocretans, and they are a significant indicator of the wealth of the Diktaian sanctuary, especially in its earliest periods.

Unexplored Mansion Redux: North of the Little Palace from the Early Iron Age to the Fall of Rome

Mieke Prent, VU Amsterdam, *S.E. MacVeagh Thorne*, Independent Scholar, *P.J. Callaghan*, Independent Scholar, and *D.E. Evely*, Independent Scholar

From 1905 to 1910, Arthur Evans excavated the Little Palace just east of the then tennis courts at the Villa Ariadne. In adding greatly to our understanding of the early history of Knossos, Evans eradicated much of what had come later. He did this by removing, after the fashion of the day, all overlying Greek and Roman remains without recording them. From 1967 to 1971, Hugh Sackett and Mervyn Popham, in their excavation of the adjacent "Unexplored Mansion," showed just how much had been lost. Sackett's brilliant and encyclopedic compilation of that complex excavation, *Knossos from Greek City to Roman Colony: Excavations at the Unexplored Mansion II* (Athens and London 1992), restored much of the Greek and Roman history of Knossos that had vanished in the early years of the century.

In a further attempt to rectify the damage done to both Later Minoan and historical Knossos, the British School at Athens returned for a brief campaign of excavations in the area in 2001 and 2002, under Eleni Hatzaki, then curator. This project began, Sackett style, with the cleaning and detailed study of the crumbling section that had been left by Evans to the north of the Little Palace, a section 4 m high x more than 20 m in length. The authors of this paper—two of them veterans of the earlier work by Popham and Sackett—undertook to examine the Early Iron Age and historical levels of the new excavation. This paper presents an overview of the results of the "Little Palace North" Project, adding some further definition to the history of what may not forever remain only "Post-Minoan" Knossos.

While the small area available for excavation perforce left many questions unanswered, the team was able to isolate some 45 stratified deposits stretching from the Sub-Minoan period to the fifth century C.E. Material of the 10th and ninth centuries B.C.E. was added to that noted at the northeastern section of the Unexplored Mansion, in this case associated with somewhat enigmatic clay-lined depressions or pan-like structures. Also complementing the results of the Unexplored Mansion excavations are extensive indications of metalworking from the seventh century B.C.E. and architectural remains of the Classical period, one of the more obscure at Knossos. The Hellenistic is well represented. Undisturbed Early Imperial remains are few, but evidence shows that Roman occupation was long-lived, with reconstruction and reuse of a substantial early third-century house continuing well into the fourth.

SESSION 1B: Joint AIA/APA Colloquium
The Battle of the Aegates Islands (241 B.C.E.)

ORGANIZERS: *William M. Murray*, University of South Florida, and *Jeffrey G. Royal*, RPM Nautical Foundation

Colloquium Overview Statement

On 10 March 241 B.C.E., the last naval battle of the First Punic War was fought off western Sicily. A large Roman fleet led by the proconsul C. Lutatius Catulus

engaged an equally large Carthaginian fleet led by Hanno. The day was blustery, the seas were rough, and the Carthaginian ships were heavily loaded with supplies. Polybius (1.60–62) tells us how the Romans won a decisive victory and forced the Carthaginians to sue for peace shortly thereafter. Now, almost 2,300 years later, the site of the battle has been found off Levanzo Island (in the modern Egadi Islands group), and its landscape is being carefully surveyed by RPM Nautical Foundation and Sicily's Soprintendenza del Mare. By the end of 2013, 11 warship rams, a number of helmets, and a wide scatter of transport amphoras had been located on the seafloor beneath the battle zone. For the first time ever, we can examine the debris from an ancient naval battle.

Since the site's characteristics are completely unique, the details of the finds and their contexts provide us with important evidence regarding the physical reality of ancient naval war. The papers of our colloquium focus, therefore, on the artifacts, their state of preservation, and their contexts. Following an introductory welcome to set the stage, the colloquium's first paper presents the history behind the battle zone's discovery and a description of the major finds. The second paper examines the rams as a reflection of the warships that originally carried them; it hypothesizes certain details of the ships' design and construction and considers how they related to the sinking process. The third attempts to classify these ships as smaller than *quinqueremes* or *quadriremes* ("fives" and "fours") and then explores the implications of this fact for the study of Polybius, whose account implies that both fleets relied mainly on "fives." The fourth paper considers the inscriptions preserved on some of the rams, which are extremely important for the study of Latin letterforms during the mid third century and for the office of the quaestorship, particularly as it relates to the fleet during the First Punic War. The fifth examines the implication of the helmets for the study of Roman and Carthaginian armor, and the sixth addresses the biological markers on and around the artifacts that give us clues about the process of deposition and subsequent site formation.

The Battle of the Aegates Islands: The Discovery of the Battle Zone and Major Finds
Sebastiano Tusa, Soprintendenza del Mare, Regione Siciliana

This paper briefly presents the story of my search for the Battle of the Aegates Islands. It begins with Cecè Paladino, a great spear fisherman and "the last of the Florios" (a famous dynasty of Sicilian entrepreneurs), who in the 1960s and 1970s, reported hundreds of lead anchor stocks on the seabed along the eastern part of Levanzo Island, in front of sheer cliffs. After hearing these reports from Paladino, I suspected that they belonged to the Roman fleet of C. Lutatius Catulus and gave important information about the location of the famous Battle of the Aegates Islands (241 B.C.E.). With this possibility in mind, I reread Polybius' account of the battle and concluded that the action made more sense if the Carthaginian fleet (which was loaded with supplies for their troops on Mount Erice) had set a course north of Levanzo Island toward Bonagia Bay, just north of Trapani (ancient Drepanum). In 2004, we found a further piece of evidence that helped refine the possibilities. In that year, we recovered a bronze rostrum from a local dentist, who had received it from trawler fishermen, who in turn had dragged it from the seafloor in their nets somewhere northwest of Levanzo. After further preliminary

investigations, I entered into a research partnership with RPM Nautical Foundation to survey the entire region around Levanzo Island. Our work began in 2005 and led to the discovery of a concentration of artifacts that must be associated with the famous sea battle. By the end of the 2012 season, we had located nine bronze rams plus many other artifacts related to the two battle fleets. The paper concludes with a brief catalogue of the most important finds located through the 2013 season of fieldwork.

Archaeological Evidence for Warship Design and Combat in the Third Century B.C.E.
Jeffrey G. Royal, RPM Nautical Foundation

After a number of successful field seasons, the battle zone for the naval clash between the Romans and Carthaginians in 241 B.C.E. is becoming increasingly defined. Remains from this naval battle site detail the events of a Roman fleet conducting a surprise attack on a Carthaginian fleet, defeating it, and bringing an end to the First Punic War in Rome's favor. This crucial naval engagement launched Rome on a path of Mediterranean conquest, and the remains of this battle provide unprecedented evidence for warship construction and fleet operations in the third century B.C.E. During the 2012-2013 field season, an additional three bronze warship rams were discovered, bringing the total to 11 from the battle landscape. These rams are consistent in size and configuration and indicate a consistent class of warship. Ram analysis also provides conclusive evidence for direct ship-to-ship attacks that resulted in the sinking of many warships. This paper examines the structural evidence provided by the rams' internal configurations for the nature of the warships that carried them. Additional information—external dents in the rams' fins, rams split in half, internal fasteners still intact inside the castings, growths on the rams themselves, corrosion patterns, and associated finds from the seafloor surrounding the rams (e.g., nails and spikes)—give additional evidence from which the circumstances of combat and subsequent sinking can be hypothesized.

The Ship Class of the Egadi 1–10 Rams and Polybius' Account of the First Punic War
William M. Murray, University of South Florida

In his account of the First Punic War, Polybius (1.63.4–9) describes the Roman and Carthaginian fleets as largely comprised of *pentēreis* or "fives". We should expect, therefore, that a sample of 10 similarly sized rams originating from the naval battle concluding this war (i.e., the Battle of the Aegates Islands in 241 B.C.E.) would likely come from fives. This seems not to be the case, however. Comparative evidence from other known rams suggests that the Egadi weapons located thus far come from ship classes smaller than "fours." Can Polybius be wrong? If we may judge from the evidence of the Egadi rams, his description of a Roman navy comprised largely of fives during the First Punic War certainly seems oversimplified and misleading. We should consider the possibility that both Roman and Carthaginian fleets of the mid third century B.C.E. contained a mix of classes more in line with what we observe in Roman fleets toward the end of the third

century and the beginning of the second. Such a conclusion accords with Steinby's assessment (*The Roman Republican Navy: from the Sixth Century to 167 B.C.* [Helsinki 2007] 75–77) that Polybius presents a flawed picture of the Roman navy during the First Punic War. Time will tell, but the Egadi rams may well call for a careful reassessment of Polybius' entire first book, his purpose for writing it, the limitations of his sources, and the use he makes of them.

Inscriptions and Institutions: The Evidence of the Ram Inscriptions
Jonathan R.W. Prag, Merton College, University of Oxford

Six of the rams so far recovered during the Egadi Islands project bear Latin inscriptions; a seventh carries a Punic text. The Latin inscriptions make reference to named Roman officials (quaestors in five instances; members of a board of six in one case) who approved the rams. The Punic inscription offers a prayer for good fortune to one or more Punic deities. The Latin inscriptions are diverse in both form and content. Latin inscriptions of the third century B.C.E. are relatively few, and inscriptions on metal are even less common. The inscriptions are therefore important from a purely epigraphic and paleographic perspective. The variety in their methods of production (engraved or cast) contributes to the historical evaluation of the relationship between the rams. The inscriptions provide some of the earliest evidence for both the quaestorship and the formal process of *probatio* (i.e., formal contracting on the part of the state) and as such are historically important for the study of the institutional development of the Roman state. This paper presents the inscriptions themselves, evaluates their form, and discusses their direct relevance to ongoing debates regarding the expansion and role of the quaestorship in naval and administrative organization of the expanding republican empire.

Preliminary Observations on the Military Equipment from the Battle of the Aegates Islands
Andrew L. Goldman, Gonzaga University

Among the more astonishing finds recovered during the maritime survey project off western Sicily is a series of bronze helmets and associated cheek pieces, military equipment likely in the possession of the Roman and Carthaginian combatants who fought in the Battle of the Aegates Islands in 241 B.C.E. The assemblage of galeae or *cassides* from this unique battlefield context presents a remarkable opportunity to explore the character of Roman armament during the mid third century B.C.E., a critical transitory period for the Roman manipular army. Archaeological data for that period is thin to the point of transparency, a circumstance that has necessitated a heavy dependence on literary sources for reconstructing the character of arms and armor during the middle republic. Only in the early second century B.C.E., when recovered weapon hoards become more common, does it become possible to trace developmental patterns in military equipment with more certainty. This is particularly true for helmets, which on the whole tend to be recovered from secondary votive or funerary contexts.

The Aegates Island assemblage provides contextualized material with which we can examine for the first time the evolutionary character of republican armor of

the third century B.C.E., particularly in regard to the adoption of the Montefortino type of helmet. Studies of scattered helmet distribution during the fourth century indicate that a mixture of regional and overlapping types, often the bowl-shaped "jockey" type, were in general use throughout western Europe. By the mid third century, however, the Montefortino type—an Italo-Celtic hybrid that can be traced back to the fifth century in France and Austria—had become the predominant "jockey"-type helmet in Italy, Spain, and Gaul. These general patterns have led scholars to argue that the Roman infantry of the third century adopted the Montefortino helmet as its primary type during the Punic Wars. The new assemblage has not only confirmed this hypothesis but has also supplied multiple examples with intact signature parts (e.g., top knobs, the detachable cheek pieces, and neck guards) with which we can begin to chart long-term evolutionary changes in republican design. As an added bonus, recovery in 2012 of a completely different type, conical in shape, may have provided us with a contemporary Carthaginian helmet, what could well be the first of its kind ever discovered.

The Egadi Islands Survey: A Partnership Between Marine Ecology and Underwater Archaeology

Derek Smith, University of Washington

Although collaborative efforts between archaeologists and ecologists are not common, these two seemingly disparate disciplines often strive to answer the same research questions. Archaeological and ecological methods used to quantify study sites are often complementary and have the potential to create a much more comprehensive and cohesive synthesis. At the Egadi Islands site, ecological data are being used to help determine how anthropogenic influences such as bottom trawling have shaped the distribution of artifacts as well as the extent of damage being done to artifacts by biocorrosion. Archaeological artifacts and data are being used to study long-term biological community trajectories, how the deposition of a cultural material record influences ecosystems, and how deep reefs in the Mediterranean may serve as refugia for species at risk in shallow habitats.

SESSION 1C: Workshop
Enhanced Protection: Should the United States Ratify the Second Protocol to the 1954 Hague Convention?

Sponsored by the AIA Cultural Heritage Policy and Professional Responsibility Committees

MODERATOR: *Laetitia La Follette*, University of Massachusetts, Amherst

Workshop Overview Statement

More than 50 years after signing the 1954 Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict, the U.S. Senate finally gave its consent to ratification of the treaty in 2008. While ratification was critical to the acknowledgment of the importance of heritage during military operations,

many countries have also taken the additional step of ratifying the Second Protocol, which came into force in 2004. Drafted in 1999 as a result of the Bosnian conflict, the Second Protocol sought to strengthen the 1954 Hague Convention with added provisions for "Enhanced Protection" of certain sites, clarification of the definitions of "military objective" and "military necessity," and the requirement for legal penalties for military personnel who violate the convention. This session will explore the question of whether the United States should ratify the Second Protocol or whether proper implementation of the main convention is enough to protect the world's archaeological heritage when the United States is involved in international armed conflicts.

PANELISTS: *Nancy Wilkie*, Carleton College, *Dick Jackson*, Department of the Army, *Corine Wegener*, Smithsonian Institution, and *Patty Gerstenblith*, DePaul University College of Law

SESSION 1D: Colloquium
The Art of Empire in Achaemenid Persia

ORGANIZERS: *Elspeth R.M. Dusinberre*, University of Colorado Boulder, and *Mark B. Garrison*, Trinity University

Colloquium Overview Statement

This colloquium investigates some of the most important trends in recent scholarship on the visual and material culture of the Achaemenid Persian empire. As recently as 35 years ago, discussion of Achaemenid art largely focused on asserting the role that Greeks had played in creating the sculptures of Persepolis. Since then an entire new discipline has opened up, one that considers Achaemenid visual and architectural presentation in the context of its polyethnic imperial composition and nuanced reception.

The papers in the first half of this colloquium consider the capital city of Persepolis, while those of the second half focus on aspects of seals and sealing practices. The contributions illustrate a cohesive range of approaches—understanding the site of Persepolis, using glyptic imagery to understand identity and the priorities of those living in the Achaemenid empire, and interpreting the diaspora of Achaemenid notions of empire and imperialism. The colloquium contributes meaningfully to understanding the field, its diverse methodologies, and current trends in its investigation.

The first paper, "Images and Narrative: Travelers and Draftsmen at Achaemenid Sites in Persia and Their Reception in 18th-Century Europe," considers European reception and perception of Persepolitan architecture and art. The second, "Preserving the Polychromy of the Past for the Future: Investigating Aspects of Conservation, Technology, and Material Culture in Achaemenid Persia," focuses on an important but previously understudied aspect of Achaemenid visual culture of great note for its overall impact: the use of color. The third, "Arriving at Persepolis, an Unfortified Royal Residence," connects Persepolis' layout to the royal

gardens at Pasargadae. The fourth paper contributes significantly to our under-standing of both visual imagery and the Achaemenid military: "Sigillography and Soldiers: Cataloguing Military Scenes on Achaemenid Period Seals." The fifth pa-per, "The Sealings from the Palace of Apries at Memphis: A Case Study in Cultural Interactions in Achaemenid Egypt," explores the choices made by individuals to deploy cultural and ethnic signifiers in the imagery of their seals, demonstrating the diversity of experiences with and approaches to Achaemenid imperialism in Egypt. The final wrap-up summarizes the colloquium's contributions within the state of research in Achaemenid art today and suggests a few directions for future research.

The range of methodology and topics represented here, considered within an overarching focus on Persepolis and visual culture, provides a significant contri-bution to the field of Achaemenid studies.

DISCUSSANT: *Margaret Cool Root*, University of Michigan at Ann Arbor

Images and Narrative: Travelers and Draftsmen at Achaemenid Sites in Persia and Their Reception in 18th-Century Europe
Pierre Briant, Collège de France

The reports and drawings of the early travelers and visitors to southwestern Iran in the 18th through the mid 19th century figure prominently in the devel-opment of the initial phases of the study of Achaemenid history and art. Before the decipherment of the so-called Persepolitan writing, the drawings and com-mentaries offered by the most famous of the travelers to Persepolis (Chardin, De Bruyn, Niebuhr, and many others) enabled and facilitated the research conducted by scholars and antiquarians in their cabinets and study rooms in Europe. Most European antiquarians tended to conceptualize the art of Persepolis within the pa-rameters of the arts of specific cultures, which were known more or less precisely in European academic circles, particularly Egyptian and Incan, and principally through a comparative approach. Such an approach produced widely differing responses, some individuals (e.g., Voltaire, Herder) condemning the art of Perse-polis as "despotic," others (e.g., the travelers Figueiora, Chardin, Le Brun, and the antiquarian Caylus) expressing deep admiration. Winckelmann thought poorly of Persepolitan architecture and art (in explicit contrast to the High Classical art of Athens).

While these 18th-century European studies investigating the ruins of Persepo-lis provided the cornerstone for the emergence of the contemporary discipline of Achaemenid studies, they established a negative tone that tended to be perpetu-ated in scholarly assessments even as late as the 1950s, almost 75 years after ini-tiation of the first scientific archaeological excavations in Iran. It is only with the research of Carl Nylander and Margaret Cool Root in the 1970s that the originality and creativity of Achaemenid art was clearly articulated. Their approaches and in-sights allow the reconsideration of early travelers' interpretations and biases that this talk explores.

Preserving the Polychromy of the Past for the Future: Investigating Aspects of Conservation, Technology, and Material Culture in Achaemenid Persia
Alexander Nagel, Smithsonian Institution

Research into aspects of technology, conservation, and polychromy constitutes a minor but growing part of the discipline of ancient Near Eastern studies. The consequences of our imagi(ni)ng the polychrome pasts of the ancient world are richly debated at present. Within this context, the preservation of polychromy on the palatial structures of Achaemenid Persia in Iran offers a particularly interesting case study. This paper introduces aspects of the history and challenges of working on the polychromy of the facades of Persepolis and Pasargadae, two sites that lie at the center of recent research.

Between 2010 and 2012, a technical study of architectural fragments of decorated walls, floors, and columns excavated at Persepolis, Pasargadae, and Naqsh-e Rustam by Ernst Herzfeld (1879–1948) and now housed in the Freer Study Collection and Archives at the Smithsonian Institution in Washington, D.C., was undertaken to enhance our knowledge of Achaemenid materials and technology. Using photomicrography, X-ray fluorescence (XFR) analysis, scanning electron microscopy (SEM), and noninvasive Fourier transformed infrared spectroscopy (FTIR), the investigations revealed traces of paints and chemical components that had not been noticed before. There is evidence for an extensive use of a calcium copper silicate (Egyptian blue) and other pigments that originally adorned the surface of the monuments. This paper introduces the preliminary results of this research and explores the implications of its results within the context of discoveries of polychromy from recent excavations at Persepolis.

Arriving at Persepolis, an Unfortified Royal Residence
Rémy Boucharlat, Université Lyon–CNRS

When Darius and his advisors were planning the construction of Persepolis, their primary interest would have been in projecting imperial glory and splendor—that is, in a place to impress the court and visitors—not in providing physical protection. To see the terrace and buildings at Persepolis as a stronghold is probably misleading, despite Diodorus Siculus' description of three ramparts and some modern reconstructions.

The vision of Persepolis suggested in this paper is based on recent investigations at Pasargadae, Cyrus' imperial capital, which remained an important site of royal ceremony throughout the Achaemenid period. Pasargadae is not a walled residence. It consists of a park within which was a central well-planned garden surrounded by a few elegant buildings. The circumstances and details of the layout at Pasargadae suggest that Cyrus' principal intentions concerned expressions of control/dominance over nature. The residential and working city itself was located outside of the park, probably beyond the stone platform known today as the Tall-e Takht.

At Persepolis, Darius also emphasized the landscape, selecting the mountain as an impressive background for the huge terrace (Takht) situated at its foot. According to recent archaeological and geophysical surveys, the immediate surroundings

of the Takht were left empty, lying within a modest enclosure wall that has been only partially excavated. Beyond this limit to the west, there are no important buildings. There are large built-up areas for the population living at Persepolis and vast empty spaces probably for gardens and orchards. The residences of the elite, residences that employed stone architecture, were clustered within 3 km to the west of the Takht, as well as in other smaller quarters set elsewhere.

Arriving at Persepolis, the visitor did not enter directly into a built environment but first went across an unfortified, green, and well-watered plain in which there were, in some quarters, small stone "palaces" set within gardens. In the last kilometers leading to the Takht, there were poorly constructed mudbrick dwellings, presumably for artisans and workers. These mudbrick structures did not, however, obstruct the view of the columned buildings standing on the Takht. In this way, the city and the Royal Quarter reflect the image that Darius wanted to present, images of a peaceful empire, one not endangered in any way, because it was protected by the power of the king.

Sigillography and Soldiers: Cataloguing Military Scenes on Achaemenid-Period Seals

Christopher Tuplin, University of Liverpool

Although the Achaemenid empire was grounded in military conquest, its royal monumental art (as seen at Behistun, Persepolis, and Naqš-i Rustam) includes no images of warfare. Armed men are not absent—indeed they are numerous on the walls of Persepolis—but they are figures who stand guard against some unrepresented danger, and the set-piece scenes that express the power of the Great King do so through symbolism that may presuppose but certainly does not depict the acts of violence that were necessary to impose his will. Other art forms are not quite so self-denying—for example, a sarcophagus from Çan (Troad), a painted beam from Tatarlı (Phrygia), and a fresco from Karaburun (Lycia)—and there are other paintings and stone carvings than can be added to this tally. But the largest sets of combat images comes from one of the smallest types of artistic product, sealstones.

A catalogue can be assembled of 63 distinct items that represent a Persian figure in combat with adversaries of various sorts. (There are only about half as many Attic painted vases with such scenes, and still fewer relief carvings and larger-scale paintings.) A further 18 items that do not quite meet this definition help define the bounds of the main corpus. This paper explains the principles of inclusion and exclusion that govern the formation of this catalogue, articulates the character of the material catalogued, and assesses its contribution to our understanding of the Achaemenid military environment. There are three inter-connected elements.

First, despite the nonhomogeneity of the corpus in date, format, style, and subject matter, it offers access to Persian views about warfare.

Second, the iconography of sealstone combat images compared with that of other salient image sets is distinctive and provides a means of access to putative lost images in other media.

Third, the heavy preponderance of images of conflict with central Asians, Greeks, and Egyptians displays an ideological component. The way in which particular

specific fictive images of warfare are selected from the potential range of such things casts significant light on Persian attitudes toward war and its components. Specifically, it illuminates the concept of the "Persian man"—he whose "spear has gone forth far away," as Darius put it in one of his tomb inscriptions (DNa§4)—and contributes to our understanding of the empire's *ethno-classe dominante*.

The Sealings from the Palace of Apries at Memphis: A Case Study in Cultural Interactions in Achaemenid Egypt
Henry Colburn, University of Michigan at Ann Arbor

During the course of his excavations at the Palace of Apries in Memphis a century ago, Flinders Petrie discovered 39 sealings from a single context, which he described in his report as "the sweepings of an office that had existed in the upper part of the building." Partly on the basis of these sealings, as well as other objects, such as Aramaic tags and scale armor, he identified the palace as the seat of the Achaemenid satrap of Egypt, and by extension the sealings as the vestiges of the imperial administration.

These sealings permit us to reconstruct the social environment of Achaemenid administration in Memphis. Some of the sealings feature hieroglyphic inscriptions, while others exhibit motifs, iconography, and stylistic features that resonate with the seals preserved in the Persepolis Fortification Archive. Rather than passively reflecting existing ethnic categories of "Egyptian" and "Persian" the variety present in this corpus reflects active decisions by individuals based on how each constructed and conceived of his or her own identity. Thus, regardless of the ethnic origins of the seal owners, the thematic and stylistic variety of the Memphis sealings demonstrates the diversity of experiences with and approaches to Achaemenid imperialism in Egypt. In this respect, they challenge prevailing notions of both the ethnic exclusivity of Achaemenid rule, especially the *ethno-classe dominante* model, and the intrinsic conservatism and imperviousness of Egyptian culture. These sealings, like those in the Persepolis Fortification Archive, attest to a social environment at the Palace of Apries in which multiple traditions of material culture were valued and used side by side in an Achaemenid administrative context.

SESSION 1E
Roman Sculpture

CHAIR: *Ellen Perry*, College of the Holy Cross

Sculpture and Ideology at the Roman Imperial Amphitheater at Puteoli
Steven L. Tuck, Miami University

Two large-scale, largely intact, yet still unpublished marble sculptures were discovered at the Roman amphitheater at Puteoli. These provide important evidence for the decoration of this late Flavian amphitheater and demonstrate programmatic

parallels to other amphitheaters. The sculptures are clearly recognizable, almost life-sized images of eternal punishments from Greek mythology. One shows Ixion, preserved from the knees to the base of his neck, strapped to the wheel. The other depicts Prometheus, missing his arms and much of his right leg, chained to the rock, with a bird eating his liver. The Ixion image is particularly significant, as it is the only large-scale surviving image of the myth from the ancient world and one of only 25 such images in any media. The sculptures were probably originally displayed facing outward in the second-floor arcade in the facade, a position where coin images of the slightly earlier Colosseum show sculptures. I argue that the subjects are important for two reasons. First, they show the punishment of those whose actions threatened the established order, in this case the authority of the gods, suggesting a possible program for the decoration of the amphitheater that emphasized the reinforcement of state power in this public space. Second, these myths are identical with the mythological reenactments used for prisoner executions, as described by Martial (*Lib. Spect.* 7). The myths operate as metaphors for the brutal punishment of those who subvert Roman authority.

Comparisons can also be drawn to the contemporary Flavian amphitheater at Capua, which was also patterned after the Colosseum but with a better-preserved decorative program. The surviving 40 of the original 80 marble reliefs from Capua's amphitheater show almost exclusively scenes from Greek mythology, including many mythological punishments that complemented the hunt and execution events in the arena. Among the scenes preserved at Capua are Prometheus and Marsyas reliefs, images similar or identical to the prisoner executions performed as mythological reenactments known from literary sources. The sculptures from Puteoli provide additional evidence that mythological reenactments were found, at least in art, in venues outside Rome. Their correspondence with the decorative program at Capua suggests that amphitheaters, in this region and time, had decorative schemes that emphasized mythological metaphor and the punishment of those who transgressed authority.

Firebrands and Family in the Column of Trajan Torture Scene

Elizabeth Wolfram Thill, Indiana University–Purdue University Indianapolis

Scene XLIV is one of the most familiar and mysterious scenes on the Column of Trajan. Completely unique within Roman art, the scene shows five women in provincial dress torturing three bound and naked men, one of whom is notably beardless. Although several interpretations have been offered, scholars have reached no consensus regarding the scene's intended narrative or even the basic affiliation (with or against Rome) of either the men or women. I present evidence to argue in favor of the interpretation that the scene shows the torture of barbarians and Roman deserters at the hands of provincial women friendly to Rome. In addition, I move beyond a strictly historical interpretation of the scene to set the imagery within a greater thematic context. First, I argue that Scene XLIV must be interpreted along with the immediately preceding Scene XLIII, which shows Trajan welcoming and distributing rewards to auxiliary troops. Together the two scenes form a chiastic composition that contrasts the reward of once-foreign soldiers who eagerly fulfill their role as Roman subjects with the punishment not only of hostile

barbarians but also of soldiers who have forfeited their Roman identity. This can be recognized by taking into account several elements that previously have not been fully synthesized, including Trajan's unusual presentation and the odd kiss between soldiers in Scene XLIII, the generic building in Scene XLIV, and the frequency of significant chiastic compositions on the frieze. Second, I argue that this message of reconciliation and rejection is expressed by evoking ideals of the Roman family. Trajan, seated at ground level (the only example of the emperor in such a pose on the frieze), is presented not as a distant ruler but as an approachable father figure distributing tangible gifts, a motif echoed constantly throughout Trajanic art. The torture scene, in contrast, represents the perversion of the family, with the women using their torches, traditional symbols of marriage, not to nurture but to destroy. The Roman empire and the Roman *familias* are conflated conceptually. Scene XLIV thus is of far greater interest than as an unusual illustration of a possible historical incident. Instead, it bears implications for the exploration of ideas of the Roman state, identity, family, and gender in the Trajanic period.

The Meaning and Significance of Scene 49 on the Column of Marcus Aurelius
Richard F. Taylor, University of Oxford

Scene 49 on the Column of Marcus Aurelius, like most of the scenes in the column's helical frieze, is undocumented in the literary record. In the scene, Marcus stands on a podium and directs his attention toward a group of individuals assembled on the right. The bearded and tufted-haired appearance of these trousered and floppy-capped figures, some of which are bent at the knees and waist and cradling their cloaks in outstretched arms, has led scholars to posit that the scene depicts either an imperial reception of a surrendering barbarian embassy or the brokering of a treaty with a barbarian tribe. In this paper, I investigate the appearance of non-Romans wearing Phrygian caps elsewhere in the frieze to properly identify the scene's participants and subject. Most of the scenes featuring these figures appear prior to Scene 49, and in these, the figures are armed with bows and fight not against but rather along with Roman soldiers. The combination of Phrygian caps and bows points to the figures' eastern origin, and the *manibus velatis* gesture in Scene 49 should also be seen in this context. I propose that Scene 49 represents an honorific ceremony at which these allies are rewarded, perhaps even granted citizenship, for their dutiful service. Although we do not know much about the historicity of the column's frieze, Scene 49 may, in fact, provide a rare glimpse into a historical episode from the Marcomannic Wars.

Patrons and Emperor: Caracalla's Adult Portraits in Italy
Guido Petruccioli, Independent Scholar

In 212 C.E., Caracalla became sole emperor, and in commemoration of the event a new portrait, the so-called Sole Ruler type, was introduced. This was a pivotal moment in the evolution of the emperor's public image, which distanced itself dramatically from the style and the iconography of his predecessors' images. This Sole Ruler type has the largest number of extant sculpted copies in the history of

the Roman empire. However, three further portrait types of Caracalla are dated to the same period (212–217 C.E.). All three of these types, known as the Tivoli, Dresden and New York types, have survived in a limited number of copies in the round, found solely in Italy. Their date of introduction and period of circulation is uncertain, because, unlike the Sole Ruler, they do not appear on imperial coinage. They are problematic for the established modern method of assessing portraits: that is, they seem all to be contemporary and not to be directly related to a specific historical event or situation.

To justify the existence of these visually different but contemporary portrait types, this paper examines the context and patrons of Caracalla's portraits in Italy. It does so by surveying the extant if little-known statue bases of Caracalla set up in Italy in the years 212–217 C.E. Most of these honors for the emperor were commissioned by commercial congregations (collegia) and public servants. Monuments set up by elite members are surprisingly scarce. Most of the dedicatory inscriptions appear to have emphasized the innovative character of Caracalla's image in ways that can be related visually to the distinguishing features of the Sole Ruler portrait type. In contrast, honorific inscriptions by members of the Italian elite convey a more conservative depiction of the emperor's persona, one better illustrated by the iconography of the Tivoli, the Dresden, or the New York type. Assuming that the imperial court expressed no preference for one type over another within the range of "authorized" portraits, patrons would surely have been presented with a certain freedom of choice. Both epigraphical and archaeological evidence seem to reflect social differentiation of patronage, and they support the conclusion that ultimately public taste was the discriminating factor determining the success of the Sole Ruler type.

A Monumental Fountain at Aphrodisias: Refurbishment and Recycling of Monuments in Late Antiquity

Esen Ogus, Texas Tech University

A fountain complex at Aphrodisias in Caria was excavated by the French engineer M. Paul Gaudin in 1904 but was never fully published. However, the archaeology of the exceptionally well-preserved structure demonstrates the extent of the social and religious transformations, refurbishment and reuse of architecture, and new approaches to water management in Late Antique Asia Minor. This paper presents the results of the extensive architectural and archaeological study of the monument and its extant blocks.

The fountain seals the south end of a street that extends southward from the Sebasteion, a complex dedicated to Julio-Claudian emperors and Aphrodite Prometor. It was converted in late antiquity into a fountain by dismantling a monumental porch block by block, and transporting it to a new location. The tetrastyle porch is crowned by a triangular pediment that represents a bust in its center. This bust was deliberately chiseled off when the monument was adopted in its new context, which means that it was an image of an "intimidating" goddess, most likely Aphrodite. Moreover, three relief blocks representing Gigantomachy scenes were mortared in the intercolumniations of the facade. Water poured into the drawing basin in front of the facade through spouts drilled on these reliefs.

The results of this study show that the structure could originally have been a propylon in the temenos of the Temple of Aphrodite. It can most likely be dated to the Severan period based on stylistic comparanda from elsewhere in the city. Its conversion into a fountain, likely in the fifth century, demonstrates the ad hoc architectural solutions that provided the city with an impressive water facility. Moreover, the monument shows the confines of toleration and change in the Late Antique society: while the gods on the Gigantomachy reliefs were preserved, the goddess on the pediment had to be chiseled off. In conclusion, a sacred structure was embedded in the urban fabric of Late Antique Aphrodisias by taking on a new identity as a fountain.

Praxiteles at Ancient Corinth
Aileen Ajootian, University of Mississippi

More than 100 years of excavation at ancient Corinth have produced many Roman sculptural types, some rare in the province of Achaia. In 2010, the marble face of a satyr was excavated in Byzantine levels just south of the South Stoa in the forum at Corinth. It joins fragmentary head S 451, discovered more than 100 years ago near Temple C south of Glauke Fountain, restoring a small Roman version of Praxiteles' Resting Satyr sculptural type. A nonjoining satyr body, S 918, found in 1908 in the Peribolos of Apollo at the east end of the excavated forum, probably belongs with this head. Thus Corinth, like Athens, Argos, and Patras in Roman Achaia, has yielded a reduced version of Praxiteles' Resting Satyr. This variant on the fourth-century Praxitelean type was sometimes displayed in pairs, although at Corinth only one example has been recovered so far. The reunion of these fragments from disparate places in the Roman forum at Corinth raises intriguing questions about the significance of findspots and the original setting and reception of the statue. In addition, we can address the unsolved problem of sculptural workshops in Corinth and Athens by studying copies of the same fourth-century types. Furthermore, the discovery of this Praxitelean sculpture at ancient Corinth provides an opportunity for evaluating the presence there of other types attributed to the famous Late Classical sculptor. In fact, several other Praxitelean works have been excavated at the Roman colony. Most notably, there may have been at least two full-scale copies of the Knidian Aphrodite, plus several statuettes and variants. In addition, one fragmentary head may belong to a copy of Praxiteles' Apollo Sauroktonos. The presence of classical sculpture types in Roman cities reveals as much about aesthetic choices, public and private, as it does about the fame and importance of the lost originals. In the case of Corinth, an important cultural and political center in Roman Achaia rich in Roman statuary, the study of sculptural types and their findspots may help us reconstruct the ancient city, both its cityscape and its aesthetic aspirations.

The "Getty Cybele": A Portrait of Feminine Virtues
Ambra Spinelli, University of Southern California

There are countless representations in Roman art of the Phrygian goddess Cybele, who was introduced in the cult of Magna Mater in Rome by the end of third

century B.C.E. Cybele was regarded as protector of the cities as well as a goddess of nature and fertility. Of particular interest is an image with individualized facial features, known as the "Portrait of a Woman as Cybele," in the J. Paul Getty Museum. Although her main attributes are typical of the Phrygian divinity (lion and turreted crown), there are also some elements belonging to the Roman goddesses Ceres (wheat and poppies), Fortuna (cornucopia and rudder), and Bona Dea (snake armband). All these attributes are typical of Roman goddesses primarily associated with the main feminine virtues of chastity and fertility. In my view, therefore, the wealthy Roman woman, for whom this portrait was commissioned, was not necessarily or primarily interested in associating herself with a particular divinity, but rather—through the symbols of these divinities—in presenting herself as the embodiment of the principal virtues of a respectable Roman wife and mother. I argue that this Roman matron, whom scholars have interpreted merely as a priestess of Cybele, employed signs that "spoke" straightforwardly to the onlookers about her possession of such feminine Roman virtues as *pudicitia* and *fecunditas*. *Pudicitia*, in particular, was judged to be the "best ornament for a woman" (K. Olson, *Dress and the Roman Woman: Self-Presentation and Society* [New York 2008] 92). Thus, I believe that the eclectic attributes of the Getty Cybele can offer an excellent example of how syncretism and eclecticism function in Roman material and visual culture.

Judging from her uncarved back and the roughly carved top of her head, this sculpture was most likely once set against a wall or in a niche. More puzzling to scholars is the large, deep, roughly cut square cavity at the back of the statue. Based on comparanda, I argue that this cavity was large enough to contain a receptacle with the mortal cremated remains of the wealthy woman for whom this sculpture was made. The statue's divine attributes, emphasizing the patron's feminine virtues, would perpetuate her *bona fama* and *memoria*—the ultimate goal for any Roman citizens. These features, in combination with the cavity for her ashes, make the Getty Cybele a *unicum sui generis*.

SESSION 1F: Colloquium
Recent Archaeological Work at Sardis

ORGANIZER: *Nicholas Cahill*, University of Wisconsin–Madison

Colloquium Overview Statement

Archaeological research at Sardis in recent years has addressed a variety of topics in different periods of the city's long occupation, from general studies of the city's organization, economy, and history to studies of the specific buildings, artifacts, and genres. This colloquium presents highlights of recent research, including both new discoveries and important reevaluations of earlier work, which have transformed our understanding of Sardis and its material culture throughout its long history. Topics include the organization of the Lydian city and new excavations in the houses and palace quarter, a new study of sector PN during the Lydian and Persian periods, pottery and economy in the Hellenistic period, figural terracottas of the Hellenistic and Roman periods, the earthquake of 17 C.E. and its

aftermath, water management in Roman Sardis, the decorative scheme of the Roman synagogue, and funerary monuments, including sarcophagi and ossuaries.

Introduction: Lydian Sardis
Nicholas Cahill, University of Wisconsin–Madison

Excavation and survey at Sardis has transformed our understanding of the Lydian city and other aspects of the site in the Lydian and Persian periods. The fortification walls were traced around their circuit, revealing that the Lydian city was not along the banks of the Pactolus, as was previously believed, but was north of the acropolis, in the location of the Hellenistic and Roman settlements; the sectors thought previously to be the Lydian city center lay outside the walls. Excavation on two terraces in the city center, following earlier excavation in the 1980s and 1990s, uncovered traces of what may be a palatial complex. Lydian houses destroyed by Cyrus in ca. 547 B.C.E. were excavated nearby under the later theater, and also outside the city walls, near the extramural temple of Artemis. Like houses excavated near the city wall, these preserve remarkably complete and closely datable domestic assemblages. After the Persian destruction, much of the city center seems to have lain abandoned for centuries, until occupation began again in the Hellenistic period; there is no trace of settlement within the walls during the Persian era.

Gold Refining and Religious Cult in Lydian and Achaemenid Sardis
Will Bruce, University of Wisconsin–Madison

The excavation sector Pactolus North, located outside the fortifications of Sardis along the banks of the Pactolus River, was an area of continuous habitation and activity during the Lydian and Persian periods of Sardis' history. Among the activities at Pactolus North was gold refining; here, electrum, a compound of gold and silver, was separated into pure gold and silver. This area was later covered over by domestic houses and an altar devoted to the local goddess Kybebe. When excavated Pactolus North was thought to lie near the center of the Lydian city, and destruction deposits were linked to catastrophes known from historical sources. Recent topographical studies, however, have shown that Pactolus North was not within the city's fortified area. Furthermore, it was originally assumed that the gold refinery was constructed to separate natural placer electrum recovered from the Pactolus River. Recent research suggests, however, that the Pactolus did not contain electrum but pure gold; thus, a new interpretation for the function of the gold refinery is needed. When and why the gold refinery went out of use is also an important question. New information about the chronology, stratigraphy, and urban topography of this area allows a better understanding of the conversion of the space into a cult center surrounded by domestic units.

Sardis, from the King's Peace to the Peace of Apamea

Andrea Berlin, Boston University

What is the effect on a place when the aura and advantages of political power vanish? That is the question I am investigating at Sardis. I focus on the period between the King's Peace (387 B.C.E.) through the years after the Peace of Apamea (188 B.C.E.). For most of this time, Sardis retained its position as an imperial locale, first as the capital of the Achaemenid satrapy of Sparda capital and then of the Seleucid province of cis-Tauric Asia. But after the disastrous defeat at Magnesia and the huge territorial realignment imposed by the Peace of Apamea, Sardis became a minor city within the suddenly expansive Pergamene kingdom, reduced from a starring role in the political spotlight to an aging star whose time had passed.

I have reexamined and redated four major deposits from these years, and in so doing have developed a new view of the city's form and its inhabitants' fortunes. The deposits lay both inside and outside the city walls and contained household pottery as well as discarded debris from a ceramic workshop. The material reveals that Sardians had adopted Attic-style table settings already by the mid fourth century B.C.E., meaning a generation prior to Alexander's visit; that in the generation after Apamea Sardians remodeled their theater, probably in connection with the new Panathenaia and Eumenaia; and that by the later second century B.C.E. there arose in the city workshops producing low-quality tablewares, probably catering to a slightly more prosperous middle class—a group whose existence may be a direct result of the economic benefits of the new festival. At this same time, the first honorific inscriptions appears at Sardis. Both the "middling" pottery and the honorific statues are tangible evidence for a new kind of visibility for the citizens of Sardis, a visibility that rose as the city's political stature diminished—an unexpected but welcome peace dividend.

A Goddess Remolded: A Group of Kybele Figurines from Sardis

Frances Gallart-Marqués, Cornell University

Identifiable images of Kybele first appear in the sculptural record of Sardis during the mid sixth century B.C.E. The local iconography of this Anatolian goddess owed much to both western Phrygian and Ionic influences during the Lydian and Persian periods. A clear transformation in her appearance occurs when Sardis enters the great Hellenistic koine under Seleucid rule, and local artists adopt the widely disseminated Athenian version of the goddess.

Recent excavations beneath the cavea of the Hellenistic theater at Sardis discovered a large cache of Kybele figurines that can be dated to the third century B.C.E., suggesting the presence of a shrine to the goddess in the vicinity. While aspects of her traditional iconography may have been subsumed to conform to Seleucid political dynamics, those that survived guaranteed the goddess' continued popularity at Sardis. In particular, the frequency of lions used as attributes reinforced Kybele's historical connection with the Lydian kings and with the city's glorious past.

The Earthquake of 17 C.E. and Its Implications in the Strata of Sardis

Elizabeth DeRidder Raubolt, University of Missouri, Columbia, and *Jane DeRose Evans*, Temple University

The great earthquake of 17 C.E., mentioned by both Strabo (*Geographica* 12.8.18) and Tacitus (*Ann*. 2.47), marks a turning point in the history of Sardis. Recent excavations have identified considerable debris from this event on a monumental terrace below the northern slopes of the acropolis. A votive deposit allows us to date the cleanup effort and explore the ways in which residents reconstructed their lives and identity.

The excavated area includes at least one well-to-do residence that was occupied in the late first century C.E. Following its destruction, local inhabitants removed several of the walls and leveled the ground. As part of the rebuilding, they placed under one of the floors a votive deposit comprising two ceramic bowls, each containing several small bronze implements, an egg, and a single coin. The coins seem to have been specially chosen, and perhaps manipulated by superimposed graffiti, to appeal to Sardis' ancestral gods. Similar votive deposits found long ago near the Temple of Artemis at Sardis may reflect the same local impulse. Analysis of these artifacts and their contexts illuminates this pivotal moment in the revitalization of the city.

Management and Manipulation of Water in Roman Sardis

Brianna Bricker, University of California, Santa Barbara, and *Marcus Rautman*, University of Missouri, Columbia

The dramatic topography of the Sardis acropolis has always shaped local lives, with terraces built in Archaic and Hellenistic times challenging Roman planners to manage water liabilities and resources on a significant scale. The immediate response to the great Tiberian earthquake included consolidating the acropolis slopes, leveling urban debris, and providing residents with a reliable supply of water. Recent excavation has established the vast scale of these efforts, with evidence of earthquake-related cleanup and construction taking place in different parts of the site. Regional survey has identified channels, pipes, and tunnels that belonged to a complex supply network originating far outside the city and that were apparently operational by the middle of the first century. The most visible aspect of this recovery was the subsequent building of two or three large public baths along the city's lower perimeter, which concentrated municipal water resources in previously undeveloped parts of the urban plain. Construction of the western bath-gymnasium complex introduced new, distinctly Roman attitudes to water consumption and foreshadowed the creation of elaborate domestic displays in the fourth to sixth centuries.

The Visual Poetics of Paradise: Ornament and the Synagogue at Sardis

Vanessa Rousseau, Macalester College, and *Marcus Rautman*, University of Missouri

The monumental Sardis synagogue formed one of the Late Roman city's most complex visual environments. Occupied into the early 600s, the building saw structural alterations, repairs, and improvements throughout its life as the center of an affluent and diverse Jewish population. A series of inscriptions attests the interest of successive generations in embellishing this grand space with a broad palette of materials ranging from polychrome mosaics and freestanding sculpture to wall paintings, marble inlay, and relief. This paper explores two of the most distinctive aspects of this decorative program as recovered by excavation. Hundreds of pieces of *opus sectile* document a complex program of mural *skoutlosis* that includes geometric and floral patterns as well as images of birds, fish, and other animals. At least one wall of the forecourt carried a pilaster arcade with spandrels occupied by kantharoi and flanking birds carved in champlevé-style relief. The quality, extent, and preservation of the materials in the synagogue are exceptional for the city and its regional neighbors. The coordination of representational imagery across different visual media, moreover, draws on local sources to shape a special language of ornament for the building and its community.

Funerary Containers from Roman Sardis

Annetta Alexandridis, Cornell University

This paper investigates ossuaries and sarcophagi from Roman Sardis, more specifically those from the first century B.C.E. to the third century C.E. Although in many cases not found in situ, the containers and their inscriptions bear information about changing burial customs (i.e., cremation or inhumation), different degrees of expenditure (e.g., choice of material; local production vs. import), and the social, economic, and ethnic background of their commissioners and users. Ossuaries of *stephanephoroi* and two Asiatic columnar sarcophagi—the one of Claudia Antonia Sabina, member of a senatorial family, and a recently discovered albeit looted equivalent—serve as case studies. A comparison with funerary containers from Ephesos highlights the differences within the area that persisted even within the global framework of Roman Asia Minor. While the funerary containers from both cities share form and material, their users partly have a different background. In Ephesos, ossuaries and thus probably also the custom of cremation were mainly used by citizens of peregrine Italic and also servile origin. The epigraphic evidence from Sardian ossuaries, however, documents more people with entirely Greek names.

SESSION 1G: Colloquium
Women and the Military in Greece and Rome
Sponsored by the AIA Women in Archaeology Interest Group

ORGANIZERS: *Elizabeth M. Greene*, University of Western Ontario, and *Lee L. Brice*, Western Illinois University

Colloquium Overview Statement

Until recently, the field of military studies was dominated by state-level concerns such as battle formation, officer hierarchies, and general issues of organization in peace and war. These studies were the building blocks of research on the military, but they did not take into account certain aspects of life in classical armies, including the role of women in the operations of Greek or Roman militaries, on and off the battlefield. Since the 1990s, scholars have paid a bit more attention to women as a component of ancient military life. Such focus has remained extremely limited, mostly to Roman archaeology, and has been the subject of debate, which has predominantly taken place in European scholarly circles and not to a great degree in North America.

This session addresses the lack of dialogue about the role of women in military affairs in antiquity. It does not treat the largely fabled or exceptional figures of female warriors; rather, the papers illuminate the evidence for the actual role of women in the social fabric of military communities and the daily functioning of military affairs in peace or wartime. In both Greece and Rome, the social taboo against female participation in military affairs was prominent and has to some degree driven the lack of scholarship on women and the military in antiquity. An important strength of this panel is its synthesis of archaeological and historical approaches, which allows for a more holistic and informed understanding of women's roles. Past arguments have been criticized because of the narrow focus on specific artifacts with potentially ambiguous gendered associations. The combination of archaeological, epigraphic, artistic, numismatic, and textual evidence allows a multilayered picture to emerge, which includes patterns of physical presence along with social identification of individuals and their role in military affairs.

Individual papers address the issue of women and the military from elite and nonelite perspectives, covering the time period from classical Greece through imperial Rome. The papers form a cohesive group that provide an opportunity for fruitful discussion about the social expectations for women involved with military affairs. The papers in the first half of the session demonstrate how this manifests itself for elite women, and those in the second half discuss how elite models trickle down to the lives of women associated with everyday military affairs.

Commemoration of a Royal Woman as a Warrior: The Burial in the Antechamber of Tomb II at Vergina
Elizabeth Carney, Clemson University

When the royal tombs at Vergina were first excavated, Andronikos (*Vergina: The Royal Tombs* [Athens 1987] 177–80) concluded that the military items found in the

antechamber of Tomb II at Vergina, in which a young woman was interred, belonged to the male occupant of the main chamber. No other female burials from Argead Macedonia contained any military equipment, and the location of the military items seemed to suggest a connection to the male. The presumption was that some items belonging to the man had been omitted from his chamber before it was closed and then added when the woman (somewhat later) was buried, before the tomb was sealed.

We now know that multiple panoplies were present in the main chamber. Some believe that the man and woman were buried at the same time. The antechamber contained the remains of more military items than had at first appeared. Although debate continues about the identity of those buried in Tomb II, both sides now seem to accept that the military equipment in the antechamber belonged to the woman buried there and that she was commemorated as a warrior. Advocates of Philip Arrhidaeus have only one candidate for the woman in the tomb: his part-Illyrian wife Adea Eurydice, who addressed troops, dressed as a Macedonian soldier, and accompanied an army to battle (Carney, *AncW* 22 [1991] 19–20; Borza and Palagia, *JDAI* 122 [2007] 81–125). Those who believe that Philip II is the king in the main chamber once identified Cleopatra as the woman in the antechamber. Recognition that the military items belonged to the woman has led to the revival of Hammond's (*GRBS* 19 [1978] 331–50) suggestion of Meda, daughter of a Thracian king (R. Lane Fox, "Introduction: Dating the Royal Tombs at Vergina" *Brill's Companion to Ancient Macedon* [Leiden 2011] 32; A. Kottaridi, *Macedonian Treasures* [Athens 2011] 90–97).

This paper reflects on the significance of the burial of a royal woman as a warrior and more specifically on the possibility that she was commemorated as a barbarian warrior woman. It considers why Alexander (who buried Philip II) or Cassander (who buried Philip Arrhidaeus and Adea Eurydice) might have chosen to honor a royal woman in such a distinctive way. While this discussion may have implications for the continuing identity dispute, the dispute is not the main agenda of this paper, which is rather the constructed warrior identity of the female royal dead.

The Queen, the City, and the Army: Hellenistic Queens in Command
Monica D'Agostini, Università di Bologna and Università Cattolica, Milano

"And before long a herald arrived, told Laodike what had happened to Achaeus, and ordered her to resign the command and quit the acropolis." Thus Polybius (8.21.1–9) relates that in 214, during the siege of Sardis, the citadel is commanded by a woman, the queen Laodike, wife of the Seleucid usurper Achaeus. Surprisingly, following her husband's execution, Laodike remains in command of Sardis until Antiochus conquers the acropolis. Laodike's role at the head of a citadel supported by a loyal faction does not seem to be a problem in the eyes of Polybius, who is not known to be sympathetic to women or to eastern Hellenistic dynasties. On a broader level, this anecdote would seem to stand in clear conflict with the general image we have of women in Greek Hellenistic culture and society.

To better comprehend this incident, this paper discusses other possible precedents of Greek women at the helm of cities during the third century B.C.E. There

are at least two other sources that hint at such a scenario: the first is *P. Gurob* (*FGrHist* 160), where we learn that Berenike Syra was in charge for a time of the cities of Antioch and Seleucia and of a fleet. In the second, Agatharchides of Knidos (*FGrHist* 86, F 20a) states that Stratonike, wife of Demetrius II of Macedon, gained control of Antioch and instigated the city to rebel against Seleucus II. Though these testimonia are affected by the typical chronological uncertainty that plagues the period and the region, all these instances share similarities. All the literary sources belong to contexts relatively near these events spatially and chronologically, and all episodes take place in royal cities—but not in Greek cities—and each of these women seized control in the absence of a king, who was either dead or far removed.

I consider the three episodes in concert to gain insight into the ideology of power behind the queen's claim to rule a royal city. I place these events in the broader context of Hellenistic queens recurrently described as landowners in various Greek and Babylonian inscriptions, as well as the personal and political connections of such queens with their respective cities. Laodike's claim to lead a military faction and the support she has in Sardis are not historical hapax but are the first evident indications of the innovative Seleucid queenship.

Fighting Cleopatrai? Late Ptolemaic Princesses and Their Military Dowries
Alex McAuley, McGill University

Marriage to one of the Ptolemaic princesses who crossed into the Seleucid realm in the latter half of the second century brought many benefits, among them status, recognition, and Ptolemaic wealth. But these Cleopatrai also conferred something else on their various husbands that often slips past the scholarly gaze: military might. In Justin, Josephus, and our other sources for the later Seleucids, marriage to a Ptolemaic princess brings with it an army as if it were part of her dowry; as such princesses chose their husbands they were also choosing who would become militarily dominant. In the shifting marriage patterns of the later dynasty, armies became attached to princesses and queens, not to kings.

In this paper, I delve into the mechanism and convention by which these Cleopatrai acquired and maintained what became essentially their own military force. Their selective use of this force guided the rise and fall of many of the late Seleucid kings, and I shed some light on the place of these armies within the dowry and property of these princesses, as well as on the interaction between these Cleopatrai and their respective armies. Throughout, I consider the broader Hellenistic precedent and context to gauge whether this was a local phenomenon or the beginning of a broader pattern.

Betraying Their Sex: Women, Warfare, and the Defense of the Polis
Matthew P. Maher, University of Winnipeg

Before the creation of a permanent standing army by Philip II of Macedon, which was inherited and used so successfully and famously by his son Alexander, it is well known that Greek warfare of the Archaic and Classical periods was

largely the domain of the amateur citizen-soldier, the hoplite. Confrontations between hoplite armies were most often limited to short-pitched heavy infantry battles waged at agreed-upon locations during the summer months. It is hardly surprising, therefore, that the role of women in offensive warfare—as revealed by both the ancient sources and the practical limitations of the mechanics of the conflicts themselves—was essentially nonexistent. But owing to the fortuitous preservation of one ancient work by Aeneas Tacticus ("the Tactician"), it is clear that Greek women did have an important role to play in the defense of their city. Moreover, although the role of women in classical warfare remains largely archeologically invisible, there are some hints in the material record that may possibly be reconciled with elements of Aeneas' account. This paper addresses this evidence together to discuss the female role in classical warfare.

The work, *How to Survive Under Siege* (*Poliorketika*), is the earliest surviving military treatise from ancient Greece and was written during the middle years of the fourth century B.C.E. At that time, warfare in ancient Greece had been transformed incredibly by the relatively recent invention and the subsequent widespread use of *poliorketics*. Consequently, as the title of his work suggests, Aeneas is primarily concerned with presenting the different stratagems available to defenders who find their city under siege by an enemy force. Such dire circumstances, of course, called for unconventional and novel solutions, and it is here that the role of women, so imperceptible elsewhere in the arena of Greek warfare, becomes crucial. Indeed, as suggested by Aeneas, in such circumstances women appeared to have had no reservations about abandoning their traditional societal roles, and we are presented with mothers, wives, and daughters answering the call to defend their city in a number of interesting ways.

Women and Conquest in the Hellenistic East
Gillian Ramsey, University of Toronto

The Greeks had stories about Semiramis and her legendary eastern empire, which along with the conquests of Heracles and Dionysos formed the standard for measuring Alexander the Great's achievements (cf. Ctesias in *FGrHist* 688, F 1b). We know that Macedonians and Greeks with Alexander bemoaned the absence of their Hellenic wives and associated with eastern women instead, yet when these men were settled as colonists in the far east, their female companions are little considered. Women were present in the baggage trains of the Diadoch armies, and on one occasion in 316 B.C.E. the Macedonian soldiers fighting for Eumenes and the Iranian upper satraps abandoned their generals to ransom their (presumably non-Greek) wives and children who had been captured by the enemy, Antigonos Monophthalmos (Diod. 19.43.7–9). From later years, there is evidence that under the Seleucids both queens were active during phases of eastern conquest and that nonelite women were deployed along with their husbands to serve as military colonists. This activity occurred in the east, and easterners moved into Anatolia for the same purpose.

This paper argues that the necessity of women's involvement and presence in the process of territorial conquest was integral within the eastern Hellenistic context up to the second century B.C.E. These women were elite and "ordinary" and

came from multiple ethnic backgrounds, including Hellenic, Iranian, and Jewish, all of them linked to warfare by their relationships with soldiers and generals. While limited because of the region (toward the edge of the classical world), subject matter (women), and filters imposed by ancient sources, the evidence points to a strong sense among political leadership that women and a stable family dynamic were valuable for sustaining a long campaign and crucial to the process of pacifying and colonizing conquered regions. These were not "comfort women" but important members of a military, colonial, and cultural venture. Underlying elements of this concept were the precedents set by the Semiramis story and the historical actions of women under the Achaemenid Persians, some of whom continued to participate in the formative Early Hellenistic period.

The Role of Women in the Household Religion of Roman Military Families
Elizabeth M. Greene, University of Western Ontario

Latin epigraphy is a rich source of information for our understanding of women's roles in a Roman military household. There is abundant evidence pointing to women's significant participation, if not leadership, in the religious life of the family, with several military inscriptions recording their dedication to various deities on behalf of the whole family. Religion was an ever important aspect of life in the Roman world, including the army; therefore, having responsibility for household dedications would have been a socially important role. This paper explores the militarization of the lives of women associated with the Roman army, seen primarily in dedications made by a military wife on behalf of the whole family, as well as female dedications to deities almost exclusively associated with the military, such as Jupiter Dolichenus.

Wives of soldiers, albeit typically of the higher officer classes, are also known to have served as priestesses, which suggests that military women could hold important positions within the broader social hierarchy, not just within a single household. A stele from Nîmes (*CIL* 12 3175, 12 3368) dedicated by the children of a military tribune and his wife, Licinia Flavilla, shows an image of the couple with an inscription naming her as a priestess. This type of evidence reminds us that there were avenues for women to obtain social status within a military setting. Found here in the material record elaborating the life of a soldier we see a viable option for a high-status wife of a career military man.

By investigating the evidence for precisely what women were doing in the military community, not just for their presence, this contribution addresses the increasing trend to see the families of soldiers as an important part of the military community. In reality, those women and families that resided within the military community lived as much by the military clock as their soldier-husbands. Allason-Jones ("Women and the Roman Army in Britain" in *The Roman Army as a Community* [Portsmouth 1999] 41–51) suggests that if a woman had thrown in her lot with a soldier, her best chance of survival and prosperity was to follow him wherever he ended up. This paper explores individuals who did just that and takes the debate further by elaborating how they contributed to this military world, particularly in the realm of religious practice in military households.

SESSION 1H
Roman Provinces

CHAIR: *Michael Hoff*, University of Nebraska-Lincoln

Excavation in the Late Antique City at Golemo Gradište, Konjuh, 2012–2013
Carolyn S. Snively, Gettysburg College, and *Goran Sanev*, Museum of Macedonia

The anonymous Late Antique city at the site of Golemo Gradište near the village of Konjuh, Republic of Macedonia, has been under investigation by an international project sponsored by Gettysburg College and the Museum of Macedonia in Skopje since 1998. During the 2012 and 2013 seasons, excavation continued on the northern terrace, where a large residence and a Christian basilica were centrally located in the lower town.

The basilica was discovered in 2008; by the end of the 2011 season, completion of excavation in the nave, aisles, apse, and narthex revealed a number of unusual features—for example, two ambos. Investigation continued in the annex rooms to north, west, and south of what appears—both in size and liturgical elaboration—to be an episcopal church of the sixth century. To the northwest, an apparent baptistery came to light in 2012; the piscina had been destroyed to the foundations, but its shape was preserved, along with an elegant stone vessel. Massive terrace walls mark the southern and western edges of the ecclesiastical complex. In the southwest corner, a room with benches along three sides and a stepped platform at the fourth side was revealed. In 2013, excavation of the long apsidal room south of the church—originally interpreted as a chapel—revealed a well-preserved piscina just west of the apse. This discovery raises the question of whether a baptistery north of the church was deliberately razed and a new one built on the south side.

The Northern Residence stood only a few meters north of the church. Approximately 27 m long north–south, the building now appears to have been L-shaped, perhaps to fit around the northern annex rooms of the basilica, although the space between the annexes and the west wing of the residence remains to be investigated. The exceptional size of the residence and its location raise the question whether it served as the "episcopal residence," a type of complex that often housed a variety of ecclesiastical and community activities. In 2013, the discovery of a capital decorated with a bird standing on a cross and holding some object in its beak strengthened the hypothesis of a religious function for the residence. Study of the coins found in a room with pithoi and other ceramic vessels suggests that the residence was destroyed after ca. 565 C.E.

New Research at Simitthus (Chimtou, Tunisia)
Philipp von Rummel, Deutsches Archäologisches Institut

The ancient town of Simitthus (modern Chimtou, Tunisia), situated 180 km west of Tunis on the banks of the Majrada River in the Roman province Africa Proconsularis, has been the object of archaeological research conducted jointly by the Tunisian National Heritage Institute (INP Tunis) and the Deutsches Archäologisches

Institut (DAI) in Rome since 1965. Simitthus is known for its important quarries of yellow marble (giallo antico), which were enclosed by a large camp on one side of the marble mountain and the Colonia Iulia Augusta Numidica Simitthensium on the other side. This paper provides a report on the fascinating new results of the recent activities at Chimtou from 2009 to 2013. These include important new information on the pre-Roman phase of Simitthus, new insights into the urbanism of the Roman town based on the results of geophysical prospection, and the discovery of a Late Antique Christian complex at the site of a Roman temple from the first century C.E.

One Man's Trash! Ceramic Wasters and Changing Production Techniques at Roman Period Sagalassos
Elizabeth Murphy, Joukowsky Institute for Archaeology and the Ancient World, Brown University, and *Jeroen Poblome*, University of Leuven (Belgium)

Archaeology has been described as the study of garbage. Indeed, if ancient people hadn't discarded their waste into the archaeological record, we archaeologists would largely be unemployed. The case presented here investigates garbage of a particular character—ceramic production refuse. In the consideration of the nature and potential of refuse studies, ceramics from two manufacturing "dumps" at the red-slip tableware production center of Sagalassos (southwest Turkey) have been analyzed. Each dump is dated to a different period, the Early Roman period (mid first to mid second centuries C.E.) and the Late Roman period (fourth century C.E.), respectively. Evidence for production techniques and "mistakes" on the wasters (e.g., overfiring patterns, spalling, slip coloration, wheel and forming marks) has been analyzed along with discarded kiln furniture and tools to compare techniques of production within the framework of the production *chaîne opératoire*. Through this comparative exercise, technical and technological continuity, as well as changes in production techniques and practices, are identified at the site between centuries of production. By recognizing the challenges and difficulties faced by potters in these two periods, the results of these analyses offer a means to confront assumptions concerning loss of technical skill and inferior product quality in late antiquity.

A Village Tale: Late Antiquity in Central Jordan
Danielle Steen Fatkin, Knox College, *Katherine Adelsberger*, Knox College, *Alan Farahani*, University of California, Berkeley, *Benjamin Porter*, University of California, Berkeley, *Bruce Routledge*, University of Liverpool, and *Courtney Tichler*, Knox College

The dialectic between state power and ordinary people has long fascinated scholars. Ongoing excavations at Dhiban, Jordan, illuminate these processes for the Byzantine empire in west-central Transjordan. Fieldwork in 2012 and 2013 has concentrated on illuminating the nature of the settlement in the Late Byzantine and Early Islamic periods. Previous excavations at the site in the 1950s and 1960s recovered important information about both public and domestic zones of the

city. Starting in 2004, the Dhiban Excavation and Development Project (DEDP) has continued that work using high-resolution recovery techniques and focusing on domestic contexts. Three central questions motivate the DEDP's current work: First, why was Dhiban resettled in the first century C.E. after seven centuries of abandonment? Second, why was Dhiban abandoned in the ninth century C.E.? And third, what accounts for the site's prosperity in the Late Byzantine and Early Islamic periods? This presentation gives preliminary answers to these questions based on architectural, ceramic, and paleoethnobotanical analysis. These categories help establish the relative economic vitality of the ancient village and illustrate its local, regional, and transregional ties. Further, evidence of periodic reuse of abandoned houses, recovered through the project's fine-grained recovery techniques, provides new information regarding the "afterlife" of the site. Finally, analysis of materials related to the first centuries B.C.E. and C.E. establishes that the site likely fell within the realm of the Nabatean political sphere. Given the site's proximity to the ancient border with Judea, the DEDP continues to look for evidence indicating what sort of settlement it was in this early period. The emerging story is one of a settlement created as a border town that eventually grew in regional importance over the early centuries of the common era.

Agricultural Intensification and Local Economy in Late Antique Central Jordan
Alan Farahani, University of California, Berkeley

The intervention of past imperial political systems in politically and environmentally marginal areas is a burgeoning area of inquiry with worldwide archaeological ramifications. Nonlocal Byzantine political presence in the Levant, for instance, has been argued to have ushered in the apogee of agricultural intensification in the region's long history. Nevertheless, archaeological investigations of the actual agricultural practices that maintained these communities and their quantitative increase in production have been less used than settlement surveys and documentary sources. Excavations at Dhiban, Jordan, an archaeological site in west-central Jordan east of the Dead Sea, by the Dhiban Excavation and Development Project (DEDP) in 2009, 2012, and 2013 have yielded evidence of a substantial Byzantine occupation despite highly variable rainfall in the village and the physical difficulty of access. A rigorous, high-resolution sampling strategy has been employed to collect paleoethnobotanical and microartifactual remains that directly address the question of the extent of agricultural intensification—which maintained a prosperous Byzantine community that constructed a bath complex and a basilica—through the examination of the physical residues of past agricultural activities. Likewise, "microartifactual" remains produced through the process of flotation include artifacts and ecofacts that might otherwise be lost through the collection of visible remains only; they also provide key cultural information regarding the relationship of the community to the local landscape and to the regional economic networks that crisscrossed the Levant in the Byzantine period. The analysis of these samples provides evidence of a significant increase of some crops relative to others such as grapes in the Byzantine period, and in proportions much greater than in all other occupations on the site. A partial reconstruction of the depositional practices that led to the presence of

these remains in the archaeological record also illuminates where and how the preparation of these crops may have taken place by the Byzantine community and the significance for local labor. Finally, a comparison of paleoethnobotanical data from Dhiban with data from other Byzantine-period archaeological sites in the area, such as Lejjun and Hesban, reveals the way in which the Dhiban community exerted local agency in agricultural production while simultaneously intensifying its output. The results of this research therefore empirically establish evidence of agricultural intensification in the Byzantine-period Levant, while nuancing our interpretation of its unique trajectory in a rural village.

The Late Roman Fort at 'Ayn Gharandal, Jordan: The 2013 Season of the 'Ayn Gharandal Archaeological Project
Robert Darby, University of Tennessee, and *Erin Darby*, University of Tennessee

The third season of excavation at the site of 'Ayn Gharandal, Jordan, conducted by the 'Ayn Gharandal Archaeological Project (AGAP), took place in June 2013 under the auspices of a permit granted by the Department of Antiquities of the Hashemite Kingdom of Jordan.

During the 2013 season, a total of four squares were excavated: three associated with the ruins of the Late Roman fort and one with an unidentified structure on the eastern ridge overlooking the spring. In the fort, two of the squares focused on interior rooms, while the third investigated the area immediately surrounding the main gate identified in 2011.

Excavation of the gate revealed the collapsed stones of the archway lying in their original alignment with a monumental Latin building inscription still in situ above the keystone. The inscription is preserved to a near-perfect state and provides new information about the site, its garrison, and the provinces of Syria-Palaestina and Arabia at the beginning of the fourth century. Its discovery is of great importance both for our project and to the broader historical contexts of the region in late antiquity.

In the two intramural squares of the fort, we found further evidence, both architectural and ceramic, for differentiated use between the rooms lining the north and west curtain walls, as well as clear strata related to secondary use of the structure. On the eastern ridge, the ruins of a possible guard post or watchtower were exposed. Numerous intrusive burials, secondary construction within the structure, and modern looting have inflicted substantial damage on the building, rendering its original intent as yet unclear.

This paper presents a summary of the preliminary findings from the 2013 'Ayn Gharandal Archaeological Project.

SESSION 1I: Colloquium
Recent Work in Eastern Europe and Eurasia
Sponsored by the AIA Eastern Europe and Eurasia Interest Group

ORGANIZER: *Owen P. Doonan IV*, California State University, Northridge

Colloquium Overview Statement

This colloquium highlights new fieldwork and work by younger scholars in Eastern Europe and Eurasia, an area of growing interest to the AIA membership. These papers demonstrate this region to be the dynamic interface between the classical Mediterranean world and its equally developed Eurasian neighbors.

The first paper presents the 2013 results from the Shkodër Archaeological Project in northern Albania, a strategic area of the Adriatic coast. This interdisciplinary archaeological project including survey and geological and geophysical studies shed light on the emergence of social inequality in the Bronze Age, which was manifested by a pattern of hilltop settlements and tumulus burials.

The second paper presents results of a survey of the rock-cut Glouhite Kamani (Deaf Stones) of Rhodope, Bulgaria. Excavations by an American-Bulgarian team has attributed these monuments to the Late Bronze Age/Iron Age Thracians, based on finds of ritual offerings and hearths associated with them. Of course, evidence for early religious practice in Thrace holds great relevance for understanding later Greek and Anatolian religion.

The third paper examines the boundary stones erected by King Artashes I of Armenia and presents the thesis that they were part of a program of constructing genealogical and spatial claims to legitimate his authority after he was installed on the throne by Antiochus III.

The fourth paper presents recent excavations at Oğlanqala in Azerbaijan, particularly the Hellenistic and Roman phases. The cultural interplay between Roman and Parthian influence is examined through domestic architecture and funerary evidence.

The fifth paper is a survey of Roman theaters in the Balkan region and focuses on the distinctive features of theaters in this area as they relate to practice and local culture.

The sixth paper presents evidence on more than 1,000 Roman-period tombs from an important cemetery better known in the United States for its Bronze Age horizons. Samtavro was a main cemetery for Mtskheta, the capital of Iberia and an important cultural crossroads. Material finds and mortuary practices reflect the position of this community at the intersection of Roman and Persian spheres of influence before and after the introduction of Christianity.

Taken as a group, these presentations illustrate the relevance of the eastern European/Eurasian region for our understanding of cultural formation in a part of the ancient world only recently becoming accessible to Western scholars.

The 2013 Field Season of the Projekti Arkeologjikë i Shkodrës (PASH), Northern Albania

Sylvia Deskaj, Michigan State University, *Lorenc Bejko*, University of Tirana, Albania, *Michael L. Galaty*, Mississippi State University, *Stanley Galicki*, Millsaps College, *Jamie Harris*, Millsaps College, and *Zamir Tafilica*, Shkodër Historical Museum

The Projekti Arkeologjikë i Shkodrës (PASH), the Shkodër Archaeological Project, is an international, collaborative, regional research project focused on the Shkodër province of northern Albania, a strategically important region located in the western Balkans along the Adriatic coast. To understand better the transition to social inequality in Albania and in Europe generally, we have conducted four years (2010–2013) of interdisciplinary archaeological research, with one more year planned. This paper reports the results of our 2013 field season. Our study region encompasses the Shkodra Plain and surrounding hills and is situated along the eastern shore of Shkodra Lake, the largest freshwater lake in the Balkans. Geological surveys are allowing us to date lake shore and river course changes, which can be correlated with shifts in settlement, as established through intensive archaeological survey. In 2013, we conducted archaeological surveys around the open-air settlement of Zagorës and the large hill fort at Gajtan, producing copious evidence for prehistoric settlement. Finally, we undertook geophysical surveys (using ground-penetrating radar and seismic reflection) and excavations at a partially destroyed tumulus. The individuals buried in northern Albanian tumuli seem to have accessed multiple sources of power, ranging from violence and warfare to control of land, food, and trade. In addition, episodes of migration may have affected the course of events, bringing new blood and ideas at the start of and throughout the Bronze Age. Migration is being addressed through physical-anthropological assessment and strontium-isotope analysis of human remains.

Rock-Cut Monuments in the Eastern Rhodope Mountains

Lynn Roller, University of California, Davis, and *Maya Vassileva*, New Bulgarian University, Sofia

The Rhodope Mountain region in southern Bulgaria is rich in rock-cut formations where the natural terrain has been shaped by human agency into distinctive features, apparently for purposes of cult. The most common formations are rock-cut trapezoidal niches and chamber tombs. Their creation has been ascribed to the Thracians, the dominant ethnic group in this region during the Late Bronze and Iron Ages, but the function and chronology of the rock-cut features remain uncertain. While their existence has long been noted, there has been little systematic effort to map and record them accurately. Our current project, to record as many of these rock-cut monuments as possible, is an outgrowth of our continuing work at the site of Glouhite Kamani (Bulgarian for "Deaf Stones"). Fieldwork at Glouhite Kamani conducted in 2011 revealed an extensive cult site associated with a significant concentration of rock-cut niches, many of them carved in groups onto vertical rock panels. Excavations conducted by a joint Bulgarian-American team led by Georgi Nehrizov of the Bulgarian National Institute of Archaeology with Museum uncovered evidence for cult material from the Thracian period,

including clay figurines and hearths with animal bones, situated directly adjacent to the niche panels; these findings make it virtually certain the rock-cut niches are also connected with Thracian-period cult.

The Glouhite Kamani complex, however, is only one of a large group of rock-cut features that extends throughout the Rhodope region. In 2012, we returned to the Rhodopes to investigate further examples of rock-cut features. A number of major rock panels with large numbers of trapezoidal niches have been recorded throughout this region. While they are too shallow for cult or burial remains, many of the niches are located close to rock-cut tombs, and one explanatory hypothesis is that they were connected with funerary cult or funerary practices in some way. There are, however, other rock panels with multiple examples of trapezoidal niches but no adjacent burial tomb. Several of these are found on high cliffs in almost inaccessible settings, making it unlikely that anyone could have visited them regularly for cult purposes. Our mapping of the niches reveals that they often are located along transportation routes, suggesting that they may have been territorial markers of a cult or clan group. Future plans include a closer study of the relationship of the niches to the Glouhite Kamani cult material and investigation of parallel sites in the Rhodope region.

Claims of Space and Time: The Boundary Stones of Artashes I of Armenia
Elizabeth Fagan, The University of Chicago

After the Battle of Magnesia in 189 B.C.E., Strabo (11.14.5) reports that a new king took the throne in Armenia. Artaxias/Artashes, despite having been a general of the defeated Seleukid leader Antiochus, founded a new dynasty that went on to rule in Armenia for almost 200 years. The literary sources' foundation story of the Artaxiad/Artashesean dynasty suggests that sovereignty was presented to Artashes as a gift for service, but of course, he would also have needed to legitimate his authority. The centuries of Artashesean rule indicate that Artashes I established and maintained his authority successfully, raising the question of how he did so, particularly as a foreigner suddenly in power in a new land. Artashes left his mark on the landscape in the Armenian highland in more than one way, by founding a new capital city (Artaxata/Artashat) and also by erecting boundary stones in the Lake Sevan Basin and elsewhere. The functionalist interpretation of these monuments is naturally that they marked land on a plain that otherwise was difficult to divide according to terrain. However, a strictly functionalist interpretation fails to take into account the discovery of multiple boundary stones in contexts where the terrain may have been more easily divisible according to topography. This paper interprets the boundary stones of Artashes I not just as markers of land allotments but also as declarations of authority and legitimacy. The stones signified Artashes I's power to divide the land, and they also declared his legitimacy by making genealogical claims that connected his name with the name of earlier rulers. This paper analyzes the monuments as specific genealogical claims inscribed on stone across the Armenian highland, reinserting them into their spatial contexts and examining them according to their temporal claims. The paper argues that Artashes I's claims to space and time helped establish his legitimate authority in Armenia in the second century B.C.E.

Traces of Rome and Parthia in Azerbaijan
Lara Fabian, University of Pennsylvania

Recent seasons of excavation at the regional Iron Age center of Oğlanqala, Azerbaijan, have uncovered increasing evidence of interaction with Late Hellenistic and Roman centers during Oğlanqala period II (ca. 200 B.C.E.–100 C.E.). In particular, a pithos burial containing Roman coinage and glassware as well as several pits yielding a seemingly Roman-inspired red-slipped ware suggest more sustained contact with the Roman world than previously believed. This paper juxtaposes these Roman traces with contemporaneous local and regional architectural trends. In contrast to the Roman character of the small-finds assemblages, regional architectural patterns show affinity to eastern models. Though fragmentary, the period II architectural remains from Oğlanqala as well as possible nearby period II sites documented in recent survey may have ties to this tradition.

Rather than considering the "Roman" elements from Oğlanqala as essentially intrusive, injected into a physical landscape marked by Parthians and the east, this paper hopes to naturalize the material within the context of the ever-tumultuous South Caucasus. In the liminal space at the edge of the powers of Rome and Parthia, the material cultural remains reflect the overlapping and intersecting identities and agendas of local residents, regional authorities, and possibly even outside actors passing through the strategic node of the Şərur Plain.

Roman Provincial Theaters: A Review Based on Selected Examples from Dalmatia, Moesia, Noricum, and Pannonia
Tina Neuhauser, Karl-Franzens-Universität Graz

The Roman architect Vitruvius (*De arch.* 5.3.1) said that building a theater was one of the first priorities at a site: "When the forum is placed, a spot as healthy as possible is to be chosen for the theater, for the exhibition of games on the festival days of the immortal gods" Evidence of ancient theaters can be found throughout the whole Roman Empire. To talk about theaters in ancient times, Greek as well as Roman ones, is a complex topic, especially when it comes to Roman provincial theaters. All of these had their own particular design features, and to make matters more complicated, theater design varied in different parts of the Roman empire. In addition to extant theaters, one finds indications of theaters in present architectural remains or in reference to performances found on inscriptions. Not enough attention has been given to the provinces concerning either the existence of theaters or their role in the history of ancient theater. This is particularly true in Dalmatia, Moesia, Noricum and Pannonia, where a number of diverging cultures met. Greek, Roman/Italic, and Gallic influences can be seen in theaters in these provinces based on selected examples. Moreover, these four Roman provinces provide us with an interesting legacy that cannot be found in the rest of the Roman empire.

New Finds from Old Excavations: The Samtavro Cemetery of Caucasian Iberia
Aleksandra Michalewicz, University of Melbourne

The Samtavro cemetery in Caucasian Iberia presents a unique opportunity to study the burial practices of a significant cemetery in modern eastern Georgia. Although it was also used as a burial ground throughout the Late Bronze and Iron Ages (1600–300 B.C.E.), this project focuses on Samtavro during the Roman and Late Antique periods (100–600 C.E.). Data have been collected for more than 1,000 tombs, spanning Soviet and post-Soviet expeditions, and this paper examines associated material culture.

Such research is of particular importance for a number of reasons. First, the cemetery was located in the capital of the Iberian kingdom, Mtskheta, which was a major political and economic center. Mtskheta was also a place of cultural convergence, with Persian and Roman influence discernible throughout the period. To what extent are various cultural practices identifiable in the archaeological record? Second, usage of the site encompasses Iberian conversion to Christianity. How is this manifested in the mortuary ritual, if at all? Third, the project has amassed one of the largest collections of data for a Late Antique cemetery. Although there are several elite burial grounds within close proximity, Samtavro represents modest burial customs. What can we learn about how "ordinary" people lived and died?

This presentation addresses a range of questions by undertaking an in-depth analysis of the grave assemblages and by focusing on key artifact types and subtypes. In doing so, it provides a more nuanced understanding of the mortuary ritual practiced at Samtavro.

SESSION 1J
Mycenaean Political Economy

CHAIR: *Tom Tartaron*, University of Pennsylvania

The Lower Town at Mycenae: The Discoveries and Conundrums of the 2007–2011 Excavations
Antonia Stamos, American University of Kuwait, and *Christofilis Maggidis*, Dickinson College

The systematic mapping and geophysical survey around the citadel of Mycenae, commenced in the summer of 2003, was soon followed by a five-year excavation season (2007–2011) that revealed important finds dating to the Archaic, Geometric, and Mycenaean periods. These finds help establish continuity in the area after the Mycenaean collapse. Geophysical surveys have also suggested that the Lower Town was protected by an outer fortification system with gates. Soil analysis and geomorphologic studies have also given deeper insight into the formation and modification of the ancient landscape as well as the organization and layout of the structures.

The excavated remains of buildings (houses and workshops), retaining and fortification walls, apsidal and circular structures (cisterns, well, and silos), and

Geometric cist and pit graves all suggest obvious continuation at the site from the Late Mycenaean (Late Helladic IIIB) into at least the Archaic and even the Hellenistic period, as evidenced by previous excavations on the citadel itself. Such finds are also raising very interesting questions as to their function and use. Evidence of destruction and possible warfare, especially evident in the number of slingstones and arrowheads excavated so far, are painting an intriguing image of the final days of the Mycenaean settlement. The ongoing study of the excavated remains, along with the pottery and other objects discovered during excavation, are proving without a doubt that the urban center on the foothills surrounding the mighty-walled acropolis was an important one.

AROURA 2012–2013: Reconstructing an Extensive Agricultural Landscape Around the Late Bronze Age Fortress of Glas, Central Mainland Greece. Conclusion of Phase 1

Michael F. Lane, University of Maryland Baltimore County, and *Alexandra Charami*, 9th Ephorate of Prehistoric and Classical Antiquities, Thebes, Greece

Archaeological Reconnaissance of Uninvestigated Remains of Agriculture (AROURA) concluded its geophysical prospection and surface collection around the Late Bronze Age (Late Helladic [LH]) IIIB fortress of Glas in northern Boeotia, Greece, in the autumn of 2012. In all, more than 62 ha of land were sampled at an interval of 0.125 m with magnetometry between 2010 and 2012, and 4.5 ha of the same land, as well as of tracts at the nearby settlement site of Aghia Marina Pyrghos, were subject to intensive surface collection. Ground truthing of the results through soil coring and ditch section cleaning—recording soil profiles in both magnetic anomalies and background areas—continued in 2013. It indicated that a network of anomalies corresponds to long, linear features built of ancient lake sediment and paved above in places with boulders, parallel to which may be ditches from which the material was excavated. This pattern is consistent with a meticulously planned and executed arrangement of agricultural fields, which were probably irrigated with the assistance of gravity and floodgates from rivers canalized in the Late Bronze Age. Radiocarbon and optically stimulated luminescence dates indicate that these features were constructed sometime between 1880 and 1310 B.C.E. (95% probability, median ca. 1690)—that is, in the centuries leading up to the foundation of Glas ca. 1300 B.C.E. Pottery from Aghia Marina Pyrghos, 1.5 km from Glas, suggests a peak of activity there from ca. 1360 to 1170 B.C.E. (LH IIIA2–IIIC [early]). Taken together, these finds are unique in the Aegean and of signal importance.

Even Better Than the Real Thing: Hybrids and Painted Floors at the Palace of Nestor

Emily Catherine Egan, University of Cincinnati

For more than a century, the painted plaster floors of Mycenaean palatial megara have been a subject of scholarly interest. First discovered at Tiryns by Schliemann and Dörpfeld and subsequently uncovered at Mycenae by Tsountas and at Pylos

by Blegen and Rawson, these floors are remarkably uniform, each having been painted with a large grid composed of squares embellished with intricate patterns and motifs. Given these formal similarities, considerable debate has ensued over how the paintings should be interpreted, and more specifically, over what type of floor covering they were meant to represent: carpets or cut stone? This paper revisits this unresolved question with regard to the well-preserved yet enigmatic painted floors from the megaron at the Palace of Nestor at Pylos. Using new evidence gleaned from close examination of the painted patterns and of the techniques employed by the Pylian artists, it is argued that the paintings on these particular floors, rather than attempting to imitate realistic surface treatments constructed from a single material, were instead deliberately designed to emulate a variety of materials simultaneously, creating fantastic, hybrid surfaces that would have intensified the viewer's visual experience in this important suite of rooms. This use of hybrids, which is not evident in the painted floors of the other palatial megara, showcases the ingenuity of the Pylian artists and offers a new lens through which the link between decoration and use of space at Pylos can be viewed.

Weight Sets and the Political Economy of the Pylian State
Robert Schon, University of Arizona

In this paper, I propose a new way of looking at weights found in archaeological contexts: one that emphasizes weight sets as opposed to individual weights. Traditionally, archaeologists have treated individual weights as their primary units of analysis. With this approach, they have been able to identify base units of measurement and attribute weights to various cultural systems (e.g., Minoan mina, Mesopotamian shekel). From these data they could infer points of contact and possible exchange relationships among distant peoples. While progress continues to be made along these lines of research, there are limits to the kinds of questions that can be addressed by structuring the data in this way. I suggest that shifting the focus of investigation from individual weights to sets of weights enhances our understanding of ancient metrology. While the concept of the set has been applied to weights before, archaeologists have yet to establish any explicit methodology to reconstruct sets (although this has been attempted intuitively) or to assess their intrinsic characteristics. Furthermore, a focus on sets, rather than individual weights, opens up numerous avenues of research in broader topics, such as the archaeology of performance and the ancient political economy.

The paper has three goals. The first is to present a method by which archaeologists can reconstruct sets of weights. To do this, I consider raw material, form, and findspot in light of established metrological principles to identify coherent sets of weights. The second goal is to suggest criteria by which reconstructed sets can be assessed. Sets of weights have certain measurable qualities that can help scholars infer what could have been weighed and how accurately. I outline seven such features: absolute value, range, accuracy, incrementation, standardization, conformity, and archaeological context. These characteristics form the basis of my subsequent analysis of five sets of weights from the Bronze Age site of Malthi-Dorion in Greece. Finally, I illustrate the benefits of the proposed shift in analytical emphasis using data from both Malthi and its environs as a case study. Such an approach

enables the testing of various hypotheses concerning the use of weights in Late Bronze Age Greece. In the case of Malthi, I discuss the role of one set of weights in the taxation scheme of the state centered around the Palace of Nestor at Pylos.

Digital Imaging of the Linear B tablets from the Palace of Nestor
Dimitri Nakassis, University of Toronto, and *Kevin Pluta*, The University of Texas at Austin

This paper presents a new project whose goal is to create a print and digital edition of the administrative texts from the Palace of Nestor using advanced imaging techniques. Initiated in the summer of 2013, it is part of the official publication of the Palace of Nestor at Pylos, which was excavated by the University of Cincinnati under the auspices of the American School of Classical Studies at Athens. We argue that digital editions such as ours have the potential to transform the study of the Aegean Bronze Age by allowing researchers to interact with artifacts at a level of detail and verisimilitude that approaches that of autopsy.

We employ two imaging techniques. The first is reflectance transformation imaging (RTI), a method that involves taking multiple photographs of the same artifact under variable lighting conditions. These photographs are stitched together into an image file that stores the color of each pixel in addition to how it reacts to light, allowing the user to relight the artifact in an interactive virtual environment. RTI therefore affords the opportunity to select the best lighting angle or angles for clearest presentation of the inscriptions. The second imaging technique is structured-light three-dimensional scanning, which has the ability to record accurate, low-interference surface data with minimal cleanup. The technique is particularly useful as it collects color data that permit realistic renditions of the artifacts being recorded. In combination, these two techniques will provide highly accurate renditions of the color, shape, topography, and texture of every administrative document from Pylos.

We see two closely related advantages to this digital imaging. First, we anticipate an improvement in the conservation and archiving of the physical artifacts, since the availability of high-resolution images in two and three dimensions will reduce the need for their study and handling. Second, a digital edition provides users with the ability to work interactively with the administrative documents in a digital environment. The resolution of the imaging is such that it even permits users to propose new readings and joins. This allocation of high-quality primary data to scholarly experts represents an exciting development. Far from being merely an enhancement of standard methods of illustration, these imaging techniques have the potential to transform the field by distributing control of the primary data to all qualified experts.

Architectural Production at Mycenaean Kalamianos
Charlie Harper, Florida State University

Over the course of five seasons (2007–2011), the Saronic Harbors Archaeological Research Project closely documented the exposed remains of numerous Myce-

naean structures at Kalamianos, a harbor site in the southeastern Corinthia. This study approaches Kalamianos from an economic perspective by focusing on the production of architecture at the site using *chaîne opératoire* and architectural energetics. After presenting a simple reconstruction of a single Mycenaean building at Kalamianos, I discuss the sequence of tasks and concomitant energetic costs required to produce it. The results of this analysis are then used to estimate the overall cost of producing the major Mycenaean structures at Kalamianos, and this cost is compared with other energetic studies in the Aegean. Finally, I discuss how *chaîne opératoire* and architectural energetics allow us to scrutinize the management and recruitment strategies that builders may have employed at Kalamianos. To drive this point home, I present model schedules that illustrate the different ways in which construction at Kalamianos could have been organized during the agricultural off-season.

Scales in Mycenaean Land Use: The Role of Multiscalar Geoarchaeology in Understanding Land Degradation in the Bronze Age Aegean
Daniel J. Fallu, Wiener Laboratory, American School of Classical Studies at Athens

The potential of agricultural overextension to generate or contribute to socioeconomic failure is a long-unresolved problem in the study of collapse in the Bronze Age Aegean. This paper examines the current data and methods in the study of land use and degradation in the Bronze Age Aegean, including archaeological evidence for terracing and agricultural produce, sediment dynamics and soil sciences, and Linear B documents pertaining to agriculture. The discussion investigates these individual lines of evidence to examine the debate on Mycenaean land abuse to date and to reassess the role to be played by multiscalar geoarchaeological investigation in understanding the relationship between land use and landscape change during and subsequent to the collapse of Bronze Age palatial administration in Greece.

The methods and theoretical background presented in this paper form the basis for geoarchaeological research into Bronze Age landscape degradation in the environs of the citadel of Mycenae being conducted through the Wiener Laboratory of the American School of Classical Studies at Athens. Attention is paid to a wide range of erosional studies in order to better characterize the processes that result in loss of productivity and eventual landscape instability. Of particular concern is the necessity of combining regional and "off-site" surface modeling with "onsite" thin-section analysis to provide connections between regional, intrasite, and microscopic scales as well as to permit understanding of the various time scales at which human and geological processes operate. Future multiscalar investigation of sedimentary sequences at key sites on the mainland is suggested to further elucidate the cause-and-effect linkage between land use and degradation in Bronze Age Greece as well as to better bridge the gap between socioeconomic and geological discussions in Aegean prehistory.

SESSION 2A
Lithics and Interaction in Mediterranean Prehistory

CHAIR: *Tristan Carter*, McMaster University

The Cretan Earlier Mesolithic in Its Eastern Mediterranean Context: New Data from Livari

Tristan Carter, McMaster University, *Danica Mihailović*, University of Belgrade, *Yiannis Papadatos*, University of Athens, and *Chrysa Sofianou*, 24th Ephorate of Prehistoric and Classical Antiquities of the Hellenic Ministry of Culture

This paper considers Cretan early prehistory in a broad eastern Mediterranean context by discussing new Mesolithic finds from Livari (east Crete), which is only the second pre-Neolithic site to be excavated on the island, after Damnoni in the Plakias region. The material relates to a small-scale and likely seasonal hunter-gatherer occupation in front of a rock shelter on a coastal plain, some 200 m from a perennial spring, a location typical of Aegean Mesolithic settlement patterns.

The finds are exclusively chipped stone, the assemblage dominated by local cherts. There is, however, a small amount of Melian obsidian (sourced by EDXRF), which represents the earliest evidence for seaborne connections between Cretan populations and the Cyclades. Concerning technology and typology, the assemblage is mainly flake based, with the on-site reduction of small pebble cores. The common modified tool types include "spines" (borer/perforators), notches, denticulates, small scrapers, and backed pieces. While microlithic in character, the material lacks geometrics sensu stricto, and there are not many bladelets or blades.

Perhaps unsurprisingly, the chipped stone's closest parallels come from the Plakias-region sites to the west. More generally, the Livari material fits within Sampson's Early Holocene Aegean Island lithic tradition and is broadly comparable to the assemblages from the early ninth-millennium cal B.C.E. sites of Maroulas (on Kythnos in the northern Cyclades) and the Cyclops Cave (on Youra in the northern Sporades). Links can also be made with the Franchthi Cave material (lithic phase VII) from the mainland, while general parallels exist between these Aegean microlithic flake assemblages and those from Cyprus (post 11th to pre/early 9th millennia cal B.C.E.). The Livari material is, however, quite distinct from contemporary Epipaleolithic/Mesolithic/Pre-Pottery Neolithic material from Anatolia and the Levant, whose assemblages are characterized by blades, geometric microliths, and the microburin technique.

The Livari chipped stone can therefore be located within a wider Aegean cultural tradition, one distinct from Anatolian and Levantine practices, and contributes to our knowledge of early island use in the Aegean. The data also contribute to the important question of the socioeconomic traditions and extra-island connections that were in place prior to the introduction of domesticates into Crete at the end of the eighth millennium B.C.E. Our study might suggest that the establishment of a small Neolithic village at Knossos (stratum X) represents a sharp cultural as much as economic break, perhaps overriding rather than exploiting preexisting off-island/Aegean socioeconomic networks.

From the Dark to the Light: A Comparative Analysis of Lithics Recovered from a Neolithic Cave Site and Its External Settlement in Pyrgos Dirou, Greece

Danielle J. Riebe, University of Illinois at Chicago

Identifying variation in the distribution of material culture is critical for discerning functionality of space at an archaeological site. For the past three years, the Diros Project has been conducting field survey and excavations near the modern-day town of Pyrgos Dirou on the Mani Peninsula. The goal of this project has been to understand how the Neolithic cave site of Alepotrypa related to its surrounding physical and social landscape. A contemporaneous open-air settlement, Ksagounaki, has been identified above the cave, and the recent excavations there allow comparisons in material distribution between the two locations to be undertaken.

Previous compositional analysis using a Bruker portable X-ray fluorescence (P-XRF) device showed that a majority of the obsidian chipped-stone artifacts from inside Alepotrypa originated from the island of Melos, with the quarry of Sta Nychia being the dominant source and material from Demenegaki being less common. The inclusion of ^{14}C dates from the cave assisted in the identification of diachronic changes in quarry exploitation at the site. Thus far, most of the recent analytical research at the site has focused on material from inside the cave, and relatively little work has been done on materials from the current excavations on the connected open-air site. To understand the relationship between the external settlement and the cave site, compositional analysis of the obsidian was expanded to include materials recovered from the Ksagounaki excavations. This paper presents the results of the obsidian analysis and assesses the prevalence of obsidian throughout the cave and the external settlement. Based on previous findings, it is expected that obsidian from the external settlement and from other parts of the cave will be predominantly Melian, but specific attention will be given to the ratio of material from Sta Nychia and Demenegaki to discern whether location affects material preference. The results obtained from this study enable initial conclusions to be made about social behaviors during the Final Neolithic, as indicated by the distribution of obsidian material at Ksagounaki and Alepotrypa.

Prehistoric Obsidian Use and Trade in Sicily (Italy): Nondestructive Analyses on 1,500 Artifacts from 30 Sites

Robert H. Tykot, University of South Florida, *Kyle P. Freund*, McMaster University, and *Andrea Vianello*, University of Oxford

A systematic, large-scale analytical program for obsidian from prehistoric archaeological sites in Sicily was conducted in 2012 and 2013. With the permission of several museums and superintendencies, more than 1,500 obsidian artifacts from 30 sites dating from the Early Neolithic to the Bronze Age were examined and characterized by their typology and technological features; they were analyzed nondestructively using a Bruker III-SD portable X-ray fluorescence spectrometer to determine their specific geological source and reconstruct transport/trade routes. This instrument has been shown to distinguish all island sources in the Mediterranean and the subsources on each, including Gabellotto and Canneto Dentro on Lipari and Balata dei Turchi and Lago di Venere on Pantelleria. Most

previous studies of obsidian in Sicily used only visual characteristics to distinguish Lipari from Pantelleria, with chemical analyses limited to Grotta dell'Uzzo, the Milena territory, and Ustica.

In this study, analyses were conducted in Siracusa, Gela, Licata, Agrigento, Milena, Partanna, Marsala, and Tindari, as well as on Lipari. For most archaeological sites, all the recovered obsidian artifacts were examined and tested, while for a few with very large assemblages, the artifacts tested were randomly selected. Not surprisingly, all artifacts tested came from either Lipari or Pantelleria, confirming visually based predictions but also demonstrating for the first time that multiple subsources were used on each island. Substantial differences were noted in the quantity and quality of obsidian from different sites, especially regarding the size of cores and the proportions of blades, flakes, and debitage. Flint or other stones also were being used, and they were counted where possible.

The large number of sites and artifacts tested allows us to assess variation based on location, time period, production methods, typology, and usage. Our interpretations consider that Pantelleria is 100 km southwest of Sicily, with no islands in between, while Lipari is only 30 km from the northeast coast of Sicily, with Vulcano along the way. We also consider the physical and mechanical characteristics of obsidian artifacts: Lipari obsidian can be highly transparent and glassy or opaque with phenocrysts, which affects the sharpness, brittleness, and potentially the preferred usage, while Pantelleria obsidian is opaque and much less brittle. Both islands were important sources of obsidian despite their differences in location and quality of material. Finally, we integrate our obsidian data with ceramics and other material studies to understand the socioeconomic nature of trade and contact in the Neolithic and Bronze Ages.

SESSION 2B
Bodies and Difference

CHAIR: *Mireille Lee*, Vanderbilt University

Pars Pro Toto: Interpretation of Bodily Differences in Ancient Greece
Johannes Verstraete, University of Cincinnati, and *Jorie Hofstra*, Rutgers University

It is now generally accepted that standards separating "normal" from "abnormal" bodies are social constructs that cannot simply be extrapolated from one time and place to another. This poses a problem for any study of bodily difference in times past. Records of the lived experience of bodily difference or disability in antiquity are scant at best. Apart from occasional references in the Greek literary sources, the evidence for disability is fragmentary, scattered, negligible, and often contradictory; however, the social construction and experience of disability is not entirely unknowable.

An analysis of anatomical votive offerings representing limbs or organs offers an opportunity to address how bodily differences or "incomplete" bodies were viewed and experienced in ancient Greece. On the basis of archaeological evidence from the sanctuary of Asklepios at Epidauros and other Asklepieia, in conjunction

with epigraphical and literary sources, I investigate what anatomical votives might tell us about the experience and identity of an ancient Greek with a troublesome bodily difference. I examine what it might mean to represent the troubled body in bits and pieces in the context of ancient Greek theories and representations of the body in parts or as a whole.

I propose and discuss the viability and consequences of three possible interpretations. First, the practice of representing the troubled body in bits-and-pieces form may reflect the fragmentation of the supplicant's identity into normal and abnormal parts, as well as the domination of identity by the abnormal part. Second, fragmentation could serve as a means of localizing the stigmatizing power of the bodily difference in a single part, thereby protecting identity. Third, that votive representations are a form of fragmentation leading to enchainment with like artifacts from sufferers of similar experience; the meaning may be in the collectivity of votives rather than in each.

Finally, I outline a way in which an understanding of the experience of votive presentation points back to the experience of the troubled body in daily life.

Understanding Disability in the Hellenistic Period

Debby Sneed, University of California, Los Angeles

In the Hellenistic period, a new type of figurine emerged, the so-called grotesque. These humanoid figurines, which present a variety of disabilities and deformities, have been found throughout the Hellenistic Greek world, a testament to their popularity. They are so generic in their construction that it is quite difficult to determine their time or place of manufacture. That they are often crude and of cheaper materials such as terracotta suggests that they were objects for the masses, not for the elite, and that they were personal items that owners kept in their homes and perhaps even carried on their persons as charms.

In efforts to understand the function of these figurines, many scholars have attempted to identify what specific disability or deformity an individual figurine may represent and to argue that particular representations are significant. Those figurines that show dwarfs, for example, are often categorized by the different types of dwarfism that have been identified in modern times, and significance is assigned to each accordingly. In this paper, however, I argue that it is more productive to approach these figurines not with our modern understanding of disability and deformity but with an ancient one. First, I outline a vocabulary of disability in the period in an attempt to understand how specifically Hellenistic Greeks spoke about, and thought about, disabilities and deformities. Then I look at the general and often-repeated features of these figurines; their similarities can explain how and why they may have served as personal items. Last, I examine the world in which they emerged to determine—or try to—why they became popular when they did.

This paper demonstrates that the ancient Greek lexicon did not provide for the identification of specific types of disabilities; individuals were classed as "disabled" or "deformed" generally, without much care given to the specific causes of the pathologies. At the same time, the available evidence points to a great deal of interest in disabilities and deformities in the Hellenistic period: these figurines

were popular, as is clear by the large number that survive, and they suggest that the sight of disabilities and deformities was not considered abhorrent. Indeed, the literary and archaeological evidence suggest that the disabled and deformed could be and in fact were integrated into society in various capacities.

Fig Leaf Not Required: The Overt Sexuality of the Barberini Faun
Amanda Herring, Loyola Marymount University

The overt sexuality of the sleeping satyr known as the Barberini Faun has long been noted by both scholars and casual viewers of the artwork. In contrast to earlier male nudes, the Barberini Faun shows the satyr as a sexual object. This paper unpacks the meaning and appearance of the statue and analyzes how the satyr's vulnerability reflects the sexual mores and practices of the Hellenistic period.

With his heavily muscled torso reclined in sleep, the satyr's animalistic characteristics are downplayed, encouraging the viewer to see him as human. The position of his body, notably his splayed legs, draws attention to his genitalia, while his closed eyes cast the viewer as voyeur. It is a radically different depiction of satyrs than the archaic and classical images depicting them as ithyphallic hypersexual aggressors indifferent to gender or even species when pursuing objects of their desire. One common trope represents satyrs approaching sleeping maenads who repose in their own vulnerably supine positions.

The question of how the satyr switched roles in Greek art can be elucidated by a discussion of sexual roles in Greek society and the changes in those roles between the Classical and Hellenistic periods. Since the 1970s, scholarly analyses focused on Greek sexual practices have shed important light on the societal restrictions governing the sexual relationships of citizen males. The pederastic relationships between mature men and adolescents were tightly regulated, especially in Athens, with a focus on how these liaisons could benefit not only the individuals but also the polis. The Hellenistic period, by contrast, focused on the personal and saw a broadening of how sex was discussed. Heterosexual love played a greater role in art, literature, and society, and in tandem, discussions of homosexual relationships focused less on their societal role and more on how these relationships benefited the participants. The rigid guidelines that regulated pederastic relationships were relaxed. The Barberini Faun illustrates this change. A mature man could now be seen as an object of desire. This image of the satyr is foreshadowed by the fourth-century Praxitelean statues of satyrs with the soft bodies of adolescents. Yet these statues cast the satyrs as *eromenoi* and do not draw direct attention to their sexuality. The Barberini Faun, with the well-developed physique of a man in his 20s, could be cast as a sexualized sleeping figure only in the Hellenistic period.

SESSION 2C
Fieldwork in the Near East

CHAIR: To Be Announced

Excavations of the New Kingdom Gate Complex in Jaffa by the Jaffa Cultural Heritage Project, 2013

Aaron A. Burke, University of California, Los Angeles, and *Martin Peilstöcker*, Johannes Gutenberg Universität Mainz

From 23 June to 1 August 2013, the Jaffa Cultural Heritage Project (established 2007) continued excavations of the Egyptian gate complex and contemporaneous occupational levels in Area A at Tel Yafo (ancient Jaffa). This season represents the third year of an effort to investigate various aspects of the New Kingdom (Late Bronze Age) Egyptian fortress. The effort is part of a research design intended to explore the archaeology of insurgency and social interaction by examining contexts of violence at the fortress as represented in four phases of destruction, as well as the material evidence for the integration of various social elements in the life of the fortress garrison. This research is part of a collaborative research grant funded by the National Endowment for the Humanities from 2013 to 2016. The excavations follow up on the Kaplan Excavations Publication Initiative, which seeks to analyze and exhaustively publish the unpublished excavations in Jaffa of Bronze and Iron Age contexts by Jacob Kaplan (1955–1974). Excavations since 2011 play a vital role in this reinterpretation and have made possible the interpretation of the fragmentary records from Kaplan's work. The 2013 excavation report includes an overview of excavations in Area A of both the gate complex on the east and contemporaneous contexts within the fortress to the west, as well as an integrated analysis of Kaplan's unpublished records. Together, these elements permit the articulation of an archaeology of insurgency during three centuries of Egyptian occupation (ca. 1460–1150 B.C.E.). This picture greatly enhances the traditional understanding of Egyptian empire in Canaan by providing tangible evidence of the severity of local resistance to Egyptian rule as revealed in the archaeological record of one of Egypt's key military and administrative centers.

The Omrit Settlement Excavations: Preliminary Results and Future Plans

Jennifer Gates-Foster, University of North Carolina at Chapel Hill, *Benjamin Rubin*, Williams College, *Daniel Schowalter*, Carthage College, *Michael Nelson*, Queens College, and *Jason Schlude*, Duquesne University

Khirbet Omrit is a multiphase site located in the foothills of Mount Hermon, approximately 4 km southwest of Banias. The settlement occupies a strategic location on the ancient highway system linking the coastal cities of Caesarea Maritima and Tyre to the Roman provincial capital in Damascus. Past fieldwork at Omrit has centered on excavating the architecture of the Roman-era temple complex, which was originally constructed sometime during the mid first century B.C.E. As publication of the temple complex proceeds, the Omrit archaeological project has entered a new phase focused on studying the cultural and economic development of the settlement associated with the temple. The project's research goals are threefold: (1) to resolve the origins and chronological phasing of the settlement; (2) to investigate how the inhabitants acquired and used key resources, such as water and building materials; and (3) to determine the relationship between Omrit and other important regional centers, such as Banias and Kedesh.

This paper presents new evidence from the 2012 and 2013 excavation seasons that helps clarify the nature and function of the settlement at Omrit, particularly during the Late Roman and Byzantine periods. Pottery recovered both in the excavations and in the surface survey indicates that human activity began at Omrit sometime during the Early Iron Age. To date, however, there is still no evidence of significant building or settlement prior to the second century B.C.E. Recent excavations have recovered extensive remains of fourth- to fifth-century C.E. houses and shops constructed from the spolia of earlier Roman buildings, which contain implements for agricultural processing (e.g., basins, grinding wheels), as well as complex hydraulic systems designed to channel water throughout the site. Determining exactly how these Late Antique buildings were used—whether they were domestic, industrial, or a mélange—is a central question to be addressed by work in our next three seasons (2014–2016). Based on preliminary analysis of the pottery assemblage at Omrit, it seems that many of the same forms and wares used at the site also appear in nearby cities, most notably Banias. This evidence, along with other material from the site, underscores the close economic relationship between Omrit and other regional centers (e.g., Banias, Kedesh) from the second century B.C.E. to sixth century C.E.

The 2006–2009 Excavations at Tel Zahara: Results, Analysis, and Interpretation
Susan Cohen, Montana State University

The excavations at Tel Zahara, a small site (0.25 ha) located in the central Jordan Valley in modern Israel, took place between 2006–2009, during which time excavations uncovered a recent (pre-1948) Muslim cemetery, indications of ephemeral activities at the site dating to the Islamic periods, significant Roman and Hellenistic occupation, and a smaller number of architectural and ceramic remains from the Middle and Early Bronze Ages. The primary research goal of the Tel Zahara project was to excavate this small rural site, which is located only 5 km away from the large urban center of Beth Shean (Scythopolis in the later periods), to examine the scope and nature of rural-urban interactions and relationships over time and in different eras. Analysis of the architectural remains at the site, as well as the associated biological and material culture, particularly from the Hellenistic and Roman strata, all indicate strong links between the local economy and the subsistence strategies implemented by the inhabitants of Tel Zahara and the occupational history of the larger center. In particular, evidence provided from the analysis of the faunal remains from Tel Zahara strongly points to the role of this small site as a source of foodstuffs, particularly meat and possibly secondary products as well, for the markets of Scythopolis during both the Hellenistic and Roman periods.

This paper presents an overview of the results of the four seasons of excavations at Tel Zahara, with particular attention to the results of the analyses of the skeletal, faunal, and material cultural remains—ceramics, ground stone, glass, and the like—as these data illuminate and illustrate aspects of rural life and subsistence in Palestine throughout different periods. The paper also discusses the more modern activities at the site, particularly the use of the tell as a cemetery by the local Palestinian population prior to 1948 and the subsequent history of the site in the modern era.

A Middle Bronze Age Palatial Storeroom at Tel Kabri, Israel: Results of the 2013 Season of Excavation

Eric H. Cline, The George Washington University, *Assaf Yasur-Landau*, University of Haifa, and *Andrew Koh*, Brandeis University

The 2013 excavations at Tel Kabri, the capital of a Middle Bronze Age Canaanite kingdom located in the western Galilee region of modern Israel, lasted from 23 June to 1 August 2013. A highlight of the season was the discovery of an 8 x5 m palatial storeroom located adjacent to the so-called Orthostat Building in Area D–West. The storeroom was filled with nearly 40 storage jars in several different sizes, all intact but smashed in place. This may be the first time that such a storeroom with jars still present has been uncovered within a Middle Bronze palace in Canaan. In addition to being documented with traditional recording methods, the entire room, with all the jars still in situ, was recorded using terrestrial LIDAR, which provided three-dimensional images accurate to within 3 mm. The contents of the jars are currently being examined via residue analysis, and the jars themselves are undergoing restoration and conservation. When the pending full analysis is completed, we should have an insight into Canaanite palatial economy during the early to mid second millennium B.C.E. In addition, the northeastern corner of a second storeroom, located immediately to the south and filled with even more storage jars, was uncovered at the end of the 2013 season and remains to be excavated in 2015, during the next campaign.

SESSION 2D
Roman Egypt

CHAIR: *Sean O'Neill*, Hanover College

Vocation and Tradition: Personal Identity in Roman Period Karanis
Amy Yandek, Temple University

The ancient Roman domestic cult is often overlooked and marginalized in favor of state-sponsored practices, monuments, and temples; yet it can give us insights into daily life, cultural interactions, and personal identity. I recreate a selection of domestic contexts from the Roman town of Karanis to learn more about private cultic practices, thus illuminating those practices that may be far removed from what appears in the literary sources and in monumental reliefs and paintings. Karanis, an agricultural town in the Fayum region of Egypt, was the focus of excavations by the University of Michigan in the 1920s and 1930s. The site has yielded finds from the town's founding in the Ptolemaic period (ca. 250 B.C.E.) into late antiquity (fifth to sixth centuries C.E.). By accessing object records and excavation photographs, I was able to recontextualize cultic objects. I chose as case studies 10 homes dating to the Late Roman period that contained the most evidence for domestic religious practices.

Through analysis of style and subject, in conjunction with previous scholarship on the site and papyri, it was possible to gain insight into the cultural identity of

the town's inhabitants. The material from Karanis is quite illuminating in terms of creating an understanding of the personal identities of its residents. Two dominant and overlapping identities exist. One is vocational. The community's farming interests are a major theme in its religious accoutrements. The second type of identity is cultural. It is evident that most inhabitants at Karanis would have viewed themselves as Egyptian. This is not to say some would not have identified with Greek or Roman culture on some level, but this, especially in regard to the latter, is not seen in the material evidence from the homes. This is particularly interesting in that there was a large community of Roman veterans in the town, but their institutional identity did not seem to extend to their private spiritual needs. Furthermore, this study provides an example of provincial nonelite individuals living in the Roman empire, a social class oftentimes more difficult to elucidate because of a lack of textual or epigraphic evidence.

The Materiality of Writing in Karanis: Excavating Everyday Writing in a Town in Roman Egypt
Taco Terpstra, Northwestern University

The topic of literacy and "everyday writing" in the Roman world has recently received renewed scholarly attention. Given the importance of written communication for the large and complex Roman empire, this renewed attention is most welcome and warrants follow-up. This paper takes the site of Karanis in Egypt's Fayum region as a case study, investigating not only papyri and ostraca but also wax tablets and writing implements, such as styli, pens, inkwells, and palettes. Graffiti, though relatively scant in Karanis, are also discussed as the product of "everyday writing."

Instead of attempting to link particular texts to particular houses, as has been done in the past, this paper looks at aggregate numbers of finds per archaeological habitation layer to investigate the overall picture the archaeological record gives of the media and tools of writing. The data derive from the Kelsey Museum of Archaeology's finds and photographic databases of artifacts from Karanis. This Ptolemaic-Roman town was founded in the mid third century B.C.E. and survived until at least the early sixth century C.E., to be completely abandoned sometime thereafter. It was excavated by the University of Michigan during the years 1924–1935, and the Michigan excavators systematically recorded, described, and photographed the recovered artifacts according to what was at the time a pioneering archaeological methodology. A detailed study of the material from Karanis to address current questions is thus possible, despite the age of the data set.

The paper considers problems of deposition, preservation, and comparability and discusses how these problems affect our understanding of the archaeology of everyday writing in Roman Egypt. It argues that the archaeological record is skewed toward the media of papyri and ostraca, underrepresenting the use of wax tablets. Writing implements, such as pens and styli, are incorporated into the discussion as a way to help correct this distorted picture.

The Karanis Ceramic Corpus: New Approaches to Old Evidence
Thomas Landvatter, Kalamazoo College

The Fayum town site of Karanis, Egypt, is an important site for the study of settlement and household archaeology in Egypt and the Mediterranean. The excavations of the University of Michigan between 1924 and 1935, which concentrated on residential areas of the town, yielded more than 10,000 excavated vessels, approximately 1,600 of which are now housed in the Kelsey Museum of Archaeology in Ann Arbor, Michigan. Despite its size and potential importance for our understanding of Egyptian and—in particular—Late Roman to Late Antique ceramic assemblages, this corpus is understudied. In part, Karanis' outstanding papyrus finds overshadowed the pottery, but a full study of the ceramic evidence has also been made quite difficult because of the recording methodology used by the excavators. As a result, analyses of Karanis' economy and the development of the town have generally been papyrological, and Karanis' ceramic data have never been fully integrated into the broader Egyptian and Roman-period corpus. However, the recent discovery of key notebooks and several hundred vessel drawings and profiles has enabled the excavators' notations to be deciphered, spurring a renewed study of the Karanis ceramics. It is now possible to study the Karanis material on a large scale and integrate it with other corpora of Egyptian and Roman ceramics.

In this paper, I focus on the implications of the Karanis ceramic corpus for our understanding of the later development and abandonment of the site. Papyrological analyses of Karanis have generally dated its abandonment to the early fifth century C.E., given the lack of papyri from the site dating to the mid fifth century C.E. and later. Earlier analyses of the ceramic evidence in the Kelsey Museum, however, argued for an abandonment date in the sixth century C.E. at the earliest. Because of the recent archival discoveries, certain types of ceramics, such as African Red Slip Ware, amphoras, and other imported pottery, can be examined across Karanis. Plotting the incidences of these types across the Michigan excavation area, the sixth-century date for abandonment is confirmed, and it is possible to observe abandonment patterns across the site. Poor preservation likely accounts for the lack of fifth- and sixth-century C.E. papyri from Karanis, explaining the contradiction with the ceramic evidence. This paper demonstrates the utility of working with old, imperfectly excavated data and shows the possibilities for future work on this important ceramic corpus.

Isis as Genetrix: Reconsidering the Julio-Claudian Material at Philae, Egypt
Sean J. O'Neill, Hanover College

The island of Philae, home to a well-known Ptolemaic-era Temple of Isis, continued to function as a key religious center into the Roman Imperial period and beyond. As such, it served as the setting for the construction of numerous subsidiary buildings—areas usually constructed in traditional pharaonic style—long after the reigns of the last native kings of Egypt. Some of these additions to the site were incorporated into the main Isis complex, while others stood as independent, freestanding structures. The Julio-Claudian era witnessed the

creation or expansion of several such buildings, and most of these appear to be related to the honoring of either Isis or Hathor. Moreover, much of the relief sculpture decorating the walls of these Early Roman structures features scenes of the emperor appearing as a suppliant pharaoh, primarily before Isis and Hathor though also before an assortment of other Egyptian deities. While this type of Roman-era relief scene is quite common at temple sites throughout Egypt, the extremely high concentration of Julio-Claudian relief scenes at Philae seems to call for explanation, as more than half of all such images now preserved at Egyptian religious complexes are to be found at this single site. As a first step in exploring the catalysts behind this localized burst of construction and decoration under the Julio-Claudians, I present an overview of the architectural, iconographic, and epigraphic contributions to Philae created under Augustus, Tiberius, Claudius, and Nero. I also proceed to offer a collection of archaeological and visual evidence from the Julio-Claudian remains at contemporary complexes devoted to Isis or to Hathor (e.g., Deir el-Shelwit and Dendera) and at those devoted to other deities. I suggest that through this type of comparative analysis a pattern emerges in which the centuries-old association of both Isis and Hathor with Aphrodite/Venus, matriarch of the Julian clan, appears to have guided the course of building projects and relief decoration created at Philae and elsewhere under Augustus and, to a slightly lesser extent, under the other Julio-Claudians. I conclude by asserting that the unique architectural and artistic treatment of Philae, where the site's primary deity was highlighted as a pharaonic and dynastic matriarch, has strong implications for evaluation of the degree of creative independence enjoyed by native temples and their priests during the first century of Roman rule in Egypt.

Reexamining Egyptian Cult at the Red Hall in Pergamon
Andrew Findley, Washington University in St. Louis

Egyptianizing art in Roman sanctuaries is often used as convincing evidence for the presence of Egyptian cults. Such is the case with the second-century Red Hall (Kizil Avlu) at Pergamon, whose courtyards possess unmistakably Egyptianizing caryatids and atlantes. Although these courtyard figures bear signs of Egyptian influence in their postures and attire, they are unique in Egyptian art. Some of their attributes also suggest that they are more emulative than authentic. Furthermore, no cult objects were found in the sanctuary, and no inscriptions testify to a popular cult of Egyptian gods at Pergamon. Save for the evocative figures, there is no irrefutable support that ties the Red Hall to Egypt. Even though no ancient sources refer to the building, its architectural features confirm its religious function. In this paper, I question the evidence used to identify the Red Hall exclusively as an Egyptian sanctuary and argue that the building may have been a center for the Roman imperial cult.

Historical and material evidence points to an imperial cult of Hadrian at Pergamon, and the emperor has been connected by date, style, and material to the Red Hall. Aelius Aristides wrote about a Hadrianeion at Pergamon, and several nearby altars naming Hadrian Olympios indicate that this Hadrianeion could be a reference to the Red Hall. Perhaps the caryatids and atlantes at the Red Hall played a supporting role in articulating the nature of the cult, if not its precise

identification. Hadrian was linked with Egyptian styles and deities during his reign and was even associated with Sarapis in some regions. I suggest, therefore, that the cult of Hadrian at Pergamon was therefore aligned with a universalizing deity of Egyptian origin and practiced at the Red Hall. This would have allowed Hadrian to continue his role as Olympios without overtly challenging the prominent Pergamene cult of Trajan and Zeus Philios. This paper also demonstrates the importance of balancing art historical analysis and iconographic assumptions with archaeological and textual data when Egyptian imagery is present. By considering all the available information, I propose that the Egyptianizing caryatids and atlantes express only part of the Red Hall's religious identity as a building that served the imperial cult of Hadrian.

SESSION 2E
Ships, Shipwrecks, and Harbors

CHAIR: To Be Announced

Preliminary Exploration of the Oldest Shipwreck in the Indian Ocean at Godavaya, Sri Lanka

Deborah Carlson, Institute of Nautical Archaeology, Texas A&M University, *Osmund Bopearachchi*, Centre National de la Recherche Scientifique, *Senarath Disanayaka*, Department of Archaeology, Sri Lanka, and *Sanjyot Mehendale*, University of California, Berkeley

This field report presents the preliminary results of three exploratory campaigns carried out between 2011 and 2013 to evaluate the remains of an ancient shipwreck lying at a depth of 110 ft. on the southern coast of Sri Lanka at Godavaya. This project is a multinational collaboration of researchers from the Institute of Nautical Archaeology at Texas A&M University, the French Centre National de la Recherche Scientifique, the University of California, Berkeley, and the Sri Lankan Department of Archaeology, with funding from the National Endowment for the Humanities.

The shipwreck in question was brought to the attention of German archaeologists from the University of Bonn excavating the second-century C.E. harbor and monastery at Godavaya more than a decade ago, when local fishermen produced a small, rectangular, footed stone quern incised with Hindu symbols. Comparanda are known from excavations of the nearby ancient capital of Tissamaharama, and those parallels carry inscriptions in the Brahmi script that are dated epigraphically to the third or second century B.C.E.

Difficult sea conditions, strong currents, and inadequate safety equipment have precluded large-scale excavation of the Godavaya shipwreck, but three short, exploratory campaigns carried out in recent years have revealed a cargo of raw materials, including what appear to be the remains of rectangular ingots of iron and copper, as well as hemispherical ingots of greenish-blue and black glass cast in ceramic containers. Chemical analysis conducted in France suggests that the glass originated along the Tamil coast of south India.

Finished objects from the shipwreck include several querns, a single cylindrical handstone, and numerous pieces of Black and Red Ware ceramics in the form of large bowls and globular pots. Radiocarbon analysis of three wood samples conducted by two laboratories in the United States and France points to a date in the first century B.C.E. or the first century C.E.

Archaeological and literary evidence indicate that Tamil merchants in south India not only played a major role in the early history of Sri Lanka but also functioned as a kind of linchpin in the maritime silk road that brought exotic commodities from the east to Greek and Roman consumers in the west. The complete excavation and proper interpretation of the Godavaya shipwreck is of unparalleled importance for expanding and refining our understanding of the production and export of finished and raw materials in the Indian Ocean, many of which were destined for Mediterranean markets.

The Corolla Wreck Exposed: Archaeological Investigation of North Carolina's Oldest Shipwreck
Daniel Mark Brown, East Carolina University

North Carolina wreck site CKB0022, popularly known as the Corolla wreck, presented an opportunity to study early 17th-century wooden ship remains in the systemic context of early European settlement of Atlantic North America. Research questions stem from archaeological and historical observations over two years of fieldwork, course work, and thesis research. Ship construction analysis seeks to answer whether the extant remains of the Corolla wreck can offer conclusions as to its use and origins when compared with contemporary wreck sites and the archaeological record. Historical research provides possible answers as to the origin and function of this wreck and what part it played in Atlantic commerce and colonization. Combining historical documents, research, and archaeological reports, final analysis yields the greatest likely time and place of origin, as well the role played by the vessel within the Atlantic world of the 17th century.

WARWICK: A Rigging Reconstruction of an English Galleon from 1619
Grace Tsai, Texas A&M University

WARWICK, an English race-built galleon belonging to Robert Rich, arrived at Castle Harbor, Bermuda on 20 October 1619. Its mission was to bring settlers, supplies, and its captain, Nathaniel Butler, from England to the newly established plantation colony at Jamestown, Virginia. At the end of November, a hurricane drove the ship into shallow reefs and steep cliffs, where it sank.

WARWICK was fully excavated under the direction of Piotr Bojakowski and Katie Custer between 2010 and 2012. This paper presents a hypothetical rigging reconstruction based on these archaeological finds, analogous shipwrecks that have been excavated, 16th- and 17th-century ship treatises and dictionaries, and ship iconography.

Further, applications of rigging reconstructions to seafaring life are discussed, because a large part of understanding past humans is to study their activity. For

sailors, adjusting and maintaining the rigging was one of the main activities on the ship. As such, studying sailor physiology and rigging reconstructions may provide a new way to understand shipboard life and labor performed on vessels.

2013 Fieldwork in the Harbors of Burgaz, Turkey

Elizabeth S. Greene, Brock University, *Justin Leidwanger*, Stanford University, *Beverly Goodman*, University of Haifa, and *Numan Tuna*, Middle East Technical University

Archaeological investigation in the harbors associated with Burgaz, or "Old Knidos," on Turkey's Datça Peninsula have been conducted since 2011 in tandem with excavation by the Middle East Technical University (METU) of the Archaic through Late Classical habitation site. After the Late Classical period, settlement at Burgaz declines, and the site is refashioned as an industrial complex, while many of its residents relocate to Knidos at Tekir on the tip of the peninsula. Along the shore and the nearby coastal inland, built dolia and workshop or storage spaces testify to a flourishing industry of wine production. The Burgaz Harbors Project aims to conduct comprehensive survey and excavation in the four harbors associated with the site, seeking answers about the development of the town, its ports, and its integration within a broader maritime cultural and economic landscape.

In 2013, a team from Brock University and Stanford University focused on recording and excavation in and around two of the site's four harbors: Harbor 1 (L1), believed to be associated with the earliest habitation phases of the site, and Harbor 2 (L2), where built moles and towers may have served a defensive purpose. Limited marine geophysical survey and coring was undertaken for the assessment of chronological phases of the harbor environment with respect to sea-level change, as well as environmental reconstruction and the identification of abrupt events. Excavation in the harbors reveals construction built on piled rubble, designed to create a level surface for the blocks of the moles. Such leveling techniques are not uncommon in harbor construction throughout the eastern Mediterranean and are also seen on land sites nearby, where pebble and rubble foundations provide earthquake protection. Investigations in L2 this year centered not only on archaeology but also on current and future heritage management in light of increased tourism in the area.

SESSION 2F: Workshop
Undertaking Fieldwork: Funding, Permits, and the Logistics of Research Abroad

Sponsored by the AIA Student Affairs Interest Group

MODERATORS: *Maryl B. Gensheimer*, University of Maryland, and *Simeon D. Ehrlich*, Stanford University

Workshop Overview Statement

Ph.D. programs in art history and archaeology are designed to provide students not only with a strong foundation in the history of art, archaeology, and its theory

but also with the skills and knowledge to pursue independent criticism and research confidently, both as part of one's dissertation and beyond. While active participation in fieldwork and research abroad is encouraged, students never learn in a formal setting how to organize their own field projects. Instead, anecdotal advice is generally the only instruction they receive. Consequently, students are prone to encounter complications and delays in their applications for permissions. A more thorough understanding of how to organize field projects, apply for permits, and secure funding would ensure students' success with these and related tasks.

This workshop aims to introduce students to the process of organizing field research, whether archaeological or in archives, museums, or private collections. Panelists will impart advice on topics such as designing research goals for a project, the logistics of running an excavation, setting up a field school, or accessing special research collections. Techniques and strategies for compiling successful fellowship and grant applications, securing various sources of financial support, and navigating the process of obtaining excavation or research permits will also be addressed.

Our speakers—including established scholars, former representatives from funding agencies, and members and alumni of the American Academy in Rome and the American School of Classical Studies at Athens—will draw on a wealth of personal experiences in order to advise students in the best practices for undertaking research abroad. Lessons learned from different projects (artifact studies, dissertation research, excavations, and field surveys) in various countries (England, Georgia, Greece, Italy, Jordan, and Turkey) will contribute to a fuller understanding of the challenges involved in conducting fieldwork in Europe and around the Mediterranean. Students at all levels, especially those engaged in dissertation research and those looking to the job market, as well as junior faculty, will benefit from this comprehensive look at issues surrounding fieldwork and foreign study.

PANELISTS: *Michelle Berenfeld*, Pitzer College, *Steven Ellis*, University of Cincinnati, *Elizabeth M. Greene*, University of Western Ontario, *Robert Koehl*, Hunter College, *Christopher Ratté*, University of Michigan, and *Jason Schlude*, Duquesne University

SESSION 2G
Villas

CHAIR: *Francesco de Angelis*, Columbia University

Spectator Buildings in Imperial Villas: Cui Bono?
Allison B. Kidd, New York University, Institute of Fine Arts

Built during the first to fourth centuries C.E., villas owned by Roman emperors have traditionally been viewed as the epitome of private luxury in the Roman world. These imperial villas are more akin to small cities than to residential palaces, and their architectural development seems to have been the result of "polysemic" influences, in which elements of elite residences, parks, and public architecture

were combined into one complex. A study of this remarkable conflation of traditionally public and private buildings is a true phenomenon in villa architecture and is overdue for rediscussion. Specifically, this paper analyzes a little-known aspect of the Roman imperial villa: the integration of actual spectator buildings to explore to what extent imperial villas functioned as not only private but also public venues. Modern archaeologists tend to view imperial villas as exclusionary spaces where public interaction with elite members of society almost never occurred. As such, existing scholarship regarding imperial villas often favors examinations of the residential unit, while villa spectator buildings have been left largely untouched. In their analyses of the Roman domus, Riggsby and Grahame have done much to explore the notions of privacy and spatiality in the Roman world. Taking into consideration the numerous accounts from antiquity, which confirm that emperors were known to offer public entertainment at their private estates (Cass. Dio 67.1.2; Tac. Ann. 15.23; Val. Max. 9.15.1), the public nature of spectator buildings and their presence at imperial villas call into question scholastic definitions of the *pars privata* and the *pars publica*. This paper focuses on the typological architectural remains associated with urban public life—theaters, circuses, and amphitheaters—that are found in Domitian's Villa at Albanum, Hadrian's Villa at Tivoli, the Sessorian Palace in Rome, and the Villa of Maxentius. Offering a new perspective toward these four well-documented examples, this study addresses the social implications of this targeted construction, compelling us to reconsider the very nature of imperial residences, with the question "cui bono?"—who does it benefit?—lying at the very heart of the issue.

Between Rome and Babylon: Herod's Sunken Garden at Jericho

Rabun Taylor, The University of Texas at Austin

King Herod the Great sought to consolidate his reign over Judaea and his influence over the Jewish Diaspora in various and sometimes conflicting ways. His role as an enthusiastic client-king of Rome and his adoption of Roman architectural forms, techniques, and symbolism are well known. But to gain legitimacy in the eyes of the Jews, he developed a family mythology in which he claimed to be descended from a Jewish family of Babylon. It is argued here that the Sunken Garden at Herod's Third Winter Palace at Jericho, designed ca. 15 B.C.E., commingled fresh formal and symbolic ideas transmitted directly from Rome, which Herod had visited in 17 B.C.E., with a novel miniaturization of the Hanging Gardens of Babylon. A close friend of Agrippa and Messalla Corvinus, Herod brought back ideas from the Roman residences of both—Agrippa's brand-new Villa Farnesina, fronted by his aqueduct-irrigated *horti* directly across the Tiber, and Messalla's interventions at the Horti Luculliani, which may have included planted terraces conjoined by an axial theater in the manner of the Latin hillside sanctuaries at Gabii, Pietrabbondante, Praeneste, and Tibur. Herod's own garden theater, also linking two terraces, is the first and most distinct known example of tiered *horti pensiles* from the Roman period. Its cavea was planted with greenery and thus was never intended to serve as a seating area; it evoked the Graeco-Roman sanctuary theater only in formal outline. Its terraced plantings would have instantly recalled the famous Wonder of the Ancient World at Babylon, an evocative place for both

the Roman elite and for Jews. Thus did Herod skillfully merge local and regional political claims with his vaunted love of Rome, creating—as Roman aristocrats were accustomed to do—a themed miniaturization of a famous place within a villa residence. The theme would recur in his final years, when he commissioned his own tomb on a series of planted terraces halfway up the slopes of his palace fortress at Herodeion.

Villas in Roman Greece: From Center to Periphery

Maria Papaioannou, University of New Brunswick

The study and development of Roman provincial villas in Greece and the islands has until now remained on the periphery of villa studies, since this region of the empire has often been viewed as having a more urban character than the western provinces (G. Woolf, in S.E. Alcock ed. *The Early Roman Empire in the East* [Oxford 1997]). This assessment was formulated based on two main factors: first, the limitations posed by the Hellenocentric views that once dominated studies of Greek culture under the Roman empire, and in particular the study of houses and households that, according to this train of thought, retained their classical character and "were never Romanized" (S. Hales, *The Roman House and Social Identity* [Cambridge 2003]); and second, the absence of a collective work on the subject matter. In particular, the wealth of material evidence from systematic and (primarily) salvage excavations, field surveys, and the variety of publications on the topic that have appeared over the past century or so for the most part remain unknown—and unmentioned—in the scholarship on villas in the western Roman empire. These factors created the impression in scholarly circles that the villa did not exist in the Aegean region, since it was "a western not an eastern phenomenon," and "part of western aristocratic identity" (R.M. Rothaus, in P.N. Doukellis and L.G. Mendoni eds. *Sructures rurales et sociétés antiques* [Paris 1994]; A.C. Wickham, *Framing the Early Middle Ages* [Oxford 2005]).

In this paper, I present a brief survey of Roman provincial villas in Greece and the islands and highlight some of the main characteristics concerning their introduction and development. The evidence reveals that villa life became popular during the Imperial period and coexisted with traditional rural villages and farmsteads. Its popularity spread among diverse social strata and was connected to a number of political and cultural processes taking place in the Mediterranean during this period: colonization in its many forms, new economic and technical developments, trade networks, and an increase in private wealth. In particular, the villa found favor among the recently established super-elite class that was eager to conform to certain empire-wide patterns of social behavior through their ostentatious displays of wealth, status, and power; as a result a new lifestyle was created that embraced both urban and rural living. At the other end of the social spectrum, even the small to mid-sized villa owners seem to have prospered, as they renovated and upgraded their villa residences with fair regularity, much like their western contemporaries.

Gerace: New Excavations (2013) at a Late Roman Villa in Sicily
R. J. A. Wilson, University of British Columbia

The Roman villa at Gerace, situated in Enna Province about 15 km from the famous luxury residence of Piazza Armerina, was discovered in 1994 when flood-water in a drainage channel exposed part of a geometric mosaic. Subsequent small-scale excavations then and in 2007 showed that an apsed room and a cor-ridor had mosaic paving, dated to ca. 200 C.E., but other rooms were identified by surface clearance alone. Geophysical survey conducted by the University of British Columbia in 2012 demonstrated that there were several other buildings on the Roman estate, which covered some 3 ha, and also identified five kiln sites. This work was followed by new excavations in 2013, which have established that the villa is not earlier than ca. 370 C.E. and that it was destroyed by fire before the end of the fifth century; two intact African lamps were among the debris. Parts of two rooms were excavated and shown to have been service rooms, one with an earth surface (possibly a kitchen) and the other with a white mortar floor. A fragment of a bath suite belonging to this range of the villa was also identified (through its stokehole and part of the floor of a pool, suspended on pilae), but the main residential part of the villa awaits excavation. Alongside the baths, a build-ing, identified by geophysical work in 2012 to have been more than 50 m long, was partially excavated and found to be substantially built and paved with still-intact stone flooring. It was probably a granary, built ca. 425/50 C.E.; soon after it sud-denly collapsed, probably in the earthquake recorded by Libanius of 361/3 C.E. Of interest is the use by its architect of the Ionian (or "Samian") foot as a unit of measurement—evidence for the survival of Greek building traditions into con-servative Late Roman Sicily. Among the finds were 99 tile stamps, many bearing the name of Philippianus, who must have been the owner of the estate at the time of the building of the Late Roman villa (the granary roof tiles have no stamps). Some of the stamps also depict prize racehorses accompanied by crown and palm branch. This suggests that Philippianus may have been raising horses on his estate for the circuses of the Roman empire, so providing archaeological testimony for an industry hinted at by contemporary authors such as Vegetius, who comments on the high reputation of Sicilian circus ponies.

Creation of a Creole Aristocracy: Cultural Change and the Afterlife of Two Gallo-Roman Villas.
Elizabeth Bevis, Johns Hopkins University

The late fourth century C.E. in Gaul is often characterized as a time of extreme prosperity and political influence for the province. Gallic aristocrats received some of the highest honors Roman citizens could attain, and great villas were renovated or built anew. In contrast, the following century is characterized as the stereotypi-cal "decline and fall," in part because of the abandonment of many of those same villas. By the late sixth century, Gaul and its aristocracy had become something demonstrably different from Roman Gallia, and yet Roman influence was still pal-pably present in the young Merovingian kingdoms. These two centuries (from the late fourth to the late sixth) have produced some of the most complex and

difficult-to-reconcile bodies of archaeological, artistic, and literary evidence in Roman history.

Reexamination of early excavations and the growth of rescue archaeology in France since 1970 have dramatically increased the number of Gallo-Roman villas known to have been inhabited into the fifth and sixth centuries. Therefore, the time seems right for a close consideration of how cultural change happened in Gaul on a local level. This paper investigates one part of this change, the local performance of aristocracy, by considering instances of cultural change and hybridity visible in two Roman villas in northwestern Gaul that were continuously inhabited through the Merovingian period. The material culture of both villas is analyzed in reference to postcolonial theory, in particular notions of "creolization" developed by Joyner in the context of the American south and the concept of entanglement developed by Michael Dietler in his *Archaeologies of Colonialism* (Berkeley 2010).

The material remains of the villas demonstrate juxtapositions of disparate cultural elements that constitute an important aspect of the creation of aristocratic presence in each specific location. Furthermore, the material culture of these villas shows that references to Roman culture were still important for local claims to elite status, but the way those references to Roman heritage were expressed were not necessarily adopted unconsciously by individuals interacting with their own culture. Instead, the Roman past is part of a more complex conversation with other referents, such as the contemporary artistic milieu of Bordeaux or the necessities of local topography.

SESSION 2H
Greek Iconography

CHAIR: *Tom Carpenter*, Ohio University

The Boeotian Shield: A Reassessment
Louis J. Magazzu, URS Corp.

The Boeotian shield has long been held to be an archaizing element in Greek archaic and classical art. Most scholars consider its presence in mythic scenes to be an anachronistic reference to the familiar Dipylon shield of earlier Geometric art, which is interpreted as representing an Early Iron Age shield made of oxhide and wood or wicker. A small minority even suggest that the Geometric type itself is a bastardized memory of the Bronze Age figure-of-eight shield. In this view, these shield types are fictional references to a heroic past. Another minority of notable scholars would suggest that the use of the Boeotian shield was contemporary with its depictions in media, such as Attic black-figure fine wares or Boeotian coinage. These scholars oppose the consensus that the introduction of hoplite armor beginning in the late eighth century B.C.E. ushered in a period in warfare dominated almost exclusively by heavily armed hoplites.

There is no denying the Boeotian shield's occurrence in mythological scenes from archaic Greek art, but does its depiction in clear scenes from the Trojan cycle, an exploit of Herakles, or other episodes from mythology necessitate that all de-

pictions of the shield indicate a mythological subject? Hoplite shield are depicted in myth scenes; likewise, Corinthian helmets, greaves, chitons, and the petasos are just a few items that were in use during the Archaic period and are seen in contemporary mythic art. None of these has been doubted as generally heroicizing, so why single out the Boeotian shield as particularly heroic?

The theory that warfare in the Archaic period was the preserve of the heavy infantry would prohibit the use of lighter hide shields, and it has led scholars to dismiss the reality of the Boeotian shield a priori. Likewise, its dismissal because of the lack of finds that might be identified as fragments of such a shield would be clearly positivist, as wicker, wood, and untanned oxhide survive so rarely in Aegean environs. Therefore, a thorough iconographic analysis examining a wide variety of media offers the single best chance at assessing the possibility of the Boeotian shield's existence into if not throughout the Archaic period, as well as at attempting an interpretation of its potential place within contemporary Greek culture.

Unrecognized Coots
Joseph Cotter, Penn State

Art historians confess to the difficulty of distinguishing between geese, swans and ducks in vase representations. It is even more difficult to differentiate between ducks and coots. This paper argues that coots, marked by Pliny as *aquaticarum laudatissimae*, more than 10,000 salted of whom were mentioned by Athenaeus, who were twice eroticized by Aristophanes (*Av.* 565 and *Lys.* 772), and whose name was equated with Phales in Hesychius' gloss of "Φαληρίς" (in the manuscript reading), ought to enter the discussion.

Amyx 1996 calls attention to "the remarkable scene on the kotyle Corinth C-62-449, where, on the same frieze with a standing swan or goose, a strange fish-man is represented stroking the throat of a dolphin." Steinart 2007 calls the prominent bird a "duck" and the swimmer with a prominent penis the sea god Melicertes/Palaemon, but this identification explains neither the penis nor the symbolic waterfowl. The Dionysiac connection of this wine vessel would be better explained if Phales, who traveled to Greece as the celebrated companion of Dionysus (*Ar. Ach.* 263–278), was the swimmer and the bird a coot.

In its first publication (*Arch. Eph.* 1883), a mysterious water bird, appearing prominently in a Bacchic ritual, is identified as a Χὴν; Todisco 2006 had doubts, "un volatile (oca?)"; and the Beazley Archive (9022356} describes it as a "duck." Again, a coot would fit the scene better.

Ducks were quite common on Greek farms and as pets of children, but they were of no interest in Greek or Etruscan mythology. Hoffmann and Csapo argue on sociological grounds that a macho rooster was the ancestor of the phallus birds in Greek art. Bérard associates them with a Dionysian water ritual, and Boardman suggests a "deviant swan" on the basis of its "long ovoid" body, phallic neck, and beak, both mythological and aquatic associations. Against this visual argument, the coot's Greek name and its apparent connection via a folk etymology with Phales seems to have given it the punning role in Greek culture that the cock plays among English speakers and to have contributed to the creation of the phallus birds.

In the Presence of Bacchus: The Death of Orpheus on Athenian Red-Figure Vases
Kara K. Burns, University of South Alabama

The earliest allusions to the Orphic Mysteries and their association with those of Bacchus can be found in the art and literature of Greece from the fifth century B.C.E. The first extant literary reference is by Herodotus (2.81), who mentions Orphic ritual while describing the Egyptian religious prohibition against wool in temples and burials. He says that this belief is also found in a "ritual called Orphic and Bacchic" (Hdt. 2.81 [translation by Godley]). The exact association between the Orphic and Bacchic religions in this passage is unclear. Are they two different religions that share a commonality, or is Herodotus referring to one religion that is called both Orphic and Bacchic? By the first century B.C.E., Diodorus of Sicily (3.65.3–6) declares that the Bacchic Mysteries are also called Orphic, but was this true in the fifth century B.C.E? Overlooked in past scholarship exploring the association between the Orphic and Bacchic Mysteries in the Greek Classical period are four Athenian red-figure vases produced between 460 and 430 B.C.E. that combine events surrounding the death of Orpheus with Bacchic iconography. This paper argues that these vases provide an artistic link between Orpheus and Bacchus, thus supporting the idea that the two religions were, if not already united, closely associated at the time Orphic religion began appearing in the art and literature of Greece.

Observations on an Athenian Bronze Vessel Workshop of the Fourth Century B.C.E.
Beryl Barr-Sharrar, Institute of Fine Arts, New York University

Although it is without known provenance, a large fourth-century bronze calyx krater, recently repatriated to Greece from a private collection in the United States, yields significant insight into workshop practices in Athens. The overlaid silver garland of grape leaves encircling its body proves the long-held but frequently challenged assumption that extruded clay relief garlands on fourth-century Attic black-gloss calyx kraters emulate contemporary metal prototypes. Further, as demonstrated in detailed photographs, the grapevine leaves are identical in size and all features to those in the silver garland on the walls of the Derveni krater, a replication close enough to suggest production in the same or a very closely related mold. Stylistic similarities of a figure on the Derveni krater to all four of the individually hammered maenad masks at the roots of the handles on the calyx krater further suggests a close relationship between the two bronze vessels. Manufacture of the bronze calyx krater in the second quarter of the fourth century is indicated by comparison of its profile to those of both Attic black-gloss and Attic red-figure calyx kraters dated to that time. The affinities connecting the two bronze kraters not only reinforce the author's date of the Derveni krater to the same period but also suggests the manufacture of both vessels in the same Athenian workshop.

SESSION 2I
Making Heritage Matter: Case Studies

CHAIR: *Robert J. Littman*, University of Hawaii at Manoa

Preserving China's Past: A Century of Sino-American Collaboration in Archaeology and Cultural Heritage Preservation
Clayton Brown, Utah State University

On 14 January 2009, the United States and China marked the 30th anniversary of the establishment of diplomatic relations between our two countries by signing a landmark memorandum of understanding on cultural heritage protection. This agreement paved the way for a broader strategic and economic dialogue initiated 10 weeks later, a forum that now serves as the centerpiece of our bilateral relationship. Virtually unknown, however, are the roots of this agreement, which go back a century. With the collapse of China's last dynasty in 1911 and the loss of central authority that followed, a vulnerable China became prey to Western museums and art collectors who both purchased and plundered its antiquities, many of which are housed today in Western museums and private collections. This legacy of cultural imperialism and ongoing disputes over cultural property rights continue to plague China's relationship with Western nations. With the establishment of the Republic of China in 1912, however, the U.S. government, in conjunction with the AIA and the Smithsonian Institution, sponsored a series of expeditions to China to pioneer with the Chinese government and academic community both archaeological research and systematic monument and artifact preservation. This collaborative venture resulted in numerous joint Sino-American excavations and exhibitions, including the landmark excavation of the Shang dynasty capital at Anyang by the Academia Sinica, the establishment of China's first national museum, the establishment of an academic curriculum in archaeology, and China's first antiquities protection law. While this story is not well known in America or China, it became the foundation for our current bilateral agreement and provides lessons on both the benefits and challenges of international cultural heritage management.

Politics and Archaeology in Postunification Sicily (1861–1915): New Perspectives from Records
Antonino A.C. Crisà, University of Leicester

Past and recent works by Marconi (*L'attività della Commissione di antichità e belle arti in Sicilia.* Pt. 1, 1827–1835 [Palermo 1997]), Equizzi (*Palermo, San Martino delle Scale: La collezione archeologica* [Rome 2006]) and Crisà (*Numismatic and Archaeological Collecting in Northern Sicily During the First Half of the Nineteenth Century* [Oxford 2012]) have stimulated interest in the history of Sicilian archaeology across the 18th and early 19th centuries. These studies have provided valuable data on antiquarian collecting and archaeological site protection before the institution of the Kingdom of Italy. However, scholars still neglect the history of Sicilian archaeology between Italian Unification (1861) and the First World War (1915), mainly because of a lack of published records.

Fortunately, new archival research, including my own in Rome and Palermo, is starting to generate important information, with records reporting on excavations, archaeological site protection by custodians and local authorities, and the activity of the regional and state bodies, notably the National Museum of Palermo and the Ministry of Public Education in Rome.

The main scope of my paper is to outline a largely unrecognized set of connections between politics and archaeology in postunification Sicily, focusing on targeted key case studies. First, I assess the figure of Antonino Salinas (1841–1914), the undisputed protagonist of Sicilian archaeology of the time and the director of the National Museum of Palermo from 1873 to 1914. On his death emerged Paolo Orsi (1859–1935), who had just started his brilliant career in eastern Sicily. Fresh archival records prove how Salinas grounded his power in a dense network of acquaintances among local landowners. He allowed them to possess antiquities on their properties in order to obtain permission to explore and excavate on their lands in the province of Messina.

Second, documents reveal how Domenico Sciacca (1844–1900), a respectable politician and the undersecretary of the Ministry of Agriculture and Commerce in Rome, played a leading role in archaeology in northern Sicily during the late 19th century. As a native of Patti (Messina), the baron Sciacca owned extensive land on the archaeological site of Tyndaris. Prominently, he gave Salinas special permission to dig on his property, enabling him to discover the ancient necropolis in 1896, as records testify clearly.

Cultural Property Protection and Military Necessity at a Crossroads: The Allied Bombing of Pompeii, August to September 1943

Nigel D. Pollard, Swansea University

This paper examines circumstances under which Allied bombs hit the archaeological site of Pompeii in August to September 1943. The damage caused was substantial, as set out recently by Garcia y Garcia. However, the main aim of this paper is to set this event in its military context and in the development of the Monuments, Fine Arts, and Archives subcommission (MFAA), the monuments protection organization within the Anglo-American armed forces.

Drawing on wartime documentation from the U.S. Air Force Historical Research Agency, U.K. National Archives, and The Aerial Reconnaissance Archives, I conclude that the bombing took place entirely in error because of the limitations in technology and bombing techniques that are outlined in the paper. Contrary to some contemporary reports (whose origin and motivation are discussed), the intended targets were not German troops or supplies in Pompeii itself but (in August) strategic targets in Torre Annunziata and (in September) German road and rail traffic involved in the counterattack against the Salerno beachhead.

The MFAA organization was still in development in mid to late 1943, and had little input into the decision-making process that led to this error. While maps and lists of cultural sites were available to the "Monuments Men" (my paper provides a brief overview of these resources), they were not widely distributed at that time. A review of the MFAA's role and deficiencies was undertaken in late 1943, culminating in Eisenhower's famous December 29th Allied General Order on protection

of monuments. Subsequently, the MFAA had greater access to the command structures of Allied air and land forces, and greater resources were available to identify and preserve cultural sites in the war zones.

However, later documentation outlining restrictions on bombing near cultural sites, as well as events at Monte Cassino, Castel Gandolfo, and elsewhere, reveal the tensions between military necessity and the preservation of cultural sites. The critical military situation at Salerno in September 1943 made it unlikely that even an enhanced MFAA organization and better monument-protection policies would have had a significant impact on the bombing of Pompeii.

Institutional Diversity: Displaying Romans and Foreigners at the Seattle Art Museum

Sarah M. Berman, Seattle Art Museum

This paper delves into one regional museum's attempt to display the diversity of an empire.

The Seattle Art Museum collects art from across time and cultures, and its Roman-period holdings reflect the overall makeup of the collection. Scale, medium, geography, and intent vary widely within the museum's Roman collections. From these objects, the current museum display seeks to tell a coherent story of a hugely diverse culture—in fact, many cultures.

Installations and approaches of other North American museums are considered in this paper, including mid-sized museums like the Seattle Art Museum, as well as small and large institutions. Lessons learned from displays at other museums, as well as prior installations in Seattle, are incorporated into the current presentation.

How is the geographic reach of the empire expressed to museum visitors? How are the various identities of those living within the Roman world conveyed through the museum display? How are labeling, terminology, and object adjacencies used to create meaning for the visitor? How can this display communicate the relevance of ancient worlds to contemporary viewers? These are the questions that guide the installation as well as this paper.

SESSION 2J
Poster Session

Recent Advances in Radiocarbon Dating of Ancient Roman Mortar and Concrete

Asa Ringbom, *Abo Akademi*, Turku, Finland, and *John R. Hale*, University of Louisville

Over the past three decades, significant progress has been made in using radiocarbon analysis to obtain absolute dates for inorganic substances from archaeological sites, including lime mortar and concrete. Recent advances in this field now allow the accurate dating of Roman concrete constructions even in the absence of historical records, associated inscriptions, or datable artifacts. The new method can provide dates prior to extensive excavation and can also identify later additions and repairs to existing walls, pavements, tombs, drains, and other features.

During earlier attempts to date Roman and other historic mortars using radio-carbon analysis, small chunks of mortar or concrete from archaeological sites were ground to a fine powder, separated into a series of samples, dissolved in acid, and then monitored so as to date the radiocarbon released from each sample. When limestone is fired in kilns and then slaked with water to make builder's lime, carbon dioxide derived from the atmosphere is bonded with the material, thus imprinting a radiocarbon signature. Some additional radiocarbon may be fixed in the mortar during the process of mixing and then hardening the concrete—a process that usually takes place shortly after the manufacture of the lime itself. Thus, the radiocarbon fingerprint for the year of manufacture is present within most Roman concrete and mortar samples.

The recent breakthrough stems from experiments with the individual components of the ancient concrete. The concrete samples were from structures that had been securely dated by historical documentation. During these experiments, laboratory analysis showed that the most accurate dates were provided by small lumps of lime that had survived intact the ancient crushing process and the mixing with the aggregate. These lime lumps have been found to yield consistently accurate dates for structures from the Roman period on up to the Middle Ages and Renaissance.

Especially important for archaeologists working on Roman sites is the accuracy of the new method on samples in which the lime mortar was mixed not with beach sand but with volcanic pozzolana, a practice common in the area of Rome and the Bay of Naples and also found as far away as Caesarea Maritima in Israel. Previously, such pozzolana construction was resistant to accurate radiocarbon dating. The new method has proved successful on pozzolana concrete except on samples from Pompeii, where the catastrophic eruption of Mount Vesuvius in 79 C.E. seems to have permanently altered the chemistry of the building materials.

Where's the Loo? An Analysis of the Spatial Distribution of Private Latrines in Pompeii
A. Kate Trusler, University of Missouri

The location of sanitation facilities has important social and cultural ramification for use and management of waste. Several seasons of fieldwork have led to a more precise understanding of private latrines and downpipes in Pompeii. The location of residential latrines has been mostly attributed to kitchens, but this study found that latrines are also commonly located near entrances and dedicated latrine rooms. Businesses' sanitation facilities are closely associated with downpipes and frequently located in the front room of shops. The patterns are statistically tested.

Petrographic and Chemical Analysis of Barbotine Ware from Kommos
Amie S. Gluckman, Temple University

A sherd of barbotine ware from Middle Minoan IB, found at the site of Kommos on Crete, was analyzed by a range of techniques, including scanning-electron microscopy, energy dispersive X-ray spectroscopy, and thin-section petrography. This scientific analysis was conducted to obtain information about the ceramic

technologies employed during the sherd's creation. The study had several specific objectives that contributed to the larger goal, among which were: discovering the firing temperature of the sherd and the atmosphere in which it was fired, identifying the raw materials exploited in the ceramic material (clay and temper), and indicating their possible source within the local area. The micromorphology and vitrification microstructure of the sample was examined by scanning electron microscope (SEM). The sample was also broken up into subsamples, which were each refired in an oxidizing atmosphere at temperatures ranging from 650° to 950° C, at 50° intervals. The subsamples were studied under the SEM in comparison with the original sample; the degree of vitrification and equivalent firing temperatures were then assessed to determine the original firing temperature. Studying the original sample using SEM with linked energy dispersive spectrometers provided a combination of textural and mineralogical data. Combined with that, a thinsection of the original sample was studied by petrographic microscope in both plane and cross-polarized light. This method of analysis enabled a characterization of the clay fabric. Inclusions and voids were recorded, as were details of surface modification and decoration. This particular project forms a further step in the detailed study of key production locations and firing structures in the Minoan world that increases our understanding of Bronze Age ceramic technology. With that in mind, this analysis is intended to become a part of a more comprehensive study of the pottery group.

A Large Assemblage of Medieval Coarse Wares from the Sanctuary of Zeus at Nemea

Kristina Whitney, University of Nebraska–Lincoln, *Effie Athanassopoulos*, University of Nebraska–Lincoln, and *Kim Shelton*, University of California, Berkeley

The site of the Sanctuary of Zeus at Nemea has a history that stretches from the prehistoric to the modern period. Excavations by the University of California, Berkeley, have uncovered several deposits from the Medieval period of habitation, but little of this material has been published. This project is undertaken as part of the research and publication program of the Nemea Center for Classical Archaeology. Our goal is to contribute to a better understanding of the daily activities of the medieval farming community at Nemea. Previous excavations revealed that medieval farming activities were extensive near the sanctuary: farming plots, an irrigation ditch, agricultural implements, ceramics, and coins have been found throughout the area. In addition, walls and a few houses built with reused ancient blocks were excavated.

Quantitative data have been collected from the largest medieval deposit at the site, which was recovered from a trash pit located to the northeast of the Early Christian basilica. The basilica contained several burials dating to the 12th and 13th centuries along with burials of the Early Christian period. The deposit consists primarily of coarse wares. After two study seasons, more than 30,000 sherds have been counted, together weighing roughly 280 kg. These figures represent about 25% of the deposit. The pottery is sorted and classified according to vessel shape, part of vessel, fabric, and decoration. After sorting, each group of sherds is counted and weighed. These methods permit us to document the variability

of vessel shapes and estimate the total number of vessels present in the deposit. Complete vessels recovered from other areas of the site provide the weight figures for calculating the equivalent number of vessels in this assemblage.

Our preliminary results indicate that this is an unusual trash pit, both in terms of size and composition. Water jugs, in a variety of sizes, are the most common type of vessel. Very few other shapes are represented. A small number of large flasks for drawing water out of wells are also present. The predominance of vessels for transporting water and the proximity of this deposit to the basilica provide clues as to the activities that took place here, possibly cleansing rituals associated with the burials. This deposit also underlines the significance of this area of the site in the daily life of the medieval community at Nemea.

Effigies by Hand: A Distinctive Terracotta Cinerary Urn Group from Chiusi
Theresa Huntsman, Washington University in St. Louis

This poster analyzes a distinctive group of Etruscan cinerary urns of the Hellenistic period produced at Chiusi, Italy, and reconsiders the relationship between artistic form, portraiture, and personal identity in Etruscan funerary practice. Scholarship has focused on Hellenistic figural urns either as predecessors to veristic Roman portraits or as manifestations of Greek influences in Etruscan art. Consequently, the immediate role of cinerary urns in their original contexts has yet to be fully appreciated. This group of hand-formed terracotta urns with figural effigies provides a unique case study, illustrating the importance of funerary contexts for understanding Etruscan artistic priorities and how they relate to concepts of the body and identity in the afterlife.

There are more than 800 known examples of Hellenistic Chiusine cinerary urns with figural lids. The earliest examples are large and exclusively in stone, while the later, smaller terracotta examples were mass-produced in workshops from molds. A group of at least 60 terracotta urns with lids in the form of reclining banqueters produced in one workshop, however, are freely formed by hand. Reliefs on the boxes often consist of thumb-applied clay blobs and irregularly positioned figures or creatures, and unlike their moldmade counterparts, they do not seem to have been painted. The lid figures are significantly out of proportion, characterized by their large, bulbous heads, abbreviated bodies, and visible hand-smoothing lines. The visual disjunction between the hand-modeled examples and a more consistent body of "naturalistic" molded urns is jarring to the modern eye, but this was not necessarily so for the Etruscans who would see them in a family tomb.

While the production value and level of technical refinement appear to be lower than those of the moldmade examples, this paper proposes that the stylistic qualities of these urns intentionally preserve and translate techniques of stone sculpture into terracotta, thereby associating them with older, more costly alabaster urns. In a family tomb context, the later terracotta effigies would visually tie a later generation with the stone effigies of its ancestors. These ceramic "portraits" were not necessarily a cost-effective type of production for individuals of lesser means, but rather they were highly valued, dynamic components of an active funerary tableau, transforming and incorporating the deceased into a full-fledged member of a revered, celebrated ancestry.

American Research Center in Sofia Field School Excavations at the Site of Heraclea Sintica near the Village of Rupite, Southwest Bulgaria

Emil Nankov, American Research Center in Sofia, *Hallie Franks*, New York University, and *Lyudmil Vagalinski*, National Institute of Archaeology with Museum at the Bulgarian Academy of Sciences

This poster presents the results of the second season of the American Research Center in Sofia's (ARCS) field school excavations at the ancient Macedonian site of Heraclea Sintica, located near the village of Rupite in southwest Bulgaria.

An inscription discovered in 2002 preserves the granting of city status to the Heracleans under Galerius and definitively identifies the site at Rupite as that of Heraclea Sintica, a city previously known from ancient literature and coinage. Located at the juncture of the ancient Strymon and Pontos Rivers, Heraclea Sintica was the second city of the Roman province of Macedonia Prima; it was likely founded in the Early Hellenistic period and occupied through the late fourth century C.E. The ARCS field school joins the excavations of the National Institute of Archaeology with Museum at the Bulgarian Academy of Sciences, underway since 2007.

The 2013 ARCS excavations concentrated on the area adjacent to a Late Roman terracotta workshop, hoping to clarify phases of occupation, urban layout, and the use of urban space. This season's excavations concentrated on the northwest corner of a stone building of uncertain function and forwarded our research goals through the exposure of two occupation layers, deposited in rapid succession over a major destruction layer. This sequence promises to add nuance to the current understanding of the occupation sequence, which has been previously divided according to four major periods. While conclusions are still preliminary, finds have confirmed the prominence of local terracotta production and have revealed, for the first time, the presence of high-quality interior decoration, including mosaics, painted plaster, and marble ornament.

"Crying Fowl": Reevaluating the Role of Poultry in Roman Dietary and Ritual Contexts

Michael MacKinnon, University of Winnipeg

A synthetic investigation of domestic fowl in the Roman Mediterranean context—-linking archaeological, ancient textual, and osteological data sets—-provides a more nuanced assessment of this important animal in Roman life. More critically, however, the connection of these various lines of evidence calls into question untested assumptions and generalized notions made about poultry in Roman dietary and ritual practices.

Available zooarchaeological evidence collected from current and previous excavations (more than 300 sites in total) indicates a general Mediterranean introduction of domestic fowl around the eighth century B.C.E., but it is not until Roman Imperial times that larger ventures to raise, breed, and manipulate poultry birds first occur. Bone metric data show great range suggestive of various types; not surprisingly, such variation proliferates across sites in more heavily populated urban areas at this time (including excavated sites at Rome, Pompeii, Ostia, Carthage, and Athens)—-places that correspondingly have the biggest markets for poultry. While certainly fowl were raised on rural and suburban farms, with schemes for their care and production outlined by agricultural writers such as Columella and Palladius, it appears far more were likely kept and raised at the household level in Roman cities and villages, as judged by the ubiquity of their bones and the consistency in age and sex parameters, across such locations. Moreover, fowl figure somewhat regularly across different status and ethnic categories among sites. This key concept of urban production of domestic fowl, and their consumption among multifarious social classes, is important to stress in our reconstruction of ancient Roman diets and economics.

Domestic fowl also factor regularly in Roman ritual contexts, particularly as funerary offerings. Zooarchaeological evidence from more than 30 cemetery sites in Italy, Greece, Tunisia, and France refutes assumptions made between sex of the deceased and sex of the bird (hen/rooster for female/male, respectively) and questions any clear link between higher-status graves and greater frequency of funerary food offerings that include domestic fowl. Evidence suggests that domestic birds were one of the few animals readily available and affordable for sacrifice. They represent a neat "packaged" meal for the deceased as well as a convenient "family-sized" feast or offering that might be presented and consumed by a small familial congregation of mourners. Overall, therefore, more significance to aspects such as availability, affordability, household gathering, public display, and quick recognition of offering may underlie the use of poultry in Roman funerary contexts.

From Broken Sherds to Cooking Technology in Pompeii: An Interdisciplinary Analysis of Ceramic Assemblages from a Working-Class Neighborhood
Luana Toniolo, University Ca' Foscari of Venice

Since 2005, the Pompeii Archaeological Research Project: Porta Stabia (PARP:PS), directed by S.J.R. Ellis (University of Cincinnati), has shed new light on two Pompeian insulae (VIII.7 and I.1). The pottery recovered during the past eight years of excavations spans from the fourth century B.C.E. into the first century C.E. and offers a substantial data set for close examination of the development of a Roman working-class neighborhood.

This paper illustrates an interdisciplinary approach to the study of material culture, which has made possible a more nuanced, multifaceted image of the Pompeian working class and how they constructed and manifested their social identities and relationships. The ceramic assemblages from VIII.7 and I.1 are first analyzed with a traditional, chronological approach that permits, for the first time in Pompeian studies, the reconstruction of a full typological classification of cooking and coarse wares. Subsequently, the data are situated within a conceptual framework that combines correspondence analysis, principal component analysis, and other types of statistical multivariate analysis with visualization tools such as scatterplots, biplots, and radial graphs to highlight quantitative and qualitative associations in the archaeological record. Finally, actor-network theory is applied to interpret patterns of consumption and the resulting demarcation of social status among the residents of the insulae.

To provide a full picture of Pompeian working-class consumption patterns, the present ceramological study is informed by other classes of materials, such as glass and metal artifacts. The quantitative and qualitative associations between ceramics and other domestic objects are fundamental components in the expression of social status, and by studying the interrelationships between various classes of finds it is possible to reconstruct the dynamic social contexts in which they functioned. Further, the materials from the PARP:PS excavations are especially valuable because they permit a reconstruction of not only Roman dining habits but also cooking technology, both of which are inherently social, deeply rooted cultural activities. A selection of specific ceramic assemblages from a kitchen (in VIII. 7) is then presented to demonstrate the composition and usage patterns of the "functional unit" employed by a single domestic group. Thus, through an interdisciplinary analysis of pottery assemblages from the PARP:PS excavations, this paper offers a new approach to the study of Roman foodways.

The Hadrian's Villa Project: Studying the Impact of Three-Dimensional Virtual World Technology in the Undergraduate Classroom

Lynne A. Kvapil, Butler University, *Lee Taylor-Nelms*, Booz Allen Hamilton, and *Bernard Frischer*, Indiana University

This poster presents the results of the Hadrian's Villa Project, a study investigating the effectiveness of using three-dimensional virtual world (3DVW) technology in undergraduate art history, archaeology, and classics courses. From 2006 to 2012, the Virtual World Heritage Laboratory at the University of Virginia and the Institute for Digital Intermedia Arts at Ball State University created a highly accurate 3DVW of Hadrian's imperial villa at Tivoli (built between 117 and 138 C.E.). An accompanying research study, funded by the National Science Foundation, hypothesized that the virtual world technology would have a significant impact on students' learning and on their perceptions of time, space, and structure in the ancient Roman world. This study measuring the value added by 3DVW technology in courses dealing with the material remains of the ancient world is the only one of its kind to date.

The research study was deployed at two universities over four semesters. Students at the University of Virginia and Xavier University were asked to solve ancient-world problems in the personae of historical Roman figures, including the emperor Hadrian and other residents of the villa. The problem-solving activities required students to consider a range of issues, including questions concerning use of space, movement between and within structures, and the architecturally reflected social demarcation of space. One problem, for example, asked students to plan for the arrival of hundreds of visiting senators who needed to bathe before meeting with the emperor Hadrian. Students had to consider various methods of moving large numbers of dignitaries through the public sections of the villa, the social implications of their choice of bathing facility, the resources necessary to fuel the baths, and the overall feasibility of their plan. Depending on the assigned problem, solutions were presented in two-dimensional environments with illustrative slides, or they were delivered in the virtual world of the villa by students using avatars.

Quantitative and qualitative data on knowledge retention, problem solving, and the effective use of the 3DVW were collected through blogs, surveys, and quizzes. Analysis of the data shows that, while several variables affected students' experience with the 3DVW, it had an overwhelmingly positive impact on their understanding of the villa as it would have existed in the time of Hadrian. The results of this unique study confirm the value of using 3DVW technology in the classroom so that students can experience ancient art and architecture in its original and intended context.

Recreating the Gods of the Parthenon Frieze in Three Dimensions
Rui Nakamura, Tokyo University of the Arts

In this paper, I propose to examine the religious attitudes toward the gods of fifth-century Athens through three-dimensional models of the 12 gods of the Parthenon's east frieze. The models were created by student sculptors at Tokyo University of the Arts as a part of the Parthenon Project Japan 2011–2014. Also, using computer-graphics technology, the models are positioned with the Peplos ceremony (a dedication ceremony to the goddess Athena), thus representing "the assemblage of gods" in space and offering an insight into the religious mind of ancient Athenians. The models were displayed at the "Parthenon Now" exhibit at the British Museum (November 2012 to May 2013), and they were officially accepted as an art resource at the British Museum in June 2013.

On the east frieze of the Parthenon, the gods have two roles, receiving the Panathenaic procession and attending the Peplos ceremony (a dedication ceremony to the goddess Athena). The way they are represented on the east frieze signals a change from their symbolic presence in the Archaic period to their tangible, physical presence in the High Classical period. The anthropomorphic image suggests the mode of interaction between gods and mortals. The gods have corporeal specificity according to their religious functions. They appeal to the perception of the viewer, as revealed by the three-dimensional reconstruction.

I would argue that their physical representation in space has not been discussed from the viewpoint of the artists. According to my analysis, the gods of the Parthenon frieze are represented with concern for the viewer's perspective and with attention to anatomical details. With respect to the first point, each slab of the Parthenon frieze has its own viewpoint; the 12 gods are arrayed across the three marble sections as they would be seen from the shifting viewpoints of a moving viewer. With respect to the second point, the bodies of the gods are given specific details that create a sense of tangible presence, a result of the artists' virtuosity, and the naturalistic images are seen as a living embodiment of the divine.

Based on the three-dimensional model, I propose that the gods of the Parthenon frieze are represented from a moving viewpoint, an idea reinforced by anatomical details that give these figures of the Classical period a more realistic and engaging presence.

Cosa Excavations, 2013
Ann Glennie, Florida State University, *Allison Smith*, Florida State University, and *Sophie Crawford-Brown*, University of Pennsylvania

In June 2013, fieldwork resumed at the Roman colony of Cosa under a joint project carried out by Florida State University, Bryn Mawr College, and the University of Tübingen. The program had two goals: mapping the city and excavating some of its most conspicuous remains adjacent to the forum in grid squares VI/VII-D.

The initial survey executed by Frank E. Brown for the American Academy in Rome recognized that VI/VII-D contained a bath of unknown size and date. While recent scholarship has dramatically furthered the understanding of Roman bathing facilities, gaps remain. Excavation of Cosa's baths may provide insight into

architectural innovation, city planning, engineering, hydraulic systems, and even social practice.

Coupled with mapping and geophysical surveying, excavation occurred in four primary locations within the bath block, including the laconicum, the western cistern, the facade, and the eastern terminal wall. The extensive complex can now be shown to front on three streets and to exhibit the distinct hard mortared limestone rubblework associated with public buildings of the second century B.C.E. at Cosa as well as the *opus latericium* characteristic of the high empire.

Although the material unearthed this season dates largely to the Imperial period, there remains a strong possibility that Cosa's original bath block dates to the second century B.C.E., when the town underwent a period of increased prosperity following the arrival of a new wave of settlers. If subsequent seasons reveal such material, the Cosan baths will represent one of the earliest examples of such architecture on the Italian peninsula.

A Distributional Approach to the Ugaritic Economy

Christine Johnston, Cotsen Institute of Archaeology, University of California, Los Angeles

In the Late Bronze Age, the kingdom of Ugarit lay as a nexus within the supraregional Mediterranean trade system, in which products of spatially disparate origins were accumulated and dispersed. Its intermediary role as a facilitator of exchange is attested by both the proliferation of imported goods and the substantial corpus of surviving documents. The importance of Ugarit within the larger exchange network is evident; however, questions remain as to the nature of the local economic structure and the direct integration of extrapalatial participants. Similarly uncertain is the reconstruction of a marketplace operating outside royal jurisdiction, providing independent access to imports and luxury goods. As a supplement to previous textually based analyses, this paper proposes to expound on these issues through an examination of domestic small finds with the application of a distributional approach.

The distributional approach is an archaeologically based framework for the analysis of material distribution and marketplace exchange demonstrated successfully by Kenneth Hirth in the examination of the site of Xochicalco in pre-Hispanic Mexico. This model supplements traditional studies on the location, form, and spatial configuration of the physical marketplace and instead examines the distribution of objects throughout consumption units. The primary unit of analysis is the household, which is seen to actively provision itself through both its own subsistence and the procurement of diversified products. A spatial assumption on which this model is grounded is the "law of monotonic decrement," which supposes that more efficient forms of exchange, such as a market, will result in a wider distribution pattern than will linear systems, such as reciprocity or redistribution. The hypothesis of this approach is that independent provisioning will lead to a homogeneity of material assemblages across households of different social status, for—in a market context—individuals have access to materials independent of social ranking and are restricted only by purchasing power. This differs from redistributive systems in which members of the elite have differential access to

luxury or imported goods. In the case of Ugarit, a decentralized market-based economic system would be reflected in the permeation of imported goods throughout all contexts of the site, with variations only in quantity as an indication of wealth. This paper aims to test the efficacy of this methodology when applied to a site of lengthy excavation history and variable data-recording practices—exploring whether this materially based framework can provide information about the nature of internal economic activity at Ugarit.

Etruscan Trade Networks: Using Nondestructive X-Ray Fluorescence to Determine Material Elements of Etruscan Ceramics

Patrick Woodruff, University of South Florida, *Robert H. Tykot*, University of South Florida, *Nancy T. de Grummond*, Florida State University, and *Jane K. Whitehead*, Valdosta State University

The Etruscan civilization was rich in local and interregional trade. Its exchange networks were vital in establishing relationships with other societies, importing exotic materials and goods, and disseminating and assimilating information. But how extensive were the trade networks established by the Etruscans? Were they limited only to the coastal cities, such as Populonia, Tarquinia, and Caere, or did they extend throughout Etruria, reaching even the remotest regions? Discovering imported material artifacts in remote settlements throughout Etruria adds to the significant importance placed on interregional and international trade.

Etruscan sites in the Tuscan region of Italy are being studied today to understand not only their culture but also their relationship with other societies. In 2013, nondestructive elemental analysis was performed on ceramics from the excavated sites of La Piana and Cetamura, two smaller settlements in the rural regions of Etruria. Additional samples were taken from the major coastal city of Tarquinia. Based on the clay type and elemental composition, these analyses are used to determine whether the ceramics were locally crafted or imported.

More than 100 ceramics ranging from storage containers, bricks and roofing tiles, amphoras, loomweights, and tableware (including red- and black-gloss) from Cetamura and La Piana were selected to represent a sample base for local and nonlocal crafted ceramics. The artifacts were analyzed nondestructively using a Bruker III-SD portable X-ray fluorescence spectrometer (pXRF), which has been shown to be highly successful in other archaeological studies. The pXRF emits primary X-rays onto the object, which produces secondary X-rays that are measured and provide atomic signatures for the material elements on the surface. Similar signatures from different ceramic artifacts indicate these items were constructed using the same materials. Since bricks and tiles are most likely locally crafted building materials, tableware with the same signature is interpreted to originate from the same general source. For example, a preliminary assessment of the analytical data suggests that most of the La Piana tableware seems to have been produced nonlocally, whereas most of the nongloss tableware from Cetamura was crafted locally. These analyses suggest that small remote settlements throughout Etruria were using nonlocally produced ceramics even though facilities to create ceramics locally were present. Additionally, the geography and accessibility of the remote settlements can also determine which ceramics are likely to have been produced locally.

Barcoding Archaeology: Digital Methods for Error-Free and Rapid Labeling, Data Entry, and Inventorying

W. Flint Dibble, University of Cincinnati, and *Harold L. Dibble*, University of Pennsylvania

Archaeological field and laboratory projects create thousands of unique identifier tags each year for artifacts and samples. Analysis requires repetitively recording the tagged information, and the subsequent inventorying of finds requires organizing them by this tagged information. Barcoded tags can be printed in the laboratory with standard printers and labels or in the field with a portable printer and Tyvek/Mylar tags. The advantages of a barcode system include (1) the speed of printing tags with a barcode along with a textual record; (2) the speed of scanning a barcoded unique identifier (find context, object ID, and the like) to bring up a record; (3) a reduction of transcription errors and automated checks for duplicate numbers; and (4) a direct-to-digital recording process—concurrent data entry of archaeological context or material while printing tags.

This hands-on poster presents free software designed to integrate barcodes into standard archaeological protocols. The software enables the custom layout of barcode labels potentially identical to handwritten labels with the addition of a barcode representing the unique identifier. The software reads and writes to .mdb files commonly used in both Microsoft Access and ESRI ArcGIS. Finally, it enables one to customize the layout to most sizes of label sheets. The only equipment needed is a Windows PC, a barcode scanner or smartphone, a printer, and paper, Tyvek, or Mylar tags. The total cost for a project creating about 30,000 unique identifiers with standard paper labels is less than $1,000.

Examples of barcoding labels and protocols are presented from research projects in Greece and France currently using the software. The speed of label printing and scanning is emphasized from a comparison between barcode and barcodeless technology. For a project analyzing about 30,000 unique objects, it is estimated that approximately two months of cumulative time is saved through printing labels and scanning barcodes rather than handwriting labels and typing unique identifiers. In particular, the reduction of error through the use of barcodes is important. It is estimated that transcription errors for unique identifiers occur more than 5% of the time. While many errors are caught quickly, lingering errors can decontextualize archaeological material or cost multiple people hours of time. Finally, the potential advantages for long-term curation of archaeological assemblages through printed barcode labels are demonstrated. With a fully digitized system, it is simple to find or change where archaeological material is stored or observe the range of material within a crate, bag, or shelf.

Eversion and Angle in Late Helladic Ceramics: How Reliable Is Dating by Rim Profile Alone?

Patrick M. Thomas, University of Evansville

Several factors often make precise dating of archaeological contexts of Late Bronze Age Greece difficult: many units contain limited numbers of sherds or include few or no decorated sherds of a sufficient size to assign accurately to a period, or the degree of wear is so high that the decoration is obscured.

Rims are assigned to particular periods based on the length of the lip, the height of the rim, or, to a lesser degree, the angle of the whole rim or its lip. Few experienced researchers would dispute that clear trends in rim profile occur within the Late Helladic period as a whole: drinking vessels, such as goblets or kylikes, show a progressive reduction in the length of the lip, for example. In general, specialists in Mycenaean pottery have tended to work inductively from pottery profiles rather than trying to quantify such changes, which is the purpose of this study. The first issue in question is how much variability exists within the rim profiles of some common types that may be reliably dated to a particular period, either because they are themselves phase markers or because examples from homogeneous contexts with sufficient decorated material can be used to determine the date; this establishes a kind of control group. The second issue is how much variability exists within groups of very common unpainted vessels, such as goblets, kylikes, and shallow angular bowls, that have been assigned by experienced workers to particular periods.

I first examine rims from easily recognized decorated vessel types widely agreed to belong exclusively to a single period: Ephyraean goblets and goblets with solidly painted interiors and unpainted exteriors from Late Helladic (LH) IIB. I then examine another common decorated vessel type from LH IIIA2, the solidly painted Furumark Shape (FS) 264 kylix, using as a core group the examples from a chronologically homogeneous deposit at Tsoungiza. Although the standard deviations of a number of indices calculated from measurements are relatively small, outliers are certainly present. The second part of the study turns to the variability within rim profiles of common types of unpainted pottery, starting with examples from closed or chronologically homogeneous deposits. Although rims even from adjacent periods are distinguished as groups, variability is greater than is often assumed, and it is more difficult to assign reliably individual pieces.

The First Intermediate Period Burials of Mendes
Andrew LoPinto, Michigan State University

The site of Mendes (modern Tell El-Ruba) occupied a place of prominence in the history of Egypt. Located approximately 120 km north of modern Cairo in the eastern delta, Mendes served as an ancient capital, trade center, and point of entry from the earliest periods of Egyptian history through to the Late Period.

During the 2012 and 2013 seasons, the Pennsylvania State Mendes Expedition, led by Donald Redford, excavated eight unique First Intermediate Period interments. Seven of these interments consisted of single individuals, and the eighth interment comprised one small mudbrick tomb containing five individuals. Radiocarbon dates from past seasons securely placed these burials in the First Intermediate Period (2200 B.C.E. [uncalibrated]). Of the 12 individuals, eight were classified as "adult," four were classified as "subadult," and two were classified as "infant." The very poor skeletal preservation, owing to centuries of saturation and dehydration, made exact age estimation difficult and sex estimation impossible.

These burials offer new information about health and burial strategy in a period of Egyptian history that is little studied. Because of the degraded skeletal tissue, the most important information about health was gleaned from the teeth, which

were relatively well preserved. Linear enamel hypoplasia was observable on the teeth, in occlusion, of the adult individuals for whom dentition was recovered, and in the case of the nonadult individuals, on unerupted dentition as well.

Burial strategy may also indicate potential periods of biological stress. The five individuals contained in a small mudbrick tomb were interred in what appeared to be a single burial event. This could indicate a potentially broad-reaching and life-threatening biological stress, either owing to malnutrition, disease, or a combination thereof.

These observations become very important when viewed vis-à-vis burial strategy and age. Though buried in similar fashion, these burials do exhibit distinction that could be attributed to socioeconomic differentiation, which is irrespective of age. Within the tomb, the youngest individual, an infant, was interred with a small steatite scarab near the neck. The stillborn infant outside the mudbrick tomb, however, received no burial accoutrement whatsoever. This demonstrates a clear difference in the social position of infants, even among the nonelite class.

When viewed together, the archaeological evidence and the bioarchaeological evidence appear to indicate that inadequate nutrition and disease affected the population of First Intermediate Period Mendes irrespective of social position and over an extended period.

Copper Smelting at Chrysokamino: Reconstructing Early Bronze Age Aegean Metallurgy

Maggie B. Beeler, Bryn Mawr College, *Lucas Stephens*, University of Pennsylvania, *Philip P. Betancourt*, Temple University, *George H. Myer*, Temple University, and *Jamie T. Ford*, University of Pennsylvania

The chemical compositions of two different forms of metallurgical waste material from the Early Bronze Age (ca. 3000–2000 B.C.E.) site of Chrysokamino on Crete are compared to contribute to ongoing investigations of copper smelting practices in Aegean prehistory. Excavations at Chrysokamino conducted under the direction of Philip P. Betancourt from 1996 to 1997 uncovered a metallurgical installation, along with a massive slag deposit. Unpublished slag and furnace chimney fragments from this deposit are analyzed using scanning electron microscopy in conjunction with energy-dispersive X-ray spectroscopy and optical-thin section petrography. The results of bulk chemical analysis reveal characteristically high levels of calcium in both types of metallurgical waste material. These findings reinforce the hypotheses that these high levels of calcium reflect the decision to use the local, calcium-rich bedrock as a fluxing agent during copper smelting at Chrysokamino.

It is proposed that the metallurgical site at Chrysokamino was intentionally located on an isolated promontory overlooking the Gulf of Mirabello in order to take advantage of the strong winds to fuel the furnaces as well as the readily available fluxing agents. The findings of this project therefore situate Chrysokamino as a strategically located, specialized copper-smelting site that highlights the complexity of Early Bronze Age Aegean metallurgy which was organized at the regional and interregional levels even before the advent of bronze technology.

The Use of Structured Light Scanning for the Study of the Linear B Deposits from Pylos, Messenia, Greece

Jami Baxley, College of Charleston, *Benjamin Rennison*, Clemson University, *James Newhard*, College of Charleston, *Kevin Pluta*, University of Texas, and *Dimitri Nakassis*, University of Toronto

This poster outlines the methodology employed to render Linear B tablets and other administrative elements in three dimensions, which is useful for exploring these objects in a virtual environment. Increasingly, archaeologists are turning to digital imaging and photogrammetry to document vestiges of the past in both two- and three-dimensional formats. In the case of three-dimensional images, photogrammetry and laser light scanning have been two major forms of image capture, with a large proportion of the artifactual imagery incorporating the latter method.

This project seeks to record the remains of the administrative recording system of the Palace of Nestor using a variety of traditional and innovative methods. In addition to traditional illustration and RTI imagery, the project has employed structured light scanning (using a Breuckman Smart Scan HD) to capture and render each object in three dimensions. Although slower than laser scanning, the structured light scanning process retrieves raw data of greater accuracy, with less point-to-point error, and most importantly, in color. Innovations within the data-capture phase of this project are not only reducing the processing time but speeding the process to take less time than other recording methods.

The high-resolution scanning and speed allowed by the in-field hardware and methods have provided researchers with superior data at a 425 diagonal field of view to 5 megapixel point density per scan with an estimated RMSE of 0.001 mm.

Animals in Ritual at Sant'Omobono

Victoria Moses, University of Arizona

At the Area Sacra di Sant'Omobono, the significant role of religion is evident in the continuous use of the site for sacred purposes from as early as the sixth-century B.C.E. construction of the Archaic temple through the use of the modern church that stands at the site. To understand the religious beliefs and the ritual practices of the early phases of use, this research investigates the faunal remains collected from several excavations of the site. The faunal remains are ideal material for understanding religion and ritual as they not only leave ample archaeological evidence of the ritual practice but aid in understanding the important relationship between human, animal, and supernatural.

This research uses faunal material from several excavations; the material from each excavation was collected and recorded in a different manner. All faunal remains associated with the archaic temple stored at the site from past excavations were reanalyzed and recorded in a systematic, uniform manner. This allows comparison across excavations. From two such excavations of the Archaic temple are the only faunal reports from the site; these reports provide information not only about which remains are present but also about their contexts and other associated materials. Current excavations of the Sant'Omobono Project emphasize the

collection and analysis of organic material, allowing for in-depth interpretation of the faunal materials.

By combining all the information from faunal material of the Area Sacra di Sant'Omobono, it is possible to gain greater insight into the ritual practices there, beginning with the sixth century B.C.E. ritual use of this site and the significance of animals in the belief system. The deposits associated with the archaic temple contain mostly very young sheep/goats and pigs, and many of the skeletal elements present are those with a high meat-utility index. The domestic remains associated with the temple are high-quality, desirable meats, indicating that the animals used in this ritual space were carefully selected and of great importance. In addition to the presence of domestic animals linked to diet is the consistent presence of domestic dog bone. The symbolic potency of dog in pre-Roman and Roman Italy as a ritualistic offering is reinforced by the animal remains uncovered at the Area Sacra di Sant'Omobono. The faunal remains from this site allow increased understanding of religious practice and the symbolic power of animals.

Geographic Information Systems for Alaska Shipwreck Patterns
Bonnie L. Etter, Johns Hopkins University

Shipwreck patterns of the southern coast of Alaska (16th–20th centuries) are established and analyzed by employing geographic information systems (GIS). Data for this project were provided, with permission, from the Office of History and Archaeology of Alaska. They consist of geographic coordinates and associated archival data (historical documents and photographs), which I plot and analyze to create a predictive model for future archaeological excavations. From these data, I create maps that serve as a case study to demonstrate how GIS technology can be combined with the archaeological and historical record to create a comprehensive visual and analytical record of a set of coordinates. My analysis contributes to the history of Alaskan shipwrecks and their spatial significance and to the history and methodology of GIS. I propose that an increased understanding of GIS applications will improve the way in which archaeological excavations may be undertaken, especially at submerged sites. This project provides a method of transforming a cumbersome system of mapping into the creation of programs where entire databases can be accessed and manipulated in one compact digital file. In turn, my research produces a prototype that can be accessed by other investigators and aims to be a tool that will facilitate excavation and educational outreach in Alaskan public archaeology.

PXRF and Ceramic Analysis at Poggio Civitate (Murlo)
Jason P. Bauer, Poggio Civitate Archaeological Project, *Anthony Tuck*, University of Massachusetts Amherst, *Brad Duncan*, University of Massachusetts Amherst, and *Daniel Moore*, Carleton College

A portable X-ray fluorescence spectrometer (PXRF) was used to collect elemental data in the field on more than 400 ceramic samples from Poggio Civitate. The aims of the study were threefold. First, the PXRF data were compared with previous

elemental studies on ceramics from Poggio Civitate (M. Tobey, E. Nielsen, and M. Rowe, "Elemental Analysis of Etruscan Ceramics from Murlo, Italy," in , J. Olin and M.J. Blackman, eds., *Proceedings of the 24th International Archaeometry Symposium* [Washington, D.C., 1986] 115–27) to determine whether PXRF provides a level of precision comparable to more expensive destructive elemental analyses. Second, the elemental data were used to determine ceramic groupings among the fine wares and coarsewares on-site with a view to discerning imported wares from locally produced ceramics. Lastly, the elemental data from six local clay sources tested using PXRF were also compared with the results obtained for ceramics thought to have been locally produced. The study finds that PXRF provides a cost-effective and field-expedient method that allows excavators to determine rough ceramic groupings in a timely fashion, but efforts to match local clays with locally produced ceramics in the field using the data obtained from PXRF alone presents challenges; both calibration of the PXRF, and changes to the ceramic analysis due to intentionally added tempers introduce levels of complexity to attempts to link ceramic samples to local clay sources.

Documenting Evidence of a Native American Astronomical Marker
D.W. Kreger, Mac Lauren Institute

There has long been conjecture as to whether some Native American sites were used as solar observatories, given the apparent nonrandom lighting events seen at certain times of the year. There is some tangential evidence for this in the ethnographic data. For instance, certain ceremonies common among the far western North American peoples, such as the Mourning Ceremony, were conducted during the solstice. We know that they had a sophisticated knowledge of astronomy and knew when to expect the solstice and equinox by tracking the sun. Yet finding solid evidence of such astronomical markers has proven more elusive. The question always remains, just how coincidental are these nonrandom lighting events? In this study, we used time-lapse photography, at sunrise and sunset, during both the solstice and equinox, to capture the lighting events of one potential marker at a petroglyph site in the Coso Range of California. One seemingly nonrandom event was captured on the dawn of the vernal equinox. The age and placement of the petroglyphs, which were part of the event, and the configuration of the rocks creating the event were analyzed to assess to what extent the rock could have been used as a physical marker to predict the equinox. A series of photographs of both the solstice and equinox lighting events are graphically presented with a time marker, along with a site map and photographs of the stone marker and surrounding petroglyphs.

Ancient Water Systems of the Lamas Çayi
Dennis Murphy, Independent Scholar

The Lamas Çayi (River) in southern Turkey marks the boundary between Cilicia Tracheia (rough) and Cilicia Pedias. It was also the primary water source for three different Roman water systems supplying the ancient cities of Elaiussa Sebaste/

Korykos, Olba, and Diocaesarea. The hinterland surrounding these cities included many small settlements and farmsteads, which relied on numerous cisterns to support agricultural activities and daily life. This paper is the result of two seasons of fieldwork investigating the construction techniques used to build the aqueducts and cisterns while looking at their continued use into the modern era.

The Lamas Çayi was the primary water source for the cities of Elaiussa Sebaste and Korykos from the first century C.E. until they were abandoned in the seventh century C.E. The water was transported from the nearby Taurus Mountains to the coastal plain via a 26 km aqueduct employing rock-cut channels and aboveground conduits while crossing multiple valleys by means of arched bridges. The ancient builders employed a great deal of engineering skill in constructing the first section of the aqueduct upstream of the modern village of Limonlu and transporting water down the Lamas Çayi valley to the coastal plain, where the aqueduct turned east toward Elaiussa Sebaste and then on to Korykos. This was accomplished by means of a steep channel cut in the side of the canyon wall. Large gallery windows were cut to accommodate the construction, provide ventilation, and provide for debris removal. From the Lamas Çayi valley, the ancient aqueduct crossed the coastal plain on a combination of in-ground rock-cut channels and aboveground raised channels while crossing seven valleys over aqueduct bridges.

In Olba, water was again taken from the Lamas Çayi, this time upstream of the modern village of Kizilgeçit at an elevation of about 1,175 m to supply the ancient Roman city of Olba near the modern city of Ura (U uralani). Like the aqueduct at Elaiussa Sebaste, the Olba aqueduct was cut into the rock high up along the steep canyon wall of the Lamas Çayi valley. It then continued on to Olba by means of tunnels and underground conduits and finally reached the hilltop settlement over a large two-tiered aqueduct bridge. Sections of the ancient aqueduct continue to be used by local farmers for agricultural irrigation.

At Diocaesarea, a third aqueduct also took water from the Lamas Çayi at an elevation of about 1,460 m near the modern village of Sariaydin, and transported it to Diocaesarea (modern Uzuncaburç) via a system of tunnels and rock-cut channels. Water from this aqueduct system was used up until 20 years ago.

"A Sufficient Number": The Historic African American Community of Peterborough
Kate E. McMahon, Howard University

Warren, Maine, is located in the mid-coast region in the southeastern part of the state. The small town has a long history that is intrinsically linked to the maritime activities of the region, which began in the mid seventeenth century. Sometime around 1782, Sarah Peters was brought to Warren as a slave on a ship owned by James McIntyre. After slavery was outlawed in Massachusetts in 1783/4, Sarah successfully sued for her freedom and married a man named Amos Peters. Together, they raised a large, mixed-race family and settled near South Pond, a good distance away from the main village. By the 1820s, they had their own school district, were part of the Baptist church, and had a good deal of land. As many as 82 mixed-race people lived in the village of Peterborough in the 1850s and 1860s, when it was at its peak.

This paper focuses on how African American and mixed-race communities were able to establish themselves in maritime northern New England in the years prior to the Civil War, particularly during the antebellum period. Peterborough is a case study toward understanding African American communities outside the plantation setting and their relationships with agriculture and the sea. While no archaeological work has yet to be undertaken, the historical research has led to a broader understanding of the health of this small community and has also focused on contacting a descendant community. The research connects small, maritime African American communities located within the Gulf of Maine through a rich genealogical history. Archaeological work will take place in the summer of 2014.

More than a Dot on a Map: Poggio Civitate Geospatial Data in Context
Taylor Oshan, Hunter College, and *Eric Kansa*, University of California, Berkeley

Data collection at Murlo has been thorough and consistent over the decades, though it has lacked a consistent approach toward geospatial documentation. We present recent efforts to introduce greater rigor and formalization toward geospatial data at Murlo. We discuss how these efforts can lead to helpful visualizations that expand interpretive possibilities, though they are not without problems stemming from errors and inconsistencies in the underlying documentation. In enhancing the geospatial data record for Murlo, we also open new dissemination opportunities, such as web-mapping interfaces and the integration of various online data and media repositories, including the project's website and the site Open Context (http://opencontext.org), an online data-dissemination venue. We demonstrate how the more rigorous treatment of the geospatial data, including compliance with widely accepted data standards and integration with Murlo's rich artifact and media archives, promotes data archiving and interoperability. These efforts help link Murlo's rich archaeological record to a dynamic and growing information ecosystem supporting research and data preservation in archaeology.

Conical Cups, Kylikes, and Champagne Cups in Context: Characterizing Mass-Production and Drinking Practices in the Plain of Malia During the Late Bronze Age
Florence Liard, Université Catholique de Louvain

In Aegean and more particularly Minoan archaeology, communal feasting involving the massive consumption of drink is considered a significant, integrative social practice that took place in the immediate neighborhood of large habitation buildings. Attempts are made to identify the participants in these practices during the respective Minoan periods as well as in their later development toward the Iron Age. This poster explores the usefulness of a detailed typological, fabric, and petrographic analysis of relevant ceramic assemblages to gain insights not only into technical choices and workshop organization, but also into the status and potential social ranking of the consumers. The study concentrates on two proximate sites in northeast Crete, Malia and Sissi. Massive dumping pits at these sites have been discovered and allow consideration of the evolution of collective consumption

events on a wide timespan, from the Neopalatial period (Late Minoan [LM] IA) through the establishment of a Mycenaean-type administrative center at Knossos (LM II) to its final destruction and the advent of a Greek world (LM IIIA2/B). A total of 90 conical cups, kylikes, and champagne cups are selected for petrographic testing. It is argued that during LM IA one ceramic fabric predominates regionally and reproduces a specific know-how from the Protopalatial workshops at Malia. In contrast, the Final Palatial period represents an outstanding improvement in forming and firing techniques as well as a very standardized cup typology. Local technical choices, profile variations, and new import trends develop after the final destruction of the Palatial systems and toward the Iron Age.

Bronze Age Land Management in the Northern Argolid: A GIS Investigation of Terrace Organization and Implications for Land Use in the Environs of Mycenae

Ryan P. Shears, Mississippi State University, *Daniel J. Fallu*, Wiener Laboratory, American School of Classical Studies at Athens, and *Daniel E. Ehrlich*, Dickinson Excavation Project and Archaeological Survey at Mycenae

Despite the visibility of modern examples in the Aegean landscape, agricultural terrace systems are a disproportionately understudied aspect of the Mycenaean palatial complex. Their construction, orientation, and even presence in most regions are a topic of debate that weighs heavily on the discussion of Bronze Age socioeconomic organization and collapse. Spatial understanding of Mycenaean agricultural practices is currently lacking because of the low number of examples identified in the field and a backlog of unanalyzed data.

This poster presents the preliminary results of a GIS-based inquiry into the organization of terrace construction in the immediate environs of the citadel of Mycenae based on the system of terraces and revetments recorded by the Mycenae Survey and published in the *Archaeological Atlas of Mycenae* (Athens 2003). Digitizing maps from the Greek geological and mapping services, military survey, archaeological survey, and aerial imagery of modern terraces, we derive land-use data for all observed periods, including preferred orientation, slope, and elevation, as well as optimal distances between retaining walls. Slope and aspect classification are used to observe apparent preferences in the placement of Mycenaean terraces. Distances between terraces walls are used to explore any possible base unit of measurement, as distances between any parallel walls would be expected to manifest as multiples of such a unit. Although further ground truthing would reinforce and enrich our efforts, such investigation into previously collected and understudied data will lead to a fuller understanding of Mycenaean landscapes and palatial economies.

The Morgantina Excavations and the Legacy Data Integration Project

James Huemoeller, AIA Member at Large, *Leigh Anne Lieberman*, Princeton University, *David Massey*, Indiana University, and *D. Alex Walthall*, University of Oregon

Over the past few decades, the field of archaeology has witnessed computational and technological advances that have revolutionized methods of data collection.

Today, tools such as GIS and digital databases are critical components for the documentation and interpretation of archaeological material. Well-established projects frequently face the challenge of integrating vast amounts of legacy data into digitally structured formats and of developing systems that are able to maintain and streamline the existing data-collection architecture. The American Excavations at Morgantina provide a useful case study by which to investigate archaeological data collection practices and improve existing digital curation processes. The excavation's vast data archive extends from 1955 to the present and has a long tradition of using standard methods of recording field data: paper notebooks, sketched site and trench plans, measured drawings of features and architecture, and extensive photography. In 2012, we began to develop a digital system that would be able to accommodate both existing legacy data and current fieldwork at Morgantina.

In this poster, we present our methodological approach by highlighting a trench excavated in 1992 in the central shops of the agora at Morgantina. While we describe some of the difficulties that we have encountered when working with this legacy data set, we also outline how this case study has helped us refine and standardize our procedure for integrating CAD, GIS, and archival information into a comprehensive relational database. Finally, we briefly discuss the implications of this project on future research and the lessons that might be learned by applying our new approach to the rich archaeological tradition that the Morgantina archives have to offer.

The Late Antique "Church Wreck" at Marzamemi, Sicily: 2013 Excavation Season
Justin Leidwanger, Stanford University, and *Sebastiano Tusa*, Soprintendenza del Mare–Regione Siciliana

The Marzamemi Maritime Heritage Project is a collaborative excavation, survey, and heritage-management initiative focusing on maritime landscape and seaborne communication off the coast of southeast Sicily. The concentration of accessible sites and their location at the intersection of the eastern and western Mediterranean facilitate inquiry into long-term structures of regional and interregional maritime exchange from the early Roman era through late antiquity. The first field season in 2013 saw the initiation of new excavations at the site of the Marzamemi II shipwreck, which was originally discovered and partially explored by Gerhard Kapitän a half-century ago. This vessel appears to have sunk while carrying prefabricated architectural elements for the assembly of a Byzantine church during the sixth century. A rare example of "high trade" in building materials, the ship's other cargo, personal items, and hull remains could offer unique insight into the relationship between specialized state-driven and independent commerce as well as the ambitious reconstruction program integral to Justinian's projection of imperial ideology. Along with archaeological research, the project situates excavation within a broader dialogue on natural and cultural heritage practices in the region.

The Athenian Agora Excavations: Three-Dimensional Modeling Application for Fieldwork Documentation
Daniele Pirisino, Durham University

The poster aims to describe the employment of three-dimensional modeling techniques for the fieldwork documentation adopted at the Athenian Agora excavations. The outcome of three seasons of implementation is illustrated with comments on the quality of the results, along with a few remarks on practical approaches to three-dimensional digital surveying.

Reliable and consistent records are key in providing the archaeologist with objective data for archaeological interpretation and are fundamental to the construction of excavation archives. Modern digital surveying technologies have evolved to the point where they are more and more accessible to a wide range of professionals, field archaeologists included.

As a result, the Athenian Agora excavations have recently turned to the practical application of new technologies in archaeology, and traditional recording techniques (field notes, recording sheets, drawings, photographs, and other digital supports) are now complemented by the generation of accurate, reality-based three-dimensional models. Through the processing of digital imagery, geometrical models of features and fills are created. The three-dimensional modeling pipeline adopted is perfectly integral to the excavation process and is managed by the field archaeologists themselves.

These three-dimensional models document the entire excavation process from the first day through the end of the season; they are rigorously anchored to the excavation's local coordinates and scaled accordingly. The geometry, appearance, and spatial contextualization of all types of features and archaeological scenarios are digitally preserved and can be visualized, measured, and analyzed at any time after their excavation. The relevance of the implementation of this digital surveying lies in the fact that the site is three-dimensionally modeled day by day during excavation. The resulting time-lapse models are integral to the rest of the fieldwork data and help increase the effectiveness and completeness of our archaeological records.

During the poster's presentation, some of the Agora three-dimensional models from the 2013 season will be shown on a laptop screen to give the audience a firsthand understanding of the possibilities of the surveying technologies adopted. It is hoped that, in turn, this will lead to a fruitful discussion of these possibilities.

Coring Survey on Deep Sites: The Case Study of Sant'Omobono
Andrea L. Brock, University of Michigan

The site of Sant'Omobono in the heart of Rome preserves evidence of continuous occupation in the area of the Forum Boarium from the seventh century B.C.E. Serving as a cult center adjacent to the archaic river harbor, this site is fundamental to understanding the urbanization process in early Rome but is complicated by unusually deep stratigraphy. Situated in a natural valley on the southwest slope of the Capitoline Hill, the complex stratigraphic sequence at Sant'Omobono extends more than 15 m below the modern street level, making access through traditional

excavation especially problematic. This poster discusses the methodological and practical implications of coring deep sites, as demonstrated through preliminary results at Sant'Omobono.

To enhance the ongoing excavation of Sant'Omobono, our team drilled a series of deep percussion-driven cores in various locations around the site. The cores reflect three different but ultimately intertwined strategies: (1) cores placed in a trench prior to excavation, which significantly aid the digging strategy by providing a detailed stratigraphic sequence of the layers below; (2) cores at the bottom of anthropic levels in a completed trench, providing information on natural sediment; (3) cores placed in areas of the site that were impossible or unlikely to be excavated. Each percussion core provides a deep vertical slice of up to 6 m of stratigraphy, affording an unusual opportunity to access a continuous section of several centuries of urban activity. Nevertheless, the data must be analyzed with an understanding of their limitations. The individual core offers a narrow window of visibility, from which it is dangerous to draw complex interpretations. When combined with excavation or extensive coring, however, this survey methodology proves a productive strategy to acquire valuable data otherwise impossible or difficult to access through traditional excavation methods.

This poster presents the potential of coring survey as applied at Sant'Omobono, where preliminary results are beginning to shed light on the development of the Forum Boarium. As the earliest levels of occupation in the valley are especially deep, this ongoing survey allows unique access to new information on Rome's urbanization story. The cores provide a glimpse of the natural topography as well as human efforts to reshape the landscape. Future coring survey in and around Sant'Omobono will provide a larger sample of cores and a robust set of data, from which we aim to acquire a greater understanding of the topography and environment of this part of the city.

The Amphitheater at the "Villa of the Antonines" in the Ager Lanuvinus

Timothy Renner, Montclair State University, and *Deborah Chatr Aryamontri*, Montclair State University

Since the 18th century, archaeological remains south of the 18th mile of the ancient Via Appia have been ascribed to the villa of the Antonine emperors "at Lanuvium," a location mentioned in ancient sources. This attribution has been almost universally accepted since the discovery in 1701, in an uncertain location between the Via Appia and the remains that still survive, of high-quality marble busts of members of the imperial dynasty of the Antonines (138–192 C.E.). Today held in the Musei Capitolini in Rome, these busts were found in niches of a room paved in mosaic, which is unfortunately no longer traceable.

Since 2010, our project has concentrated on understanding the general layout and the chronological development of the villa. We have focused particularly on a curvilinear structure immediately west of the bath complex of the villa. This structure upon its discovery in 1996 presented three curving, concentric walls connected by radial walls to form a series of chambers, as well as an underground channel accessible by means of a vertical shaft. Subsequent explorations revealed the presence of a spiral staircase giving access to at least one subterranean room.

Our investigations have been considerably informed by geophysical survey methods such as GPR, magnetometry, and seismic refraction tomography. The results suggest that the already emerging curving structure continued so as to form an elongated oval. Large *peperino* blocks scattered on the ground, which are either partially or completely perforated by square-section cavities, suggest mast corbels for a velarium. Testing of the geophysical results in 2012–2013 through further excavation showed without a doubt that the structure is an ampitheater about 56 m in length, likely the one at Lanuvium where the emperor Commodus, according to ancient sources, earned his nickname of "Roman Hercules" for killing wild animals.

The artifacts—including numerous pieces of costly decorative marble, colored glass mosaic tesserae, both marble and glass elements of *opus sectile* decoration, and brickstamps datable to the Antonine period—indicate elite wealth and taste in the owners and contribute to validating the identification of these remains with the imperial residence of the Antonine dynasty at Lanuvium.

These results give further impetus for studying the spatial relationship of the amphitheater to other structures of the villa and for testing possible comparisons with the layout and functions of other elite residential complexes possessing amphitheaters, such as the Villa dei Quintilii, Villa Adriana, and the Sessorium with the Amphitheatrum Castrense.

The Material Makes the Man: Wax *Imagines* in the Roman World
Katherine Jarriel, Cornell University, *Annetta Alexandridis*, Cornell University, *Jennifer Carrington*, Cornell University, and *Carrie Atkins Fulton*, Cornell University

Wax survives only in exceptional archaeological conditions, and yet literary sources suggest its applications in the ancient world were ubiquitous. One of the most distinguished Roman uses of wax—which has no surviving archaeological presence—was the creation of ancestor masks of elite males (*imagines maiorum*). Previous studies examine literary attestations of the political significance of *imagines* for the Roman aristocracy or emphasize the importance of viewing ancestral representations for reinforcing the *mos maiorum*. However, scholars have failed to fully assess the *imagines*' material character. Taking our point of departure from studies of materiality, which foreground the entwined physical and symbolic nature of material culture, we bring new insight into the material nature of wax *imagines* and how their materiality affects their ability to evoke presence and memory.

By experimentation in casting wax masks, we demonstrate that the medium of wax could preserve a unique level of detail in representing the ancestor's physical presence. The evocation of human flesh by wax's coloring and tactility renders the masks significantly more lifelike, affecting viewing not only when the masks were on display in the houses of the Roman elite but especially when they were worn against the skin by participants in funeral processions. The unique ability of wax to mimic and join to human flesh, in contrast to stone or bronze portraits, was an important asset for the performative funerary use of *imagines*.

Our experimental engagement with wax also calls attention to neglected features of the *imagines*' use life. Wax's malleability requires more maintenance than

representations in other media, necessitating an ongoing material and ritualistic engagement with ancestral masks. The copying of *imagines* for multiple households with a common ancestor also would have affected the preserved detail over time.

Furthermore, wax has unique associations as a material of impressionability, transformation, and human vulnerability. This peculiar quality was particularly highlighted in Roman poetry, magic, and medicine, where wax served as a metaphor and material for metamorphosis and transitions between life and death. Additional associations of wax with memory and impression making complete our investigation. An attention to wax is a necessary component of more fully understanding the effect of materiality on the *imagines*' role as a recollective aid of an elite individual as well as a collective manifestation of Roman ideology.

Photomodeling Sant'Omobono: Meeting the Challenges of Topographic Documentation in a Waterlogged Urban Environment
Daniel P. Diffendale, University of Michigan

The use of digital photogrammetric techniques to document archaeological layers and features has become increasingly common in recent years. Photomodeling software such as PhotoScan uses multiple photographs of an object to model its geometry. In addition to providing more detailed topographical data than those acquired using a total station alone, such photomodeling offers potential solutions to problems posed by complex urban excavations. A deep sounding at the site of Sant'Omobono in Rome's Forum Boarium presented special challenges for topographical documentation. The depth of the sounding and the prospect of excavating below the water table necessitated the installation of steel sheeting to prevent slumping and collapse of the scarp. The initial height of the sheets above the sounding blocked sight lines and precluded the regular use of a total station to document excavation levels. At deeper levels within the sounding, the presence of sump holes, pumps, and occasionally small amounts of standing water presented additional challenges to the creation of photomodels. The creation of photogrammetric models that included fixed points around the excavation area permitted not only the calculation of real elevation data but also the recording of detailed topographic data for each stratigraphic unit thus modeled. The resulting photomodels can also be used in the creation of traditional transparency overlay plans.

Photogrammetric documentation in a single context recording system such as that used at Sant'Omobono has the further advantage of allowing the reconstruction of detailed vertical sections, not only along the limits of the excavated area, but also along any axis within it. Photomodeling also has a potential analytical value in allowing more accurate calculation of sediment-volume estimates than is possible using traditional techniques. The use of photomodeling at Sant'Omobono provides a model for dealing with the specific topographic challenges of urban excavations and for richer data collection in all excavation contexts.

The Gabii Project: The 2012 and 2013 Seasons
Nicola Terrenato, University of Michigan, *Marcello Mogetta*, University of Michigan, *Andrew Johnston*, Yale University, *Rachel Opitz*, University of Arkansas, and *Anna Gallone*, The Gabii Project

In the summers of 2012 and 2013, the Gabii Project continued its excavations, with the support of a generous National Endowment for the Humanities grant. More than 60 students, mostly from American institutions, participated in the exploration of more than 1 ha (2.4 acres) in the center of the ancient city, which is located 12 miles to the east of Rome. The results obtained provide important insights into different periods of the city's life.

Our knowledge of the city's middle Republican phases has substantially expanded. In addition to the two previously reported elite courtyard houses dating to the late third century B.C.E. a major complex has been uncovered in an adjacent city block. Excavations in this complex revealed a courtyard, onto which vast rooms open, and a monumental pillared facade, arranged over two terraces that are separated by a massive retaining wall of ashlar blocks. The date of the complex, between the late fourth and early second centuries B.C.E., makes it a rare discovery: a presumably Middle Republican public complex in an urban setting.

In another area, the exploration of an occupation sequence spanning from the eighth through the fifth century B.C.E. continues. Below an archaic house, a complex sequence of hut floors and related features is coming to light, suggesting continuous elite occupation in this area from the earliest stages of city formation. The grave goods of several infant burials found in association with this residential compound are some of the richest in central Italy, providing important evidence about the social position of the area's residents.

In 2014, the excavation will expand to further explore the middle Republican complex and the early habitation sequence. In addition to continued excavation, a new project focused on the peer review and publication of complex digital content has just been launched. This new effort, the Gabii Goes Digital project, is working to make three-dimensional models—which at our site have been used to record more than 25% of the stratigraphy, a core part of the publication record—and to promote their acceptance as basic data within the archaeological community. Through continued excavation, research, and publication efforts, we hope to build on the project's already substantial contribution to our understanding of the origins and development of Roman urbanism and architecture in the first millennium B.C.E.

Evidence of Cereal Agriculture Since 7600 B.C.E. in the Hyperarid Uvda Valley, Southern Negev Desert, Israel
Linda Scott Cummings, PaleoResearch Institute

AMS radiocarbon dating of identified charcoal has anchored occupation of a cult site (7600–6300 B.C.E.), a courtyard from the sixth millennium B.C.E., Early Bronze habitations, a third-millennium B.C.E. habitation site, a Nabatean building, and Bedouin silos. Pollen analysis of samples from these disparate time periods shows a record of local vegetation and cereal agriculture through time. In the

now hyperarid desert of the southern Negev, this record speaks of concentrations of people and successful agriculture. From samples representing a thermal feature at a cult site in the mountains on the east side of the Uvda Valley to habitation rooms in Uvda Valley, recovery of cereal pollen indicates that occupants of this desert relied on cereals for their subsistence. Analysis of animal pellets also contributed to the story of agriculture. Indeed, the presence of threshing floors on the east side of Uvda Valley, provides direct evidence of threshing cereals. Periodic rains are sufficient to turn this hyperarid desert into a mass of flowering plants and cereals even today. Local vegetation identified in this pollen record included weedy and shrubby plants, as well as a few trees. Many plants observed today in the valley are represented in this pollen record of the past approximately 9,500 years. This record points to a continuity in land use by people who may have had either a sedentary or mobile lifestyle or may have switched their subsistence strategy with changing climate. Reliance on agriculture started during a time of greater precipitation, then carried forward through gradual changes in quantities of precipitation. Modeled climate change over the past approximately 10,000 years and a record of climate change from Soreq Cave both indicate increased rainfall in the past, during establishment of this subsistence pattern of reliance on cultivated cereals. Ultimately, these data sets come together as an example of human adaptation to climate change in an effort to maintain, rather than abandon, their subsistence strategy.

First Season of Excavation at Sant'Ansano (Italy) and Aspects of Archaeometry

David B. George, Saint Anselm College, *Claudio Bizzarri*, PAAO, and *Molly Gayton*, Charlemont School

This season marked the initial exploration of the site around the collapsed church of Sant'Ansano. It is located in the *comune* of Allerona and situated 16.9 km northwest of Orvieto. Along either side of an ancient road stand two apsidal structures. For the beginning of the campaign, we focused on the area in and around the collapsed church. The church had made use of one of the two apsidal structures to house its altar(s). This apse is of particular interest for its preservation, art and architecture, and persistent reuse of a Roman structure through the Medieval and early modern periods. The structure is well preserved, a fact highlighted by the differences in wear between the two standing apses. The adjacent apse is reduced primarily to its core. The Sant'Ansano interior has a fresco of rich yellow, red, green, and blue pigments. Because of exposure to the elements, the fresco has not been preserved well and shows only one of the likely three original figures. The apse's architectural design is characteristic of a Roman or Late Antique building technique—a blend of terracotta brick, mortar, and varying courses of *lapides quadrati*. This *opus mixtum* is covered in places with a layer of *cocciopesto*.

We approached the excavation at Sant'Ansano in two trenches: trench A is an L-shaped trench spanning the exterior western wall of the apse to the middle of the north wall, trench B within the collapsed church covers half the interior of the nave in front of the apse, running north to south to just beyond the entrance. The purpose of trench A was to reveal the foundational construction of the apse to understand the phasing and chronology of the structure. The goal of trench B was

to understand the relationship and stratigraphy of the space directly beneath the apse as well as the nave itself, which extends to the south, and to understand the entrance.

The excavation revealed a number of human burials (medieval) some in primary deposition and others in secondary, the latter having been moved near the church from the adjacent fields. A number of fragments of fresco were discovered, both ancient and early modern. They were analyzed in situ by both Raman and X-ray fluorescence to give elemental and compound data. The results point to possible differences in the source of pigments over time, especially when compared with other samples from nearby Orvieto and Castel Viscardo.

Sinop Regional Archaeological Project, 2010–2012

Owen P. Doonan IV, California State University, Northridge, *Alexander Bauer*, Queens College, CUNY, *Mark Besonen*, Texas A&M University, Corpus Christi, *Aksel Casson*, Slippery Rock University, *Matthew Conrad*, California State University, Northridge, *Krzysztof Domzalski*, Institute of Archaeology, Polish Academy of Sciences, and *Anna Smokotina*, National Academy of Sciences of Ukraine

Sinope (modern Sinop) was the earliest and most strategic of the Milesian colonies on the south coast of the Black Sea. The Sinop Regional Archaeological Project (SRAP) is an interdisciplinary investigation of the economic and cultural development of the hinterland of Sinope from the Chalcolithic period (fifth millennium B.C.E.) to Late Ottoman times. Previous seasons along the east coast and coastal plains have shown a pattern of increasing settlement density in the Hellenistic and Late Roman/Early Byzantine periods consistent with a hypothesis of intensified economic activity. The 2010–2012 seasons of SRAP investigated the articulation of the coastal plains with the highlands in the hinterland of Sinope based on systematic pedestrian survey. A particular interest during these seasons was the impact of an important path through the mountains that flanks the Kirkgecit cay. Communication along this corridor is evident in a series of intervisible settlements from the mid first millennium B.C.E., a concentration of Roman milestones near the highland village of Erikli, and later historical accounts of travel through these mountains. A significant increase was recorded in the density and size of settlements flanking the Kirgecit cayi valley during the fourth to sixth centuries C.E. This pattern was similar to that observed by our previous survey in the Demirci valley but in contrast to results in the neighboring Kabali cayi and Sarimsakli Cayi valleys and the Sarikum valley on the west coast of the promontory. Systematic pedestrian survey and geophysical survey have documented a substantial port at the mouth of the Kirkgecit-Kabali cay system from the late first millennium B.C.E. into Ottoman times. New results of environmental studies from Sarikum on the west coast of the Sinop promontory, a survey of the Boztepe headland overlooking the ancient city, and a geophysical survey of the ancient city center are also presented, as are results of physical and typological ceramic analyses.

The Excavation at Mesolithic Damnoni: The Discovery of a New Culture on Crete

Thomas F. Strasser, Providence College, *Eleni Panagopoulou*, the Ephoreia of Speleology and Palaeoanthropology of Southern Greece, *Panayiotis Karkanas*, the Ephoreia of Speleology and Palaeoanthropology of Southern Greece, *Miriam Clinton*, University of Pennsylvania, *Epaminondas Kapranos*, 25th Ephoriea of Classical and Prehistoric Archaeology of West Crete, *Nicholas Thompson*, the Ephoreia of Speleology and Palaeoanthropology of Southern Greece, and *Sarah C. Murray*, University of Notre Dame

The Damnoni site in southwest Crete is the first excavation of the Mesolithic period on the island and significantly deepens our understanding of Cretan prehistory. Prior to this research, no prefarming, hunter-gatherer site had been excavated on Crete. The discovery of stratified deposits of Mesolithic stone tools reveals a new assemblage that will allow future projects to detect this exiguous industry. In addition, the discovery of Melian obsidian demonstrates the earliest trade network on the island; these pieces may rank close to the oldest obsidian artifacts ever found in the Aegean.

The site of Damnoni consists of a small south-facing cave and the area in front of it. Excavations occurred in 2011 and 2013; the site was excavated in 1 x 1 m trenches, with extensive dry sieving and flotation. While the first season demonstrated the presence of stratified deposits, the second revealed the extent and nature of the site. The finds come from three strata, the middle of which is an Aeolian deposit containing most of the stone tools. The tools are quite small and primarily made of quartz and flint; they include scrapers, denticulates, spines, and truncations, along with other traditional microlithic artifacts common to the Aegean Mesolithic. Although most of the materials are common to the region, there were some uncommon green and white flint. Most important was the discovery of Melian obsidian. Nine pieces were found in the 2013 season, eight of which are tools. Since most are finished tools, they suggest that the Mesolithic people at Damnoni were not working obsidian at the site. Instead, they probably received their obsidian in a finished form, perhaps through a down-the-line trade network. In comparison with the quantities at other Mesolithic sites, such as Franchthi and Maroulas, the quantity at Damnoni is quite small. Therefore, the site may be located on the periphery of an exchange network. The implications are significant for Early Holocene trade and the history of obsidian use in the Aegean.

We wait for absolute dating of the obsidian with the SIMS-SS hydration method and of its soil context with optically stimulated luminescence. We are confident that dissemination of these inconspicuous finds will allow future archaeological projects on Crete to recognize Mesolithic tools and expand our understanding of the Mesolithic in the Aegean.

Undergraduate Posters

Vox Populi: Latin Epigraphy at Ephesus from the First Century C.E.
Jessica L. Barry, Sweet Briar College

Stelae and tablets from the Roman empire hold the words of the common people and give insight into the true state of the empire. While the words and deeds of emperors were carefully documented and preserved for all, the writings of the common people were often left by the wayside. I present a comprehensive analysis of Latin epigraphy found at the first-century C.E. site of Ephesus, Turkey. This poster describes the proper methods of documenting the epigraphs without compromising their integrity, as well as their significance in Classical-period Ephesus. The poster contains photographs of the epigraphy along with their respective transcriptions and translations. They contain information about Roman citizens living in Ephesus along with citizens living in Egypt and the trade agreements between the two. The epigraphs provide valuable information about the lifestyles and daily happenings of the average Roman citizen.

Time Capsule of Padre Nuestro Botanical Park
Vickery A. Lauro, Indiana University Bloomington, *Charles Beeker*, Indiana University, and *Jessica Keller*, Indiana University

Padre Nuestro Botanical Park is located in the southeast region of the Dominican Republic and is of great archeological, historical, and social significance. The park includes an array of biolife and several prehistoric submerged caverns that serve as a fresh water source for the surrounding area, the Bayahibe community and the five resorts located there. Further enhancement and development of the park will preserve prehistoric sites for continued archeological study of the Taino, protect habitats for an array of flora and fauna, including several species yet to be identified, and ensure that vital water sources are maintained at safe and healthy levels. This poster highlights the multidimensional significance of Padre Nuestro Botanical Park and the importance of continued investment in its preservation and future enhancement.

A Catalog of Carriage Steps in the Historic District of Charleston: Paving the Way to Understanding the Historic Streetscape of Charleston
Craig W. Garrison, College of Charleston

Carriage steps were important streetscape features in Charleston, South Carolina, during the 18th and 19th centuries. Included in this report is an inventory of 105 carriage steps located in the historic district of Charleston today and a brief analysis of the styles and materials used on these relicts. When analyzed as a collection, these artifacts offer insights into different architectural and social patterns that developed around early urban settings.

Decoding the Tombstones: The Unmarked Graves of Plot 2 At Oak Hill Cemetery, Pontiac, Michigan
Keith Zimmerman, Wayne State University

Examination is being conducted at Pontiac's Oak Hill Cemetery, specifically Plot 2. This plot possesses a series of unmarked graves that are represented only by numbers rather than by the names of the deceased. These unmarked graves are linked to the neighboring and subsequently demolished Pontiac State Hospital (or Clinton Valley Center) that operated from 1878 until its demolition in 1997. Patients with mental illness are a marginalized population, and during the era of asylums (late 19th century), they changed society's view of the mentally ill. According to Grob, the shift was attributable to the move from home care to institutional care. In accordance with the marginalization of the mentally ill, historic cemeteries are consequently also marginalized, as many family members have no real connection to the cemetery, a stance that may lead to neglect of a given burial site. Moreover, the majority of mortuary analysis assumes that the burial population is consistent with the corresponding group as a whole, meaning that a cemetery tends to identify with a certain part of the population. As a result, some populations are overlooked in mortuary analysis. The unmarked graves signify a lesser degree of humanity, which can be attributed to socioeconomic factors, changing views on mental institutions as a whole, and the eradication of asylums.

SESSION 3A: Joint AIA/APA Colloquium
Getting Started with Digital Classics
Sponsored by the Digital Classics Association

ORGANIZERS: *Neil Coffee*, University at Buffalo, SUNY, and *Gregory Crane*, Tufts University and University of Leipzig

Colloquium Overview Statement
Digital approaches to the study of antiquity are opening up new perspectives on the classical world. At the same time, they challenge scholars across subdisciplines to examine how digital resources might affect their methodological assumptions and interpretations. The mission of the Digital Classics Association (DCA) is to foster dialogue on these methods and the perspectives they reveal. DCA has been approved by the APA to offer four workshops in this area at the annual meetings starting in 2014. The goal of the first DCA workshop, an AIA/APA joint colloquium, is to begin a dialogue by highlighting some novel research methods relevant to the broad membership of the AIA/APA. It addresses digital applications across a range of classical studies, from linguistics to literary allusion, historical social networks, papyrology, and the latest applications of three-dimensional imaging techniques in archaeology. The panel provides an introduction to a rapidly evolving set of methodologies and highlight how the lingua franca of digital methods can foster research that combines disciplinary perspectives.
Of interest to the AIA membership is the presentation by Rabinowitz entitled "Living Pictures," which discusses emerging computational techniques for

extraction of three-dimensional (or equivalent) information from standard digital photographs. He focuses on two techniques, photogrammetry and reflectance transformation imaging (RTI) that offer a lower barrier to entry, in terms of both expertise and expense, than more-familiar techniques such as laser scanning or three-dimensional modeling. Rabinowitz discusses experiments with these techniques carried out at the site of Chersonesos in Ukraine from 2006 to 2008 and reviews the subsequent rapid progress in the field.

Another presentation of particular interest to AIA members is "Social Network Analysis and Ancient History." Cline draws on social network theory developed by archaeologists and others (Tom Brughmans on networks in archaeology, Carl Knappett on material culture, Cyprian Broodbank on island interactions during the Aegean Bronze Age, Fiona Coward on ancient Near Eastern artifacts) to carry out an analysis of the social networks of Pericles, Philip II, and Alexander the Great. She demonstrates that it is possible to search for patterns by gender and ethnicity or by clique or cluster, and that it is also possible to use social network graphs as teaching tools or as data visualizations that provide guides to complex stories, such as the conspiracies in the narratives of Philip and Alexander.

At the intersection of material and textual culture is the presentation "After Integrating Digital Papyrology." Three members of the Integrating Digital Papyrology project, Baumann, Cayless, and Sosin, review lessons learned regarding digital projects, how they might apply to those starting new projects across a range of fields, and how different digital infrastructures might change our understanding of the phenomena under study. Two papers on text reuse in classical literature are combined into a presentation called "Approaches to Greek and Latin Text Reuse," with Bernstein addressing the discovery and assessment of allusion and intertextuality with digital methods, and Berti addressing the storage and visualization of these textual connections after they are found. The presentation by Mambrini entitled "The Ancient Greek Dependency Treebank" introduces the creation and use of a large-scale system of annotating Greek texts for syntax, allowing for advanced linguistic and literary study.

After Integrating Digital Papyrology

Ryan Baumann, Duke University, *Hugh Cayless*, Duke University, and *Joshua D. Sosin*, Duke University

Duke University recently completed Integrating Digital Papyrology (IDP), a five-year project supported by the Andrew W. Mellon Foundation. This project was aimed at (1) uniting the Duke Databank of Documentary Papyri, the Heidelberger Gesamtverzeichnis der griechischen Papyrusurkunden Ägyptens, and the Advanced Papyrological Information System under common, standards-based, sustainable technical control; and (2) erecting a technological framework for open and transparent, peer-reviewed, version-controlled, community-based, scholarly curation of these projects. Since its launch in 2010, more than 600 users have registered as contributors. More than 5,500 new texts have been entered. More than 20,000 discrete edits have been committed.

In this session, three IDP team members offer insights into lessons learned (through both success and failure), with a view to framing principles and expectations for prospective digital classics projects:

- Plan your attack carefully; attack your plan constantly.
- There is no silver bullet. The "perfect" solution cannot be built and could not survive.
- Complexity is irreducible—it can be moved, even hidden, but must be faced.
- Redundancy and duplication are not always the enemy; not every efficiency is your friend.
- Use standards wherever possible; work to change them wherever necessary.
- Product is process; there is no product without careful management of scholarly workflows.
- Start at the end: user expectations and interface design must not be an afterthought.
- Sometimes it pays to "think small." Thoughtful infrastructure development can have profound higher-order impact.

These principles are not unique to digital projects. That is the point. Many challenges in the digital arena have clear correlates in the nondigital realm.

We close with a pressing challenge facing digital classics—one as much social and cultural as it is technological. Digital classics is at a stage in which many of the most urgent needs seem to replicate activities that the field treats as already done: editions, translations, citation schemes, structured information around geography, prosopography, chronology, bibliography, and the like. Mere migration of existing resources to the digital space won't suffice; we must reimagine what such infrastructure can be and do under a twin regime of human- and machine-actionability. In that process, the discipline cannot afford to outsource the "tech" or deprecate it as "services rendered." It must plot a research path in which "digital" and "classics" are equal partners.

Approaches to Greek and Latin Text Reuse
Neil Bernstein, Ohio University and *Monica Berti*, University of Leipzig

Text reuse, which subsumes quotation, allusion, and adaptation, is an important aspect of style and meaning in classical literature. This joint presentation introduces two complementary approaches to the study of text reuse using recently developed digital tools. Bernstein demonstrates how to quantify the comparative rates of text reuse among the different poets in the Roman epic tradition by using the Tesserae interface. Berti uses a new digital corpus of Greek text reuses of lost works developed by the Perseus Project as the basis for a new model of scholarly publication in a born-digital environment for the representation and access of instances of text reuse.

Tesserae (tesserae.caset.buffalo.edu) searches for matching two-lemma phrases in a corpus of over 200 Greek, Latin, and English poetic and prose texts. It scores matches on a 1–10 scale by applying an algorithm accounting for the distance between the words in the parallel contexts and the frequency of their occurrence in the source and target texts. The study compares epics from Lucretius' *De rerum natura* through Corippus' *Johannis* against each preceding epic and a variety of

control texts (including non-epic hexameter, elegy, comedy, and various genres of prose). Reuse rates of Virgil's *Aeneid* by every subsequent epic are far higher (typically 200% or more) than the reuse rates of prose texts such as Caesar's *Bellum civile* by any epic. These observable differences confirm the assumption that epics should reuse phrases from epic more frequently than prose. Breaking the comparison down by individual books of epic enables the user to visualize the relative importance of different texts at various points in a narrative. Some books of Flavian epic are more "Virgilian" or "Ovidian" than others in terms of their rates of reuse of each text. This project attempts to expand the study of literary allusion from individual readings of local contexts toward a quantitative assessment of the interactions between Roman epic poets.

The second part of this presentation describes the work done in Perseids (sites. tufts.edu/perseids/) to establish conventions and infrastructure for representing textual relationships and their qualities. The project focuses on the creation of a digital corpus of Greek fragmentary authors, i.e. quotations and text reuses of lost works by other authors. The digital representation of instances of text reuse means the transformation of textual relationships into machine actionable annotations. This process offers the possibility to represent text reuses inside their contexts of transmission and therefore as contextualized annotations about lost works. Starting with TEI XML-encoded versions of both print collections of fragmentary authors and surviving works, the goal is to extract a set of machine actionable quotations and produce canonical citations (CTS and CITE URNs expressed with an RDF triplestore) via forms of string matching. Annotations of both source and derived texts are added, including emendations to the XML, notations of syntactical similarity detected with treebank grammar techniques, and notations of translation alignments. The result is a set of richly annotated text reuse relationships that can be addressed for various types of investigations. These include the creation of a dynamic lexicon of re-used words and text reuse visualizations, exploration of text reuse across languages, and the establishment of nano-quotations as the basic form for representing instances of text reuse in digital libraries.

Social Network Analysis and Ancient History
Diane Cline, University of Cincinnati

This paper demonstrates the utility, and sometimes futility, of using Social Network Analysis (SNA) in ancient history. I have been experimenting with SNA and the free downloadable tool NodeXL in the study of Pericles, Philip II, and Alexander the Great, as well as the Amarna Letters. I have also explored limiting factors and discuss where SNA might not work as well. My conclusion is that SNA is particularly useful for pointing the researcher towards a topic for future exploration and is not an end in itself but a tool for noticing patterns that might not be evident from a linear reading of ancient sources in text form. SNA produces visualizations based on relationships, or networks, drawn from texts. It can show cliques or clusters and structural holes and can provide quantitative analysis of the tight-knittedness of social groups, allowing for comparisons between them.

While the past decade has seen a slight increase in the use of SNA by ancient historians and archaeologists, some literature already exists. Alexander and

Danowski of the University of Illinois at Chicago published an article entitled "Analysis of an Ancient Network: Personal Communication and the Study of Social Structure in a Past Society" (*Social Networks* 12 [1990] 313–35) analyzing Cicero's letters for social relations between senators and knights. However, their article appeared in a Dutch journal and its publication went virtually unnoticed by ancient historians. In 1993, Padgett and Ansell studied the rise of the Medici family in the 15th century through social relations, although, that article too, escaped the notice of most historians, having been published in the *American Journal of Sociology*.

Most network-analysis studies involving the ancient world to date have been done by archaeologists and have usually been concerned with artifacts, for those, too, have discernible networks, usually based on excavation context and association but also involving areas of origin in the case of imported objects. Such scholars include Brughmans on networks in archaeology, Knappett on material culture, Broodbank on island interactions during the Aegean Bronze Age, and Coward on ancient Near Eastern artifacts. One of the most thorough studies is that by Graham, published in 2006, on Roman brick-layers in central Italy. Studies concerned specifically with texts and ancient history are fewer but have been spearheaded in recent years by Malkin of Tel Aviv University, who has convened a conference and has been an advocate for using a network approach to understand relations between individuals and city-states in the Classical period.

In my oral presentation, I review this literature briefly, then demonstrate the usefulness of SNA by showing my analyses of the social networks of Pericles, Philip II, and Alexander the Great. In all cases, I demonstrate how one can search for patterns by gender and ethnicity or by clique or cluster and how one can also use the graphs as teaching tools or data visualizations to serve as guides to complex stories, such as the conspiracies in the narratives of Philip and Alexander.

Living Pictures: Computational Photography and the Digital Classics
Adam Rabinowitz, The University of Texas at Austin

This paper presents emerging computational techniques that allow the extraction of three-dimensional (or equivalent) information from standard digital photographs. It focuses on two techniques: photogrammetry and reflectance transformation imaging (RTI). Photogrammetry involves the extrapolation of three dimensional information from digital photographs taken of the same subject from different positions; RTI combines a series of photographs taken of the same subject from the same position, but with different lighting, to create still images that can be interactively relit. These techniques have demonstrated applications in archaeology, epigraphy, numismatics, and sigillography, as well as other areas of classics research. They offer a much lower barrier to entry, in terms of both expertise and expense, than more-familiar techniques such as laser scanning or three dimensional modeling. Much of the software involved is either open source or relatively inexpensive and fairly easy to use; both software and photographic capture methods are simple and well documented; and the data sets produced are easier to disseminate and archive than standard three dimensional models. Photogrammetry is now increasingly used to document and study the results of

archaeological excavation, while RTI is widely applied to objects for which surface relief is important.

Over the last two decades, laser scanners and computer-generated three dimensional models have received the most attention in the field of digital heritage documentation. Laser scanners are expensive, however, and the hardware, software, and technical expertise necessary to generate and manipulate three dimensional models are usually out of reach for small projects or individual researchers. There are also serious barriers to the documentation, long-term preservation, and dissemination of these models, which have implications for future research. A quieter revolution—the near-total shift from film to digital photography—is arguably more important for classics. Digital cameras are inexpensive and are already in use in most classics research projects involving visual information. Digital photographs are easy to archive, since well-established preservation standards already exist. At the same time, software that employs algorithms to extract additional information from digital images has grown much more powerful and easier to use. This paper discusses early practical experiments in the use of both these techniques at the site of Chersonesos in Ukraine from 2006 to 2008, and then reviews the present state of the field—which has progressed rapidly since that time—with reference to several current research projects.

The Ancient Greek Dependency Treebank
Francesco Mambrini, Deutsches Archäologisches Institut, Berlin

The aim of this presentation is to introduce the practice of linguistic annotation by focusing on the Ancient Greek Dependency Treebank (AGDT), promoted by the Perseus Project. Treebanks are text corpora where each word is annotated with information on morphology and syntactical relations. The recent appearance of a syntactically annotated corpus of Greek and Latin texts is a unique opportunity for scholars. On the one hand, some of the most sophisticated technologies for corpus-based research can be made available to the community of classicists. On the other hand, the expertise of philologists can be put to use for the task of word-by-word annotation. With treebanks, the new editors will be able to encode their interpretation of ancient texts in a machine-actionable format, producing texts that can be searched for specific syntactic phenomena. Although the literature on treebanks is vast, the potential relation between annotated corpora and critical editions is still virtually unexplored.

The work of annotation is illustrated by focusing on a concrete example. I take Sophocles, *Trachiniae* 962–3 as a case study. This 11-word sentence is apparently harmless, yet an annotator will be immediately confronted with a series of questions, for some of which different solutions have been already debated in previous scholarship. The issues that an annotator will face range from fine-grained grammatical details to fundamental problems, such as whether a model of annotation used for spoken corpora, where utterances are often interrupted and restarted, is more useful for a performance-oriented genre like Greek tragedy than a paradigm built around strict syntactic coherence.

This exposition thus shows that the work of treebanking has two great advantages to offer:

1. It forces an annotator to confront centuries of classical scholarship on a word-by-word basis and on a wide range of questions (from philology to literary criticism).
2. It can challenge him to rethink the model of linguistic interpretation of literary texts.

Most importantly, syntactic annotation is, by nature, a collaborative enterprise that involves expertise at different levels. From scholars interested in critical editions and linguistic interpretations, to students working to improve their linguistic skills by tackling the ancient texts in their original forms, all may be involved in the task.

SESSION 3B
Epigraphy and Society in the Roman World

CHAIR: *John Bodel*, Brown University

Family Ties? Octavia, Gamala, and the Earliest Phase of a Sanctuary of Bona Dea at Ostia
Mary Jane Cuyler, University of Sydney

The sanctuary of Bona Dea located in Region V of Ostia has played a major role in the scholarship of the Late Republican landscape of Rome's port city. Because of the absence of excavation publications, however, much of this work has been highly speculative. In 1970, excavators uncovered an inscription in the bedding layer for a floor (*AÉpigr* 2004, 361). It records some building projects at the sanctuary funded by Octavia, daughter of Marcus and wife of Gamala. Although the inscription was found in secondary deposition and is not easily datable, Cébeillac (*MÉFRA* 85 [1973] 519–553) tentatively dated it to the early first century B.C.E. As one of few published finds from the excavations, Octavia's inscription alone has tied the sanctuary to the Late Republican period.

Cébeillac's dating of the inscription focused on a hypothetical reconstruction of Octavia's family based on a letter of Cicero to Atticus (*Att*. 12.23) that mentions a certain Gamala, son of Ligus. Cébeillac identified Octavia as the grandmother of the Gamala in Cicero's letter and the wife of Publius Lucilius Gamala "Sr.," whose career is outlined in a much-contested inscription from Portus (CIL 14 375).

This proposed family tree is highly problematic. Many men from the Gamala clan are attested at Ostia, but none can be certainly correlated with Octavia, who appears nowhere else in the epigraphic record. Moreover, the word "Gamala" is just one of five textual variants at this point in *Epistulae ad Atticum* 12.23, so Cicero may not have known a person named Gamala. Finally, the difficulty of using this inscription as a firm anchor for dating the sanctuary is demonstrated by the fact that the career of Gamala, "Sr.," has recently been lowered by about 40 years, with the result that both Octavia's chronology and the earliest phases of the sanctuary have been similarly revised (Cébeillac-Gervasoni, *JRA* 57 [2004] 75–81).

Octavia's inscription provides insufficient evidence for a Late Republican phase of the sanctuary of Bona Dea. Archival photographs and elevation drawings published in Falzone's recent study reveal no clear evidence of an earlier structure, and Octavia's inscription was found in a late floor level (*ArchCl* 57 [2006] 405–445). Prioritizing the evidence provided by the archival material as well as the visible remains of the existing structure, I suggest that the earliest phase of the sanctuary is late Augustan, and I contextualize Octavia's euergetism within the Early Imperial landscape of Ostia.

East and West: A Comparison of Female-Sponsored Benefactions in the Roman Empire
Rachel Meyers, Iowa State University

Quintia Flaccina of Munigua in Hispania Baetica paid for a temple and a silver statue for the Genius of the town, and she sponsored a banquet for the townspeople (both sexes) upon its dedication in the second century. Terentia Aeliane and her sister Terentia Flaviane, in the middle part of the second century, are listed as contributors to the Synedrion of the Kouretes in Ephesus. Quintia Flaccina ostensibly used her money to sponsor a monument that could be seen and appreciated by the whole town of Munigua and to provide a meal for its citizens. In contrast, the two sisters in Ephesus contributed funds to a select group within the town. These two dedications are exemplary of some of the differences in the benefactions made by women in different parts of the Roman empire. In the west, women were more likely to provide money for a banquet, a temple, or public statues, but women in the east gave money more often to particular (religious or occupational) groups or organizations within their towns. While a number of studies in the last 15 years have discussed benefactions by women, a systematic study arranged geographically and chronologically is lacking. Thus, this paper presents the findings from ongoing research into the specifics of female-sponsored philanthropy with an eye toward recognizing patterns in the type, location, and date of benefactions provided during the donor's lifetime or established through her will. The goal of this large study, currently encompassing more than 300 honorary inscriptions, is to determine the reasons for these trends in giving, such as social status, a town's tradition of donating, bestowal of certain titles (secular or religious), or other local customs. A brief overview of male-sponsored philanthropy is also included for the purpose of comparison.

The benefactions of Quintia Flaccina, Terentia Aeliane, and Terentia Flaviane, among several others, are presented so that we might compare the philanthropy of women in the east and the west. In addition, these two donations, set within the context of other donations by women, are analyzed to explore Roman attitudes toward patronage and the social, legal, and financial status of women across the empire. Does patronage by women tell us something about Roman attitudes toward patronage in general?

Contested Foundation Myths and Elite Competition at Imperial Aphrodisias

Ann M. Morgan, The University of Texas at Austin

On three relief panels from the Civil Basilica at Aphrodisias are found images of Bellerophon, Gordios, Ninos, and Semiramis, all civic founders. Although scholars have interpreted these as an expression of collective identity, contemporaneous epigraphic evidence suggests that foundation narratives other than those depicted were present in the community. This paper argues that the benefactor's choice of founders resulted from intrapolis rivalries within the Aphrodisian elite in the Flavian period. Building on recent scholarship regarding kinship diplomacy and cultural memory in Roman Asia Minor, this paper examines the deployment of foundation legends at Aphrodisias as a strategy for promoting individuals and families in the context of aristocratic competition.

Among the surviving honorific inscriptions from Aphrodisias, 20 individuals from a few families are described as descendants of the joint founders (*synektikotes*) of the city. This descriptor refers to Aphrodisias' designation as a polis in the early second century B.C.E. Analysis of the chronological distribution of this phrase demonstrates that both its formalization as an honorific title and its highest concentration occurred in the late first century C.E., during the period when the basilica reliefs were produced. "Cofounding" benefactors employed this title to associate themselves and their families with the shared history of the community and to justify their social standing vis-à-vis their station as members of the long-established elite. The title appears to have been a strategy adopted in response to the recent rise of new civic benefactors who advertised their Roman citizenship and relied on imperial or provincial connections to affirm their civic status.

One benefaction performed by this new imperially connected elite was the basilica with its reliefs; conspicuously, the foundation myths chosen to decorate this building pass over the narrative of "cofoundation." Instead, they illustrate the remote history of the city and attempt to associate Aphrodisias with polities in the province and empire. The inclusion of these foundation scenes not only establishes a similar connection between dedicator and local past but also rhetorically obscures the civic claims of "cofounding" families. Considering the basilica reliefs alongside the "cofounding" inscriptions highlights the dynamics and tensions between local and Roman identities and sheds light on how local benefactors manipulated a city's history for personal ends. This selection of foundation legends for public display was not an undisputed effort to construct a universal civic identity but rather an example of the contentious nature of local pasts persistent in elite benefactions across Roman Asia Minor.

Beyond *magicae vanitates*: Medical Science and Local Religion in Two Inscribed Bronze Tablets from Gallia Cisalpina (*CIL* 5 6414–15)

Tiziana D'Angelo, The Metropolitan Museum of Art

With their enigmatic medical prescriptions and religious dedications, the two bronze tablets discovered in the mid 19th century during the excavations of an aquaeductus in Ticinum, in the Roman province of Gallia Cisalpina, together represent an invaluable document for the study of ancient Roman medicine, as well

as an absolute epigraphic unicum. The first edition of the two inscriptions was published by Mommsen in 1869 (*CIL* 5 6414–15), and in the following decades a scholarly debate arose over the restoration of the texts. However, we lack a recent and comprehensive study, which would be necessary to revise old positions and assumptions in the light of the abundant research that has been conducted on ancient medicine in the last decades.

In this paper, I aim to reassess the value of these inscriptions within their archaeological, historical, and cultural context. Based on the evidence collected from the medical papyri of Roman Egypt, the Vindolanda Tablets in Britain, and the manuscript tradition of the Greek and Roman medical authors who were active across the empire, I propose some crucial revisions to the edited versions of the text. These philological observations, combined with an accurate analysis of the epigraphic medium, allow me to shed new light on the nature and purpose of these inscriptions. I argue that the inscribed recipes were not generic remedies, as has been traditionally suggested, but that they had a scientific foundation and may have been related to the treatment of a specific disease. I also investigate the problematic issue of the function of the two tablets. I suggest that they were not *sortes*—that is, lots used in a kind of divination—but were more likely ex-votos associated with the cult of healing gods as well as water deities and that they display fundamental aspects of the religious syncretism that developed in rural areas of Gallia Cisalpina during the Middle to Late Imperial period.

Mithraic Practice on Hadrian's Wall
Eleri H. Cousins, University of Cambridge

In this paper, I examine diversity in Mithraic practice within one particular region: the forts attached to Hadrian's Wall, along the northern frontier of Roman Britain. Religion and ritual in general at Hadrian's Wall forts is a relatively neglected topic; discussion of religious activity is often limited to simple enumeration of the deities found on inscriptions, and in-depth analysis of the role religion played in the construction of military community is largely lacking. The cult of Mithras in Britain has been reasonably well studied; most studies, however, have focused on generalizations that can be made about the functioning of the cult in Britain or with respect to other provinces. Here, then, I ask what a tighter regional focus may show us about the role of Mithras' worship in military life.

Mithraism is quite well represented among the epigraphic records on Hadrian's Wall of military communities. Mithraea have been discovered and excavated at three of the wall forts, Housesteads, Carrawburgh, and Rudchester, and there is epigraphic evidence for the worship of Mithras at one more, Castlesteads, although the location of the Mithraeum is as yet unknown. Although each of these wall forts has produced only three or four dedications to the god, there do seem to be discernible patterns in the way each community refers to the god. Here, I look at the epigraphic evidence from each fort in turn, incorporating other archaeological evidence when appropriate, before laying out the possible conclusions we can draw from them.

In general, the epigraphic evidence paints a picture of the various auxiliary cohorts exercising considerable theological independence and variation within

a region often seen as quite homogenous, at least with respect to military culture. On the one hand, there seems to be a pattern with regard to the dedicators; the initiates at each Mithraeum would have worshiped at altars that had been almost exclusively set up by their commanding officers, tying the hierarchy of the fort into the hierarchy of the cult; despite their placement in the same region and military network, however, it seems that each community nonetheless made its own decisions regarding its precise interpretation of the identity of the god it worshiped, choosing to emphasize different aspects of Mithras/Sol. This is taken to an extreme of theological complexity with the worship of Mithras Saecularis at Housesteads and to an extreme of heterogeneity by the dedicators at Rudchester.

Britons Abroad in the Roman Empire: Reinvention of an Ethnic Origin
Tatiana Ivleva, Leiden University

The number of contemporary projects that focus on the presence of foreigners in Roman Britain has doubled in the recent decade, although there has been hardly any research on the presence of Britons overseas. This paper fills this gap by looking at Britons who, voluntarily or forcedly, moved to continental Europe in the period of the first to third centuries C.E. Using primarily epigraphic evidence, the paper traces the Britons and points the places on the continent where these emigrants settled. However, the main focus is on an exploration of how persons of British descent that moved for various reasons to the continent identified themselves and on the examination of the differences in the projection of an origin between those people who migrated and those who stayed in Roman Britain.

The epigraphic evidence indicates that there was variety in display of ethnic identities both within and outside of Britain, although when these inscriptions and military diplomas are examined by century a pattern seems to emerge. The label *natione Britto* became a popular form of identification for the Britons settling on the continent in the second century, but it is not attested in the inscriptions recorded in Britain. I propose that the ethnic marker *Brittones* was actually a Roman construct, one imposed by the Roman government after the invasion of Britain in 43 C.E. in order to speed up the integration of the natives into the Roman orbit as well as to prevent further intertribal warfare. Although the Romans appear to have encouraged the use of this ethnic name to construct a supraregional identity, the absence of such a label within Roman Britain suggests that such attempt failed in the province but achieved some success among Britons living abroad. I demonstrate that the employment of the Roman ethnonym was adopted by the second generation of mobile British individuals, who in this way were able to reinvent their ethnicity in the absence of a regional connection with the homeland.

In sum, the paper shows the significance of the act of moving to another territory within the Roman empire, which has profound influences on the identity reformation within the mobile groups. For Britons abroad, moving provided a new ground for the growing of a new form of ethnic identification that was, in fact, the adopted Roman construct.

SESSION 3C
Athens and Attica

CHAIR: *Margaret Miles*, University of California, Irvine

Architectural Repairs in the Archaic and Classical Periods
Nancy L. Klein, Texas A&M University

In ancient Greece, the construction of a temple was an expensive undertaking. The cost to quarry, transport, and dress the stone blocks was significant, and there were many opportunities for damage. Inscriptions tell us that blocks were inspected upon arrival in the sanctuary, and officials could levy fines and require repair to pieces that were damaged during the construction process.

In this paper, I examine examples of repairs to the architecture of the small limestone buildings that stood on the Athenian Acropolis. More than a dozen limestone architectural elements from Buildings A and E have evidence of damage that informs us about the timing and methods of repair. In Building A (560–550 B.C.E.), the damaged area was prepared with a cutting to receive a carefully shaped stone patch. A hole was drilled into the block and through the patch, and molten lead was poured into the hole to secure the repair. Based on the position of these patches, this work must have been done before the block was placed on the building. This evidence tells us that even the blocks of sacred structures were damaged and repaired during construction. Although this technique was successful in attaching small pieces, it was problematic. The limestone was liable to fracture around the lead, while the relatively soft metal was also vulnerable to pressure. In Building E (early fifth century), the stoneworkers also cut out the damaged section and inserted a patch, but the lack of drill holes or lead suggests that they used a simple mortar or stucco to keep them in place. Another method of repair is seen in the patching of a corner triglyph from Building A. Damage to the surface was simply filled with molten lead, which was subsequently painted to conceal the repair. These examples from the Athenian Acropolis contribute to our knowledge of architectural repairs in the Archaic period, which were previously known at only a few other sites (Aphaia I, Aegina) and provide evidence that repairs took place during the construction process as described in later inscriptions. In the Classical period, the next generation of temple builders would use iron pins to repair damaged pieces (e.g., on the Erechtheion), having learned from experience that drilling holes and pouring lead was not the best method of repair.

The Claw-Tooth Chisel and the Hekatompedon Problem: Issues of Tool and Technique in Archaic Athens
Jessica Paga, Washington University in St. Louis

The claw-tooth chisel is a tool of unique significance for studies of Greek sculpture and architecture. Its origins, evolution, and uses have long been debated, with important chronological repercussions. Some of the most controversial statues and structures from the Archaic and Early Classical periods have been dated based on

the presence or absence of claw markings, particularly in Attica. The chronological progression of structures on the Athenian Acropolis, for example, has fluctuated drastically over the past century, depending on when one chooses to date the introduction of the claw-tooth chisel for architectural members and where the markings of the tool have been detected. In addition, some kouroi and korai have been adduced as evidence for an early adoption and use of the claw on large-scale stone sculpture, which has resulted in a divide between the application of the tool to sculpture vs. architecture. Most contemporary accounts of the archaic Acropolis are based on this assumption—namely, that the claw-tooth chisel was adopted in the Early Archaic period for sculpture but not applied to architectural elements until later in the sixth century. The implications of this division have had far-reaching effects on both the dating and siting of monuments on the Acropolis.

I argue instead that the claw-tooth chisel was adopted in Greece early in the second quarter of the sixth century and was simultaneously used for both sculpture and architecture. This argument has significant ramifications for the chronological and topographical problems on the archaic Acropolis. The dating of the claw is inextricable from the topography of the Acropolis and the arguments that have been posited for the location of the so-called Hekatompedon, or Bluebeard Temple. To establish this revised chronology for the introduction and evolution of the claw, I undertake a reinvestigation of the topographical problems on the archaic Acropolis, including the Dörpfeld foundations and predecessors to the Periclean Parthenon. This examination of the siting of structures on the Acropolis allows for a better understanding of when and how the claw-tooth chisel was used, which in turn generates a more thorough picture of how, when, and where the structures were built. Ultimately, a reevaluation of the origins and evolution of the claw is necessarily tied to a reconsideration of the siting of the Bluebeard Temple, and the one cannot be altered without critical changes to the other.

The Mutilation of the Herms: Violence Toward Images in the Late Fifth Century B.C.E.

Rachel Kousser, City University of New York

The mutilation of the herms is among the best-documented and most notorious episodes of the Greeks' violence toward their own religious images. It has been examined with regard to its political ramifications, particularly its impact on the Sicilian expedition, a major military initiative of the Peloponnesian War. So, too, the episode has been discussed in terms of its religious implications, given the herms' key role in popular ritual. But while the literary sources describing the affair have been extensively mined, scant attention has been paid to the archaeological evidence. And there has been little analysis of the incident from an art historical perspective, as an example of violence toward images and the responses it evoked in classical Athens.

This paper draws on archaeological and artistic evidence to analyze how the Athenians responded to the mutilation of the herms. It identifies a range of visual strategies, from the retention of intact monuments to the repair of damaged ones and the ritual disposal of those too damaged to restore. It examines as well the creation of countermonuments, above all the large-scale, prominently displayed

stelae that detailed the auctioning of property from those convicted in the affair. Taken together, these works suggest a forceful yet nuanced response to the attack in its immediate aftermath, one centered on the maintenance of traditional religious images and the erection of new monuments celebrating the power of the Athenian demos.

The mutilation of the herms also has significant broader implications for the study of Late Classical Athens. Historians of the era have often highlighted the intellectual skepticism and questioning of established norms by orators, playwrights, and philosophers. What the mutilation and its response demonstrate is the gulf between such elite speculation and popular practices, above all in the sphere of religion. Beginning with symbolic attacks on images, the episode engendered tremendous civic upheaval and concluded with real and extensive violence toward the suspected herm mutilators; in this way, the events of 415 revealed through their unprecedented scale and nature one of the pressure points of late fifth-century Athenian society. A close analysis of the episode thus has much to tell us about the contested status of the Greek image in a time of radical social, political, and intellectual ferment; it also illuminates the evolving Hellenic discourse on iconoclasm.

Asklepios and Sarapis in Roman Athens: Reconsidering the Identity of Agora S 1068
Brian A. Martens, Creighton University

In May 1938, the American School of Classical Studies at Athens excavations in the Athenian Agora unearthed a small-scale, second- or third-century C.E. marble statue of a male divinity accompanied by a snake and staff (inv. no. S 1068) on the northern slope of the Areopagos. Since its discovery, the image has been identified as Asklepios, presumably because of the aforementioned attribute at the figure's left side. I argue that the statue depicts a hybridized version of two gods, Asklepios and Sarapis. Previously overlooked parallels for the statue elsewhere in the Mediterranean provide iconographic evidence for this new identification. The identification of this statue as a hybrid Asklepios-Sarapis fits within the religious culture of Roman Athens and, more broadly, of Roman Greece, where foreign gods routinely assumed and adapted the visual identities of their Greek counterparts. Cult activities were also taken up—namely, in this case, healing ritual. Iconographic syncretism played a critical role in the success of Sarapis and other Egyptian deities in Greece.

This new identification adds substantially to the scant archaeological evidence for the worship of the Egyptian gods in Athens. To conclude, the statue's archaeological context is explored. Its findspot in seventh-century C.E. destruction fill over a large residential establishment is perhaps near Pausanias' (1.18.4) placement of the Sarapeion, which is still unattested in the archaeological record. Although sculptures at urban sites such as the Agora are rarely recovered in their primary contexts, the location could provide evidence for a nearby sanctuary or shrine.

Roadside Religious Spaces and Personal Religious Experience: Three Athenian Case Studies
Johanna Best, Bryn Mawr College

The elusive phenomenon of personal or more day-to-day religious experience in Athens is often overlooked in studies of Greek religion, despite an abundance of smaller roadside religious spaces within the city. While it is possible that the state may have played a minor role in the performance of rituals and maintenance at these sites, the sizes and locations of these structures, as well as the kinds of dedications, indicate that a more informal religious practice may have flourished.

Of the many Athenian roadside religious sites, this paper selects three as case studies for understanding how roads and roadside spaces served as areas for religious activity and how the religious expression of individuals and groups may be reflected in the archaeological record. The first, an open-air shrine dedicated to Nymphe and located on the slope of the Athenian Acropolis, appears to have been in use for at least four centuries and was part of a residential neighborhood. The dedications found at this site suggest that it was associated with marriage rituals. Next, a naiskos located in southwestern Athens in the neighborhood known as the Heptachalkon also dates from the Archaic period and may have been destroyed in the Persian War. Offerings found at this site imply that it was dedicated to a local hero or deities associated with nearby industrial areas. Finally, the Altar of Zeus Herkeios, Hermes, and Akamas, located just inside the Dipylon Gate on the Panathenaic Way, may have served as a special site of worship for the tribe Akamantis but also likely would have been used by travelers.

These three examples not only illustrate the wide variety of forms of roadside religious spaces in Athens and indicate their broad range of functions, including familial concerns, economic interests, and social grouping, but also allow a glimpse of a personal aspect to religion in ancient Greece that is often overlooked or inaccessible.

SESSION 3D
Urban Life and Infrastructure at Pompeii

CHAIR: *Steven Ellis*, University of Cincinnati

Finding the First Pompeii: Excavations into the Earliest Urban Activity at the Porta Stabia
Allison L.C. Emmerson, Indiana University Bloomington

The development of pre-Roman Pompeii has been a topic of debate for more than a century. Particular attention has been paid to the structure of the so-called Altstadt, the area of irregular streets surrounding the forum on the southwestern side of the city, and more recently to the growing number of finds of walls in *pappamonte*, a local tuff used exclusively during earliest urbanization. The *pappamonte* structures, which have been encountered across the Pompeian plateau and some of which presage the orientation of the Roman-period city, have been dated to the sixth century B.C.E, during which time a defensive wall in the same material was

erected along almost identical lines to the final city wall. This evidence challenges the traditional idea that Pompeii grew gradually north and east from the Altstadt to reach its final form.

The research activities of the Pompeii Archaeological Research Project: Porta Stabia can now shed significant light on Pompeii's earliest urban development. The project, directed by Steven Ellis (University of Cincinnati), has excavated 40 trenches over two neighboring insulae—I.1 and VIII.7—which flanked the Porta Stabia and abutted the public zone of Pompeii's two theaters. The results, presented here for the first time, remain preliminary but indicate the original phases of development in this neighborhood and carry implications for the city as a whole. Notably, the discovery of a sixth-century B.C.E. *pappamonte* structure flanking the first iteration of the Via Stabiana further calls into question the Altstadt theory. Moreover, the project has revealed that this structure was spoliated, with its *pappamonte* blocks reused, in a subsequent phase of construction in the fourth century B.C.E. The fifth to fourth centuries B.C.E. have been seen as a period of substantial contraction or even complete abandonment of Pompeii, but the presence of such buildings suggests the duration of urban activity in this neighborhood and throughout the city. Structures lining the Via Stabiana in the fourth century B.C.E. indicate the route's continued or renewed use as a major thoroughfare connecting Pompeii to other urban centers in the southern Bay of Naples in a period prior to the rebirth of large-scale architectural projects.

Outside the Firebox: Archaeological Visibility of a Pre-Roman Ceramic Production Area in Pompeii, Italy

Gina Tibbott, Temple University

The recent discovery by the University of Cincinnati of a rare third-century kiln near Pompeii's Porta Stabia brings the city's early ceramic industry into sharper focus. That a ceramic industry of some size had existed in this neighborhood had already been suspected, given the earlier discoveries in the nearby area (Insulae VIII.7 and I.1) of other fixtures associated with pottery production. These included two levigation tanks, one of which contained an unfired clay deposit and a fill featuring under- or unfired ceramic material. Prior to the discovery of the kiln, however, these fixtures remained enigmatic and only indirectly tied to pottery production, given the multifunctional nature of the neighborhood as well as the rich variety of imported construction fills, which scrambled the picture. The discovery of the kiln now brings all these pieces of information into new light, and an examination of the assemblages associated with their use provides rich data for a clearer understanding of urban pottery production. The range of production facilities demonstrates the scale of activities that, although not seemingly intensive, still covered a fairly large area. These characteristics, and their urban spread, help establish something of an index of pottery-production facilities, which might otherwise only rarely be found in association; it was only through excavation of many trenches in nearby areas that all these fixtures could be uncovered and ultimately associated with the same activities and phase. Presented for the first time, this exploration contributes to a more nuanced understanding of the Pompeian ceramic industry in the archaeological record.

Religion and City Walls: Redefining the Identity of Pompeii
Ivo van der Graaff, The University of Texas at Austin

Among settlements throughout Late Republican Italy, relationships between fortifications and the protective deities of the city are common. In most basic terms, the gods protected the city, and in turn the citizens protected their gods by placing their sanctuaries within the safety of fortifications. The sculptures of divinities protecting the city gates of Volterra, Falerii Novi, and Perugia are the most evident manifestations of this relationship and also reflect political ties with Rome. At Pompeii, evidence indicates associations between Minerva, Venus Pompeiana, and the fortifications, but their nature has remained enigmatic.

Pompeians evoked Minerva at the city gates in various ways; a keystone depicting the goddess still decorates the Porta di Nola, whereas niches in the Porta Stabia and the Porta Marina reference her cult. Recent excavations at the Porta Stabia have uncovered remains of an early altar associated with two niches in the main passageway of the gate, suggesting a continuity of cult stretching to its construction in the late fourth century B.C.E. Initial excavations of the Porta Marina in 1861 also recovered three fragments of a terracotta statue of Minerva once placed in an aedicula in its southern bastion. Although published by Hermann von Rohden in 1880, the fragments subsequently vanished and were considered lost. In the summer of 2010, the director at Pompeii, Grete Stefani, rediscovered them, permitting their study for the first time in more than 140 years.

Beyond the gates, moreover, the Doric temple and the Temple of Venus used the fortifications as terracing structures, creating a powerful visual relationship with the defenses. Both carried political associations that defined the communal identity of Pompeii. Excavated metopes and votive statuettes connect the Doric temple to Athena Phrygia, whereas recent excavations at the Temple of Venus indicate a continuity of cult stretching to the foundation of the city. Epigraphic evidence points to Venus Pompeiana as a Roman appropriation of the Samnite goddess Mefitis Fisica, suggesting a complex relationship between civic identity, the fortifications, and the city's protective deities. Using a combination of archival research, art historical analysis, and archaeological evidence, this paper explores and elucidates the connection between the Pompeian fortifications and the two goddesses protecting the city. The results deliver fresh insights into Pompeian civic identity and raise new questions on the wider role of fortifications in the image of the city.

The Pompeii Forum Project Assesses the Lucius Mummius Pedestal in the Sanctuary of Apollo at Pompeii
John J. Dobbins, University of Virginia, and *Larry F. Ball*, University of Wisconsin–Stevens Point

Perhaps the greatest controversy in Pompeian studies today concerns the date of the monumentalizing of the forum and the adjacent Sanctuary of Apollo. This great urban development converted both the forum and the sanctuary into symmetrical, rectangular spaces within a quadriporticus, each focused on a temple. Traditionalists adhere to the second-century B.C.E. date for these urban developments, a date proposed by August Mau in the 19th century and by Amedeo Maiuri

and many others since. The more modern camp, led by the Pompeii Forum Project, sees these vast urbanistic changes as products of the earliest Roman phase at Pompeii, from the Sullan conquest in 89 B.C.E. to the Augustan period. The two sides of the debate are fundamentally different in approaches to evidence, rhetorical style, and conclusions (these differences are developed in the paper).

The forum and Sanctuary of Apollo were discrete entities separated by a wall of piers, which was permeable to provide communication. The pier wall delimited the edge of each space, and was wedge-shaped to mask the difference between their axes. It also supported the ceiling joists of the sanctuary's east and the forum's west portico. The pier wall therefore plays an important role in linking the two spaces urbanistically, structurally, and chronologically.

A critical component in the controversy is a pedestal in the Sanctuary of Apollo that bears the inscribed name of the Roman general Lucius Mummius, who sacked Corinth in 146 B.C.E. The inscription is in Oscan, as is consistent with the character of Pompeii in the second century B.C.E.; that is, it was a Samnite city. The Romans arrived only in 89 B.C.E. The Mummius pedestal has become a crux in the chronological debate, because for certain vociferous traditionalists it is the touchstone for a pre-Roman, second-century B.C.E. date for the monumentalizing of the Sanctuary of Apollo. To be sure, the pedestal with its inscription is an authentic product of the 140s B.C.E. In its current location, however, the pedestal is in a secondary context and provides no dating evidence for the monumentalizing of the sanctuary. This paper removes the inscribed pedestal from the debate and shifts the focus to stratigraphic evidence and to the pier wall between the sanctuary and the forum to confirm a Roman date.

The Afterlives of Honorific Statues in Pompeii
Brenda Longfellow, University of Iowa

An honorific statue is a portrait statue set up in recognition of someone by other members of the community. Generally erected in a public place, it ostensibly serves as a permanent reminder of the quid pro quo relationship between patrons and groups or individuals. But the permanence of such commemorative monuments is undermined by the many instances in which honorific statues were recarved or otherwise altered to express relationships with other patrons. This paper considers the honorific statues at Pompeii that were transformed or moved from one locale to another. These repurposed statues include a priestess in the Temple of Augustan Fortune whose face was removed; a heroic, bare-chested youth in the Macellum shrine whose hair has been recut; and a Caligula that was transformed into Marcus Holconius Rufus, a local magistrate, and then prominently displayed in a tetrapylon honoring the Holconii.

Taken together, these transformed statues serve as reminders that statues are not necessarily static over generations. Rather, communal interactions with honorific statues can reflect fluctuations in the relationship between dedicator and dedicatee as well between individuals and the larger community. While some relationships are magnified over time through the lens of honorific statues, as in the case of Holconius Rufus and his posthumous statue in the tetrapylon, others are calculatedly and publically diminished, such as the statue whose face was care-

fully removed. By considering the repurposed statues within their local contexts, this paper explores the reuse and reformation of the past and the manipulation of cultural and personal memory in Pompeii.

Retail Trade and the Occupation of Public Spaces in Pompeii
Riccardo Olivito, Scuola Normale Superiore di Pisa

The aim of this paper is to verify how merchants and retailers occupied the public spaces of a Roman city on occasions such as the weekly market (*nundinae*) or the daily trade. It also seeks to clarify which magistrates were involved in the control of these practices.

A very interesting case study is that of Pompeii. A dossier of inscriptions (from Via Marina, Via dell'Abbondanza, and the amphitheater) shows that the points of sale were assigned to individual traders for a period of which, unfortunately, we do not know the duration.

Probably the inscriptions from Via Marina (*CIL* 4 1768–69) and Via dell'Abbondanza (*CIL* 4 8432–33) are initiatives of individual sellers who occupied points of sale on public space, more or less permanently. These inscriptions do not signal the approval by city magistrates: we do not know, then, whether these traders operated illegally. The *tituli picti* of Via Marina and Via dell'Abbondanza, therefore, show only the will to occupy a point of sale in areas with a lot of human traffic and to prevent other traders and competitors from installing in the same place.

More useful are the inscriptions from the Amphitheatre (*CIL* 4 1096a,b; 1097a,b; 1115; 2485). With a simple and repetitive formula ("locus occupatus permissu aedilium" or "occupavit permissu aedilium", followed by the name of the retailer) they demonstrate that the authorization to occupy these positions was granted by the aediles.

These magistrates were involved in two main activities: on the one hand, as shown in the *Lex Irnitana*, in the management and control of markets and food supplies (*cura macellorum/cura annonae*); on the other hand, as demonstrated by the *Tabula Heracleensis*, in the care and management of streets and public spaces.

Probably the authorization was granted by the aediles, given the payment of a tax (*vectigal* or *manceps*), as shown by Ulpianus in the Digesta (18.1.32) and by one of the tablets from the archive of Caecilius Iucundus (J. Andreau, *Les Affaires de Monsieur Jucundus* [Rome 1974] no. 151) certifying the payment of a *manceps mercatus*.

The need to record the points of sale was great, especially on occasions such as the *nundinae*. In fact, as the famous "forum frieze" from the Praedia of Iulia Felix in Pompeii (2.4.3) demonstrates, during those days the forum was filled with a crowd of sellers who occupied every corner of the porticoes.

The Pompeii Quadriporticus Project, 2013: New Technologies and Preliminary Conclusions
Eric E. Poehler, University of Massachusetts Amherst, and *Steven Ellis*, University of Cincinnati.

The Pompeii Quadriporticus Project (PQP) recently completed its fourth and final campaign of architectural study of one of Pompeii's largest monumental buildings, the so-called Gladiator Barracks. To complete our work, the PQP deployed a suite of cutting-edge digital technologies, several applied for the first time in an archaeological context. In this paper, we focus on the results of these techniques for archaeological fieldwork and highlight some of the broader interpretations of the development and function of the quadriporticus gleaned over the last four years. The first technology explored is the use of portable spectrometers to analyze different mortars, including a comparison of the process and results of using an inexpensive do-it-yourself device vs. our precision instrumentation in collaboration with the Oxford University rock lab. Our interest was to see whether a $40 device could reveal sufficient distinction among mortars to help refine the interpretations made through visual analysis. A second analysis was made using the National Enodwment for the Humanities–funded DM web resource to compare, annotate, and link archival images, allowing our team to stand in the same place where a photograph, drawing, or painting was made and compare its content with what could be seen today as well as the observations in our database. The purpose of these digital techniques is to advance our understanding of the development of the quadriporticus and to determine how its presence and changing form altered the landscape of Pompeii. Therefore, this paper also briefly discusses the 250-year history of the building's evolution, its connections to and disconnections from the urban infrastructure, and the architectural design underlying its original conception and construction. In the end, our research reveals that rather than suffering a vulgar transformation into a barracks for gladiators, the quadriporticus instead played an increasingly central role in the civic life of pre-Roman and Roman Pompeii.

SESSION 3E
Approaches to Landscape in the Eastern Mediterranean

CHAIR: *Chris Roosevelt*, Boston University

Asking New Questions of Old(er) Data: A Case Study from Southern Euboea
Chelsea A.M. Gardner, University of British Columbia, and *Rebecca M. Seifried*, University of Illinois at Chicago

A reexamination of archaeological survey data collected in the 1980s and 1990s by the Southern Euboea Exploration Project has revealed a distinct pattern of densely packed tower structures on the peninsulas flanking ancient Karystos. The towers occupy a strategic location at the mouth of the southern Euboean gulf, directly across from the Attic mainland. A geospatial analysis of the individual tower sites, in conjunction with the information gathered from the archaeological

survey regarding site function and period of use and abandonment, produces a new interpretation of the cultural landscape of the Karystia and its broader role in the Aegean.

In addition to presenting new information about the region, this paper demonstrates the importance of revisiting archaeological data with novel analytical techniques. The application of digital and spatial analyses to older data is a valuable means of extracting further information beyond the expensive and time-consuming practice of revisiting sites on the ground. Moreover, understanding the limitations of data and the various methodologies that produce them is crucial for archaeologists embarking on new survey projects.

This paper builds on recent research on the towers of the Paximadi Peninsula, which is located just west of ancient Karystos. New data from the eastern peninsula, including the site of Kastri, is included to gain a more comprehensive view of the role that Karystos and its hinterland played in Aegean maritime affairs. Geographic information systems (GIS) software is employed to measure the physical and visual connections between contemporaneous towers, nontower sites, and other identifiable features within the region. Specifically, line-of-sight, viewshed, and cost-path analyses are used to identify the interconnections that may have existed during the Classical, Hellenistic, and Roman periods. The interspatial patterns that emerge from these results have important implications for our understanding of Karystos as an Athenian cleruchy as well as our interpretation of Euboea's capacity in social and political contexts beyond its shores.

A Sacred Landscape: Mapping Pilgrimage Around Mount Lykaion, Arkadia
Matthew Pihokker, University of Arizona

The vicinity of Mount Lykaion in southwestern Arkadia, the mountainous central region of the Peloponnese, is characterized by an exceptional number of rural sanctuaries that are often situated in remote and inhospitable locations. Despite the apparent inaccessibility of these cult places, pottery found in ritual contexts at many of these sites indicates that the region was a center of significant cultic importance from at least the Late Helladic to the Roman period, with a substantial and area-wide building program taking place during the Late Archaic and Early Classical periods. Moreover, archaeological and literary evidence alike indicate the presence of a complex network of roadways and trails linking the rural sanctuaries near Mount Lykaion not only with one another, but further afield, with large *synoikised* urban centers throughout Arkadia.

Broadly, this project aims to explore the application of geographic information systems (GIS) in analyzing the diachronic interconnectivity between sites around Mount Lykaion. Relying on the extensive study of ancient Arkadian roads by Yannis Pikoulas, together with firsthand accounts of periegesis or "ancient journey around an area," especially that of the second century C.E. traveler Pausanias, I argue that the assemblage of rural sanctuaries was a vibrant and popular destination for pilgrimage throughout the Peloponnese rather than a sparsely visited and isolated location. Then, in a specific case study focusing on one possible route during the fourth-century B.C.E. political reorganization of southwest Arkadia, I address questions concerning the logistics of ancient pilgrimage during this pe-

riod. In effect, the Arkadian landscape of Mount Lykaion, renowned throughout antiquity as wild and uncivilized, is revealed as a dynamic and interconnected center of both cultic and political activity.

Toward the Sunset: A New Reading of Pausanias' Travel in Sparta
Nicola Nenci, University of Edinburgh

Unlike many other Greek poleis, the city of Sparta has never experienced systematic archaeological investigations, and Pausanias' *Periegesis* is still the main source for those scholars who wish to reconstruct the plan of the ancient city. More than 10 years after the last full reconstruction of the city, the identification of many buildings and the paths of Pausanias' itineraries are still open questions. Notwithstanding the lack of excavations, modern scholars propose reconstructions of the Periegete's routes, but they mainly plot straight itineraries that omit large portions of the area included in the Hellenistic city walls.

Yet straight itineraries are not consistent with the narrative structure adopted by the Periegete for the description of other cities and territories, and they are not fully suitable for the topographical characteristics of the area of the ancient city.

This paper reassesses Pausanias' sojourn through Sparta as reconstructed by earlier scholars. First, it reviews the most relevant archaeological evidence that cannot be directly related to monuments mentioned by Pausanias: old discoveries, recent rescue excavation in the city, and topographically relevant points, such as water springs, hills, and bridges. In addition, my work takes into account buildings that have been pinpointed with monuments mentioned by Pausanias, such as the circular building and the stoa on its north, which have been recently identified, respectively, with the Skiàs and the Stoa Persiké. Reading Pausanias' text with new eyes, I combine the monuments he mentions with the entire body of archaeological evidence in an attempt to plot Pausanias' trek within the city; in contrast to previous scholarship, my interpretation of Pausanias' sojourn not only takes account of straight paths but also focuses on street junctions and radial plans. Last, I propose an approximate placement of monuments mentioned by Pausanias but absent from the archaeological record.

My work demonstrates that with only a few exceptions, Pausanias traversed the entire city within the walls and that the city plan and road network are substantially different from what has been hypothesized so far. This paper shows that archaeology and literature can profitably help each other and that the lack of archaeological evidence is not necessarily a limitation for the interpretation of literary sources. In the case of Sparta, Pausanias' text, when properly interpreted, does not conflict with archaeological evidence and can explain more than we currently know about the ancient city.

Constructing a Historical Narrative for the North Coast of Cyprus in the Iron Age: the Evidence from Lapithos
Stella Diakou, Bryn Mawr College

The archaeology of the north of coast of Cyprus is beset with problems: the inaccessibility of the region because of the current political situation, the limited scope

of previous archaeological projects, inadequate mapping, and an almost complete absence of excavated settlements. This paper attempts to overcome some of these issues and proposes a reconstruction of the political and cultural landscape of the north coast during the Iron Age (the time of the Cypriot city-kingdoms). The approach taken here follows current research models in Cypriot archaeology, which advocate a thorough study of the landscape as well as an approach intrinsic to the island and an effort to look at processes and developments over the *longue durée*.

Lapithos, an important center of the north coast during the Iron Age, suffers from problems of visibility in both the archaeological and literary records. While we know that the kingdom of Lapithos was abolished at the end of the fourth century B.C.E. by Ptolemy I Soter, there are in fact no textual references to Lapithos as a political entity prior to the fifth century. It is therefore surprising that at the end of the sixth century Lapithos was one of the first kingdoms in Cyprus to issue coins, giving us a terminus ante quem for the emergence of the kingdom of Lapithos. In this paper, I explore the developments on the north coast from the Late Bronze Age to the Archaic period and focus on the reconfiguration of sites and communication networks over time. In addition, I examine how the emergence of other contemporary centers, such as Toumba tou Skourou and Enkomi in the Late Bronze Age, as well as Soloi and Salamis in the Early Iron Age, influenced these processes on the north coast. Finally, I take into account research that has highlighted the fluctuating number and territories of Cypriot city-kingdoms in the Early Iron Age and explore why and how the kingdom of Lapithos was established in this context.

The narrative proposed here demonstrates the dynamic role of the landscape in site development and importance and indicates how internal (rise of polities on the west and east coasts) and external (emergence of the Assyrian empire) developments had a deep impact on the political and economic processes of the north coast. In addition, my approach emphasizes how a macrohistoric perspective can illuminate periods for which the archaeological evidence is still lacking.

Recent Investigations at the Hellenistic and Roman Settlement of Kom el-Dahab, Eastern Nile Delta (Egypt)

Gregory Marouard, The Oriental Institute of the University of Chicago

With the help of satellite imagery, the investigation of archaeological tell sites in the far north of the Nile Delta has recently revealed the existence of a substantial Hellenistic or Roman-period agglomeration covering an area of more than 30 ha. It is possible to see that it was founded according to a Hippodamian layout, which is typical for Hellenistic foundations. The site is characterized by domestic quarters of uniform dimensions, so-called insulae, remains of a temple and a theater, and a possible harbor installation. This settlement was situated at the northern end of an ancient branch of the Nile and occupied an extremely strategic position that facilitated the arrival of trade goods from the Levant and Cyprus to enter the central Nile Delta. It could therefore have functioned as a kind of *emporion* during a relatively limited time period and constituted, together with the cities of Alexandria, Herakleion and Pelusium, one of the main entry points from the Mediterranean Sea into Egypt. This site has never been noted before and presents an important

opportunity to investigate an archaeological site in pristine conditions that has not been excavated or explored. The name of this vast urban site remains unknown, but the nature of its relationship to other large cities of the central Delta region, such as Sebennytos or Mendes/Thmuis, will without a doubt determine its ancient toponym in the near future.

The investigation of the surrounding landscape of this site, particularly the evolution of its hydraulic environment, such as changes/shifts in the Nile branch and its connection to the sea, will also allow us to explain the reasons for its current isolation and will shed some light on the reasons for its quick abandonment during the Roman period.

This paper presents the research at this site, including the results of a detailed surface survey and a geophysical survey, which took place in September 2013 as a joint mission of the Oriental Institute and the Department of Classics at the University of Chicago.

A Comparative Analysis of Mapping Microtopography with Ground-Based and Aerial Photogrammetric Methods
Christopher H. Roosevelt, Boston University

One among many goals of the Central Lydia Archaeological Survey (CLAS) has been to record the surface configurations of sites discovered in the Marmara Lake basin, western Turkey, which are potential reflections of their subsurface remains and thus functional natures and chronologies. Since 2007, real-time kinematic global positioning system (RTK-GPS) techniques have been employed to record microtopographic changes at six sites, with resulting digital elevation models (DEMs) ranging in area from 1.5 ha to 23.3 ha. In 2013, an unmanned aerial vehicle (UAV) programmed for GPS-assisted survey flight was used to collect digital aerial photographs over five sites for photogrammetric processing, resulting in high-resolution DEMs ranging in area from 6.7 ha to 87.7 ha. The primary focus of microtopographic mapping using both techniques was a suite of second-millennium B.C.E. citadels, most of which were abandoned forever at the end of the Late Bronze Age, leaving Middle and Late Bronze Age architectural and other remains on and/or near the surface. CLAS fieldwork between 2007 and 2013 thus provides an excellent body of data for comparative analysis of these divergent methods of mapping surface microtopography. Analysis includes discussion of accuracy, efficiency (total area covered and rapidity of survey), ease of implementation, site suitability, and cost (equipment and labor). Preliminary results demonstrate that aerial photogrammetric survey is vastly more efficient, predictably, while ground-based RTK-GPS survey may be slightly more accurate. Both methods suffer variously from ground cover, making them suitable to particular sites only. Additionally, both methods require significant training for fieldwork and processing, while, given site suitability, the long-term cost of aerial survey may be far less than that of ground-based survey.

The Afterlife of a Hittite Monument

Peri Johnson, The University of Texas at Austin

To commemorate a military campaign to the region of classical Lycia, the Hittite king Tudhaliya IV constructed a sacred pool at a spring on a mountain slope in the Hittite borderlands on the west of the Anatolian Plateau. The Yalburt Yaylası Archaeological Landscape Research Project (or Yalburt Project) between 2010 and 2013 found the dense landscape of Middle and Late Bronze Age settlement and movement that provides the context for Tudhaliya's construction. But what about the afterlife of the pool? Using archival documents of the excavations of the Museum of Anatolian Civilizations in Ankara in the 1970s and the results of the survey of the Yalburt Project following a combined field and study season in 2013, this paper discusses the afterlife of the pool from the Early Iron Age through the Byzantine period. Blessed with an abundant spring used lightly, and possibly seasonally, from the Early Bronze Age to after the construction of the pool, the landscape of Yalburt gradually changed. In the Early Iron Age, the buildings clustered near the pool. The inevitable alteration of the pool began with the reuse of an inscribed block in the later Iron Age houses at the pool and the requirements of an ever-expanding settlement. The excavated houses of the Hellenistic period reflect a dense year-round settlement with a textile economy. This gradually shifted to become a seasonal settlement for pastoralists in the Roman period. When Yalburt became the settlement of a pastoral economy centered on the spring's waters in the Hellenistic period, the focus of the sacred landscape shifted 2 km farther up into the mountains to the sanctuary at the Şangır Mağaza sinkhole. In the Roman period, the Hittite pool was rebuilt, and water pipes distributed the water to the expanded settlement. In the Byzantine period, a cemetery came to dominate the lower ridge of Hellenistic and Roman settlement, and the settlement gradually shifted to the springs farther west. Tudhaliya's spring became a well known for its sweet, cool water. Water, like archaeological landscapes, is constantly shifting. Lakes appear and springs run dry. The excavation and survey around the settlement at Yalburt reveals the extent and temporality of these shifts.

SESSION 3F: Colloquium
Legions and Tribes: Archaeology in Eastern and Central Europe

ORGANIZER: *Daniel S. Weiss*, University of Virginia

Colloquium Overview Statement

In the early first century C.E., the armies of Augustus were campaigning along the Danube. By the 80s, threats from across the river had increased such that the Danube, from Vindobona (Vienna) to the delta, replaced the Rhine as the central military focus of the empire. The Danubian zone and the lands north were the launching points for some of the later empire's most notorious antagonists but also for trade partners, including the Przeworsk and Wielbark Cultures, Quadi, Marcomanni, Dacians, Getae, Bastarnae, Sarmatians, Goths, Huns, and several others. This oft-neglected region, covering modern Poland, Ukraine, Moldova,

Romania, Bulgaria, Serbia, Hungary, Slovakia, and the Czech Republic, was characterized by constant movement and change, a dynamism with which the Roman empire continuously had to contend. Developments in the north affected the empire and vice - versa. The impact of the Roman presence on the barbarian tribes is not easy to discern, nor is it always intuitive. These tribes were outside the traditional boundaries of the empire, and there exist few written sources that concern them. Archaeology is the primary tool for understanding the people of this important region and the long-term impact of Roman interaction across, and well beyond, the Danube.

The Cold War greatly diminished chances for Westerners to conduct research in eastern Europe. Since the 1990s, initiatives by American researchers and collaborations between American and European institutions have increased in the areas beyond the Danube. These initiatives have led to a growing corpus of scholarship available to Westerners, but much valuable information remains in local publications with limited circulation. The primary goal of this session is to increase awareness of archaeology in regions outside the boundaries of the Roman empire in eastern and central Europe. The secondary goal of this session is to examine the specific challenges in researching and preserving heritage at these sites in the hopes of fostering further collaboration.

It is especially important to hold this colloquium in Chicago because of the large population of people there of eastern European descent. The presenters in this colloquium also plan to coordinate with the American Research Center in Sofia, Bulgaria, to involve various cultural institutions in the Chicago area, including, but not limited to, the Polish Culture Center in Chicago and the Consulate General of Bulgaria.

The Roman Army in South Moravia During the Marcomannic Wars
Věra Doležálková, Charles University in Prague

The region of South Moravia played a crucial role during the conflict between the Roman empire and the Germanic tribes, known as Marcomannic Wars. The site of Mušov-Burgstall was the main center of these conflicts. The fort is located in the area of the now-flooded village of Mušov, approximately 80 km north of Vienna, Roman Vindobona. It lies on the flat top of a hill at the confluence of the Svratka and Dyje Rivers. The top of the hill provided the Romans with 360° of observation, and it was possible to control a large part of the Dyjsko-Svratecký Valley, which was densely populated by Germanic peoples. The strategic location of the site was enhanced by its position at the crossroads of important trade routes in Roman times, combining both military and civilian elements.

Archaeological excavation has revealed a fortified Roman military station built by *legio X Gemina Pia Fidelis*, which had its base in Vindobona. Several brick buildings were discovered, among the largest and most important being the so-called Commander House and bath building, complete with hypocaust. The Mušov-Burgstall peak was surrounded by a system of fortification, which consisted of one to three V-shaped ditches (*fossa fastigata*), a massive vallum, gates, and watch towers.

Around the Burgstall, there was found a large number of objects, which illustrate the site's importance and military character. More than 90 bricks with stamps of *legio X Gemina Pia Fidelis* have been discovered, along with numerous small objects, such as fragments of bronze scale armor, mail armor, laminar armor, parts of bronze and iron helmets, iron spears and arrows, swords, horse harnesses, many iron hobnails, and terra sigillata. Findings of fibulae, pottery, and coins date to 172/3.

In addition to the installation at Mušov-Burgstall, there are also more traces of the Roman military presence in the region of South Moravia. A number of short-term camps around Mušov-Burgstall testify to the importance of this area in the period of the Marcomannic Wars. Army troops were set out in neighboring short-term camps, especially in the localities of Mušov-Na Pískách, Iváň, Přibice, Charvátská Nová Ves, and others, and they created a protective network with its nucleus at Mušov-Burgstall.

Roman Period Archaeology in Slovakia: An Overview of Research and Discoveries
Eric M. Vrba, Education Development Center

The territory of modern-day Slovakia sits at the crossroads between western and eastern Europe as well as southern and northern Europe. The ancient Amber Route had many paths through the country, while the Danube River at the country's southern border has always been an important highway for trade and contact. During the Roman period, 10–375 C.E., Slovakia was home primarily to three archaeologically identified cultures: German, Púchov, and Zemplín, all of which had contacts farther afield into the provinces of the Roman empire and other cultures east and north, such as the Sarmatians, Dacians, and Przeworsk. The Romans themselves conducted extensive military campaigns in Slovakia, while also having strong trade relations with the peoples there. For a brief period, the Romans even considered annexing portions of the country into the empire as part of new provinces. This paper provides an overview of the archaeological research that has been done in the country, covering the Roman period; it describes the three cultures, and highlights important discoveries, their meaning in the greater context of the period, and how these remains help us understand better the workings of the Roman empire's frontiers.

Germans in Northern Dacia: Social Relations from Marcus Aurelius to the Post-Roman Period
Rob Wanner, Elizabeth Anderson Comer Archaeology

Less than a century after the acquisition of Dacia, the Marcomannic Wars brought about sweeping changes in military and administrative organization for the newly acquired province. Along with these came important changes in social dynamics between the Romans and the existing Dacian and German communities in the outer reaches of the province, which endured after the departure of the Roman armies under Aurelian. To explore these changes, I draw broadly from evidence from recent excavations in Northern Dacia (modern Cluj and Salaj

Counties in Romania) that dates to the third century C.E. and beyond, with a special focus on architectural arrangements and personal ornamentation, both forms of personal and communal expression. Excavations and archaeological finds from infrastructural improvements and commercial development in villages and in the suburbs of cities have created a plethora of information that is not always circulated outside of regional academic circles in Romania. The story that emerges from this evidence has important consequences for our understanding of both the Roman frontier economy and society in the post-Roman world.

Blood, Fire, and Death: Goths on the Black Sea in the Third to Fourth Centuries C.E.
Artur Błażejewski, University of Wrocław

The Goths, a Germanic tribe of Scandinavian origins, are mostly associated with late antiquity and the fall of Roman empire after the invasion of the Huns in the late fourth century. Gothic contact with the Roman world, however, began much earlier. In this paper, I present just one aspect of those difficult relations: the activity of Goths on the Black Sea in the third to fourth centuries.

In the territory of the Ukraine, beginning in the middle of the second century, archaeologists and historians have observed the inflow of new cultural elements identified with Goths connected to the Wielbark culture from the southern coast of the Baltic Sea. For almost a century, the newcomers, consisting of a population of an immigrated Wielbark culture with participation of indigenous tribes of different ethnicity, such as Sarmatians, Dacians, and probably Slavs, created a new social, political, and economic organism, which is detectable in the archaeological finds, namely in the Cherniakov culture.

According to written sources, the Goths came to the northern coast of the Black Sea in the middle of the 3rd century. They captured the old Greek and strongly Romanized cities - namely, Olbia, ca. 248 and Tyras in 257/8. The Bosporan kingdom on the Crimea, the island of Mediterranean civilization in the north, became dependent on the barbarians. It is interesting to note that the city of Histros on the lower Danube was conquered in 238, 10 years earlier than the northern colonies.

Around the same time, the barbarian fleet, organized by Goths and other Germanic tribes of Scandinavian origin (Heruls and Gepids) along with Sarmatians-Borans, penetrated the Black Sea coast from Crimea to Colchis and the Bosporus, and even Ephesus, in 262. In the archaeological stratigraphy and features of numerous Roman towns, there are clear traces of their piracy. They captured not only objects of luxury, coins, provisions, and military equipment but slaves as well.

The archaeological evidence indicates that the military activity of barbarians on the Black Sea preceded the age of prosperity of the Cherniakov culture in the late third to early fourth centuries, when exchange and commerce with the Roman empire was managed during intermittent periods of peace until the Hunnic invasions in 375.

A Passage to Thrace: An Archaeological Assessment of Goths in Roman Moesia and Thrace in the Late Fourth and Early Fifth Centuries

Eric C. De Sena, American Research Center in Sofia, Bulgaria

Ammianus Marcellius reports that when the Huns arrived in Eastern Europe in 375-376 C.E., a countless number of Goths crossed the Danube ("the most dangerous river in the world"), seeking the protection of the Romans. The author recounts that the Romans in Moesia and Thrace accepted these refugees into the Empire, but does not provide detail as to where the crossing points were and where, specifically, the thousands of Goths were placed. Just two years later, the emperor Valens was killed at Hadrianopolis during a violent uprising of the Goths following a food shortage. The rebellious Goths were ultimately contained; however, the damage was done.

Life in the Roman Balkans continued, and the refugees were absorbed into Roman society. Many Gothic men enlisted in the Roman army and were transferred to various parts of the empire; many other Goths must have remained in the region. In the 390s and 400s, a Visigoth led his compatriots and other "barbarians" in an auxiliary unit of the Roman army. Alaric and his troops, for example, fought bravely for Theodosius against Eugenius in 393-394. Ultimately, Alaric would turn on Rome, first ravaging the Balkans and Greece and then storming into Italy and the city of Rome in 410 C.E.

This paper presents archaeological and historical evidence of a generation of Goths in Roman Moesia and Thrace in the late fourth and early fifth centuries. Archaeological evidence, such as items of adornment, settlement patterns, and destruction events from sites along the Danube, (e.g. Oescus, Novae, and Durostorum), as well as inland sites such as Nicopolis ad Istrum, will be demonstrated both to indicate the presence of Goths in the region and to suggest the vicissitudes of their existence within the empire. Questions addressed in this paper include, Can we indicate the points of arrival of the Goths in 375-76 C.E. and the manner in which they were treated by the Romans? What archaeological evidence is there for the revolts and battles of 376 - 78 C.E.? How may the Goths have been settled and/or integrated into Roman cities and/or the countryside in Moesia and Thrace in the later fourth and early fifth centuries?

SESSION 3G: Workshop
Interdisciplinary Studies: Archaeology and Conservation

Sponsored by the AIA Conservation and Site Preservation Committee and the Getty Conservation Institute

MODERATORS: *Alice Boccia Paterakis*, Japanese Institute of Anatolian Archaeology, Turkey, *Claudia G. Chemello*, Terra Mare Conservation, LLC, *Thomas Roby*, Getty Conservation Institute, and *Stephen Koob*, Corning Museum of Glass

Workshop Overview Statement

In January 2013, an AIA workshop titled "Integrating Conservation and Archaeology: Exploration of Best Practices" demonstrated the advances made in archaeological research by the increasing collaboration with conservation professionals in recent decades. This workshop resulted in a very successful dialogue between participants and audience that led to the proposal for a workshop session at the 2014 annual meeting to promote this trend by examining archaeology and conservation curricula. The AIA Conservation and Site Preservation Committee is sponsoring the workshop in 2014.

The goals of the workshop are to foster the growing awareness of the benefits of interdisciplinary studies in archaeology and conservation university programs and to promote the development and implementation of such courses into the curricula of these departments. There are approximately eight graduate programs in North America that offer a degree in the conservation of art, architecture, or archaeological materials. Most universities offering degrees in archaeology are not privileged with a conservation department on campus and many fall short of including conservation in their archaeology curriculum. Conservation programs in North America can likewise benefit from a review of course requirements in their archaeological conservation curricula and the incorporation of fundamental education in archaeology. The need for improved interdisciplinary education in these fields is reinforced by the results of S. Davis and C. Chemello's survey "So Far Away from Me? Conservation and Archaeology", (*AIC News* 38). One of the goals of this workshop is to lay the groundwork for the advancement of education for future archaeologists and conservators.

Invited participants present the current state of training in these fields in their academic institutions. Each participant makes a 7- to 10-minute presentation in which he/she addresses (1) the current state of interdisciplinary studies between archaeology and conservation in his/her institution, (2) his/her recommendations for increasing conservation education for the archaeology student and archaeology education for the conservation student, and (3) his/her suggestions highlighting areas of conservation knowledge most needed by archaeologists and those areas of archaeology knowledge most needed by conservators for the drafting of future curricula.

Following the presentations, discussions will lead to (1) the drafting of a list of fundamental interdisciplinary requirements for archaeology and conservation education and (2) the formation of a working group for the drafting of educational guidelines for universities after the workshop. By soliciting presentations from both archaeologists and archaeological conservators, a holistic view of the

situation today in academia is provided. This collaboration encourages and promotes the careful consideration of the needs and requirements of both fields by both professions.

PANELISTS: *C. Brian Rose,* University Museum of Archaeology and Anthropology, University of Pennsylvania, *Frank Matero,* University of Pennsylvania, *John Papadopoulos*, Cotsen Institute of Archaeology, University of California, Los Angeles, *Ioanna Kakoulli,* Cotsen Institute of Archaeology, University of California, Los Angeles, *Kent Severson*, Shangri La Center for Islamic Arts and Cultures, *Christopher Ratté*, University of Michigan, *John Merkel,* University College London and *Elizabeth Pye,* University College London

SESSION 3H: Colloquium
Putting It Back Together: The Reconstruction and Interpretation of Ancient Surface Decoration
Sponsored by the AIA Ancient Painting Studies Interest Group

ORGANIZERS: *Sarah Lepinski*, Purchase College, SUNY, and *Susanna McFadden*, Fordham University

Colloquium Overview Statement

This session brings together presentations that address issues of physical, virtual, and interpretive reconstruction and consolidation of ancient paintings and stuccowork. Collectively, the papers present various approaches to the study and presentation of visual schemes in ancient paintings and stuccowork that range in date from the Bronze Age through later antiquity from the eastern Mediterranean and Europe. The presentations offer methodological and theoretical frameworks as well as myriad tools applied in the study, publication, and reconstruction of decorative schemes.

As a group, the session includes work on paintings and stucco from sites in the Bay of Naples now in museum collections and those recovered in excavations at Knossos on Crete, Tel Anafa in Israel, Corinth in Greece, Oplontis (Torre Annunziata) in Italy, and Tongeren in Belgium. The papers integrate discussion of historiography, provenance, and questions of display in the study of visual and material characteristics; they also present research programs that involve advanced technologies for the purpose of art and materials reconstruction both virtually and physically. Significant among this collection of papers is the role of reconstruction (and the process of creating reconstructions) in understanding larger historical and cultural questions regarding decorative ensembles, iconographies, artistic practices, and the economic and social circumstances surrounding production and reception.

This session follows two successful workshops organized by the Ancient Painting Studies Interest Group that were held at the AIA/APA annual meetings in 2012 and 2013. It aims to continue the cross-disciplinary discussions fostered in these earlier sessions and therefore incorporates papers that approach ancient

surface decoration from diverse perspectives and methodologies in the fields of archaeology, art history, anthropology, computer science, conservation, and material science.

DISCUSSANT: *Lea Cline*, Illinois State University

Selected To Taste: The Case for Sill Life in Roman Wall Painting
Shana O'Connell, Johns Hopkins University

Although most Roman wall paintings survive in fragmentary condition, limited or reframed by the effects of time and the efforts of restorers, the frames imposed by modern tastes and concepts of genre are especially evident in the physical and virtual cropping of still life from these frescos. When the cities destroyed by Vesuvius in 79 C.E. were first rediscovered and mined for their treasures in the 18th century, still lifes were among the sections of wall paintings that were removed. Later published in *Le antichità di Ercolano esposte*, these paintings of myriad objects, animals, and comestibles were inserted into modern categories of genre, given their own chapter, or depicted in the ornate frames of figural compositions. Though this practice of removal fell out of favor in the 19th century, the excision of still lifes as reproductions in textbooks, articles, websites, and tourist-shop ephemera continues to crop the images, sometimes following a pictorial frame defined by the ancient painter, other times imposing one by virtue of modern technology. This reduction of the still lifes obscures their compositional significance on Roman walls and elides their uniquely ancient context in houses and public spaces. It defines what still life is for these frescoes, ignoring the plethora of objects that populate these compositions by focusing on compositions that fit a modern concept of still life. Finally, although productive connections exist, this reduction creates an artificial resemblance to the still life paintings of much later traditions of the 17th through 19th centuries.

In my paper, I consider the impact of physical and photographic excision on paintings of objects that were originally framed compositions and, more crucially, those objects that have been removed from pictorial scenes. I suggest a more nuanced approach to these images as selections determined by scholarship, in photographs that compare and contrast iconographic motifs or stylistic tendency, or determined by previous periods of history, in the process of removal and display in collections. These still life paintings present a wealth of information regarding ancient debates about food, agricultural production, and luxury as well as habits of viewing and aesthetic tastes. To access this information we must first be able to look back through the frames of taste that have affected their physical properties and our current state of discourse on their significance.

Disembodied Designs: The Challenge of Provenance in the Study of Interior Design Media
Morgan Lemmer-Webber, University of Wisconsin

While the lack of provenance is detrimental to the understanding of any ancient artifact, specific complications arise in regard to interior design media such as frescoes and stucco reliefs because they were intended to be permanent fixtures within a specific design scheme. Despite these concerns, frescoes and stucco reliefs are discussed less frequently in the scholarly research regarding provenance in museum acquisitions than portable objects such as sculpture and ceramics. Focusing on Roman imperial fragments, this study explores the nature of frescoes and stucco reliefs in relation to amateur excavation techniques, the issue of provenance, and finally the implications and benefits of displaying these disembodied fragments in a museum setting.

The nature of stucco reliefs and frescoes is both literally and figuratively grounded in its context. Unlike many modern design and decoration trends, which are intended to be easily rearranged and reinvented on the whim of the resident or designer, Roman frescoes and plasterwork were never intended to be seen independently outside of the original groupings in the room in which they were created. Therefore, the loss of provenance and context in design media is disruptive in several ways. From an iconographic standpoint, the removal of an image from its intended context often renders it illegible by removing the other iconographic clues within the room. Knowledge of this context can indicate the theme and intended audience and whether the image was public or private, decorative or functional, secular or religious. From a conservation standpoint, the removal of frescoes and stucco reliefs from their initial locations is a destructive, even violent, process.

Many of these fragments of dubious provenance were donated from private antiquities collections to major museums worldwide. While portable objects call into question the typical issues of authenticity and cultural heritage that are ever present in the dialogue of provenance in museum collections, it is possible for them to be found severed from their context by chance; but an architectonic element that is a part of the wall cannot be considered to have been moved by chance. The excision of such objects requires the deliberate destruction of an archaeological site. However, despite this loss of context, these objects are not entirely without scholarly or educational value. As long as we are willing to open a dialogue about these concerns, there is still a function for these fragments in the museum.

Methodologies and Materiality: Approaches to Excavating and Analyzing Fragmentary Mural Paintings. A Case from Ancient Corinth, Greece
Sarah Lepinski, Purchase College, SUNY

This paper presents, as a case study, a methodology for the study of paintings from archaeological contexts, which was developed throughout the excavation and study of the paintings from Panayia Field in ancient Corinth, Greece. This methodology underscores the significance of field practices and material analyses

in studies of mural paintings from archaeological contexts. Drawing from paradigms established within excavations and from conservation-program strategies at sites in Roman Britain, Gaul, and Italy, my approach includes paintings from all excavated deposits, stressing the necessity for contextual analysis on multiple levels: archaeological, architectural, and cultural.

The approach has made it possible to assess the general extent of painting from the excavations, to associate paintings with specific architectural phases, to consolidate fragmentary schemes, and to assign a large number of paintings to the rooms they once adorned. In turn, comprehension of the paintings' archaeological contexts provides a chronological framework with which to study technical, material, and aesthetic characteristics both diachronically and synchronically. A diachronic study reveals distinct trends in Corinth's artistic production in the first three centuries C.E. that relate to those found in other groups of material culture in Corinth, in particular in ceramic assemblages and mosaic ensembles. A synchronic perspective facilitates comparative study with contemporary paintings at Corinth and other sites throughout the Mediterranean; it demonstrates that Corinth maintained and also sustained aesthetic preferences for Early Roman forms and sustained well-trained and adept painters into the third century C.E. Together, both perspectives help situate the painted representations, the technical facets, and the material characteristics within their social and economic contexts in ancient Corinth, thereby also allowing paintings (their techniques, materials, and representations) to contribute to larger historical and cultural narratives.

Masonry Style in Phoenicia: Reconstructing Sumptuous Mural Decoration from the Late Hellenistic Stuccoed Building at Tel Anafa

Benton Kidd, University of Missouri

The site of Tel Anafa in the Upper Galilee region of Israel is hardly known today among those outside the realm of Palestinian archaeology. Moreover, Tel Anafa was never famous in antiquity. But joint excavations by the Universities of Missouri and Michigan unearthed an exceptionally decorated villa, which is just now beginning to be recognized for its outstanding Masonry Style walls, soon to be published in the final volume of the excavation series. This paper examines the new reconstruction of the most elaborate mural scheme of the house and addresses some of the more remarkable aspects of the decoration, such as the pigment/gilding analyses and the unique Graeco-oriental decorative motifs.

The building known as the LHSB (Late Hellenistic Stuccoed Building), which dates to ca. 125–90 B.C.E., was a wealthy Phoenician merchant villa located on a tell just a few miles inland from the Phoenician coast and about 30 km from Damascus. Over the course of its operative years, the LHSB grew rapidly and somewhat eccentrically, with rooms arranged loosely around a court, some wings apparently two stories in height. A three-roomed bathhouse occupied the east wing, which was no doubt elaborately plastered as a small amount of stucco in situ suggested. An upper-floor room on the south wing seems to have received the grandest of the schemes, however, and it is this design that has been reconstructed.

In a region that preserves a paucity of Hellenistic architecture, the LHSB provides us evidence for the decoration of upscale Levantine villas in general, in addition to suggesting what may have adorned civic buildings and temples. Furthermore, this extraordinary stucco reveals a unique fusion of eastern and western decorative motifs that exemplify the cosmopolitan spirit of the Hellenistic age.

Picking up the Pieces—Virtually: Minoan Frescoes from the South House, Knossos (Crete)

Anne Chapin, Brevard College, and *Maria Shaw*, University of Toronto

This paper focuses on continuing efforts to publish fragments of a floral landscape painting excavated in 1923 from the Minoan mansion known as the South House, adjacent to the palace at Knossos, Crete. The fresco, which dates to the floruit of Minoan fresco painting in early Late Minoan (LM) IA, was found in a lustral basin and features large lily-like flowers and reeds in a landscape characterized by Minoan-style wavy bands and colorful rockwork. Despite the fresco's fine quality and stratified archaeological context, only line drawings of three fragments have ever been published. The first section of the paper reflects on the history of incomplete publication and how decisions made decades ago by earlier generations of scholars continue to impact the study of the material today. The second section offers an overview of how digital and virtual technologies are now being brought to the surviving evidence, in order to offer publication of all extant pieces. A digital restoration of the fresco is presented, as is an overview of how three-dimensional software is being used to place the composition within its broader architectural setting.

Digital Reconstruction of Four Second- Style Rooms at Villa A ("Villa of Poppaea") at Oplontis (Torre Annunziata, Italy)

John R. Clarke, The University of Texas at Austin

A new photographic archive, together with a group of large fragments of frescoes ignored for more than 40 years, allow us to reconstruct accurately four Second- Style decorative schemes in Villa A at Oplontis. In 2008, photographs recording the state of the frescoes at the time of their discovery (1966–1967) came to light, before massive losses that included the decoration of the tympanum of Cubiculum 11, the capital and frieze in Triclinium 14, and the vault of the Oecus 23. Furthermore, it was only after architects reconstructed the atrium that many fragments belonging to the upper zone emerged from the excavations. Using digital tools, the Oplontis Project has been able to reconstruct the original decorative schemes of these Second- Style rooms, integrating the evidence from the archival photographs and the surviving fragments.

Reassembling Roman Plaster Fragments from Flanders Using Three-Dimensional Scanning and Automatic Matching

Lara Laken, Flanders Heritage, *Benedict J. Brown*, University of Pennsylvania, *Marc Proesmans*, University of Leuven, *Alain Vanderhoeven*, Flanders Heritage, *Marc De Bie*, Flanders Heritage, *Luc Van Gool*, University of Leuven, and *Tim Weyrich*, University College London

Roman wall paintings provide unique clues about provincial Roman lifestyles and urban communities. They also help us reconstruct buildings of which little or nothing remains, which is often the case in the northwestern provinces. However, studying wall paintings is labor-intensive and expensive, in particular when they must be reassembled from solid-color fragments.

Recent research carried out by a collaboration of computer scientists at the University of Leuven, Princeton University, and University College London, together with archaeologists in Belgium, the Netherlands, and Greece (Thera), have shown how three-dimensional scanning systems and computer-based matching algorithms accelerate the reassembly process and make it financially feasible. Furthermore, the computer-based systems require much less handling of individual fragments; thus, they do less damage than traditional methods. In fact, even those with minimal computer or archaeological training can safely and efficiently process the fragments.

Current systems require active support from computer scientists and cannot handle the thousands of fragments produced in archaeological excavations. We have therefore launched a multiyear project funded by the Research Foundation Flanders (FWO) to develop an innovative new scanning system and extend our existing software tools to cope with large collections of fragments. The system should prove reliable, effective, and easy to use. In addition to technical advancements in three-dimensional scanning, our system will have a major impact on the way that we analyze ancient wall paintings; it will speed up the reconstruction process, support virtual reconstruction, and enable detailed study with limited handling of the physical fragments.

We are developing this system in conjunction with a study of significant wall paintings from Tongeren, the only Roman city in Belgium, paintings that no one has previously examined because of prohibitive costs. This paper gives an update on our scanner design, automatic data-processing algorithms, and data management, as well as a summary of our archaeological results.

SESSION 3I: Colloquium
Current Trends in Maritime Archaeology
Sponsored by the AIA Underwater Archaeology Interest Group

ORGANIZERS: *Jeffrey G. Royal*, RPM Nautical Foundation, and *Dan Davis*, Luther College

Colloquium Overview Statement

A half-century after inception, maritime archaeology continues to provide unique and critical evidence to research of the ancient Mediterranean world. This

is largely due to important discoveries and excavations over the past four decades that have added volumes of information about overseas trade and transport, as well as the quantitative and qualitative data required to make meaningful analyses of the growth and decline of ancient economies. It is only through an understanding of overseas trade and the technology required to conduct it that intra- and interregional distribution, long-distance exchange, and resource allocation can be fully comprehended. Along with a growing base of evidence for ancient ship construction and cargo distributions, new analytical methods are modifying our conceptions of the types of goods shipped, the chronological and geographical parameters for these commodities' distribution, and the ways technology developed over time to package, transport, and allocate cargoes. In the realm of naval warfare, the finds of warship rams discovered off the Egadi Islands provide a significant increase in direct evidence for ancient warships whose details have been largely trapped in the pages of history or in nebulous representations in art. Sea-level rise has submerged a large number of habitation sites and port facilities that are now garnering increased attention in maritime archaeology.

This session includes five papers that illustrate the current state of research approaches in maritime archaeology. As discussed in "The Seventh-Century B.C.E Shipwreck at Bajo de la Campana: Colonial Connectivity in Phoenician Spain," the Bajo de la Campana shipwreck, with its cargo of raw materials and orientalizing luxuries, is the only one of its kind excavated to date and is elucidating Phoenician colonial commercial networks. "The Mazotos Shipwreck Project" centers on a modest Classical-period merchantman that negotiated trade in the eastern Mediterranean at a time of transition and expansion and a rare point of comparison with the nearly contemporary Kyrenia shipwreck. "The Athenian Naval Bases in the Piraeus" reports on how shipshed architecture has the potential to elucidate the size and dimensions of ancient warships, particularly those larger units adopted into Hellenic fleets in the Hellenistic era. The final two papers showcase new approaches in survey methodology. "Maritime Archaeology in the Southwest Aegean: Antikythera and Crete" reports on a reexcavation of the famous Antikythera shipwreck salvaged in 1900–1901 and a coastal survey in Crete. Finally, "Maritime Archaeology off the Illyrian Coast" reports on significant discoveries of more than 20 shipwrecks spanning 11 centuries in one of the least known areas of maritime archaeology in the Mediterranean.

The Seventh-Century B.C.E. Shipwreck at Bajo de la Campana: Colonial Connectivity in Phoenician Spain

Mark Polzer, University of Western Australia

From 2007 to 2011, the Institute of Nautical Archaeology (INA) excavated the remains of an Iron Age shipwreck off the southeastern coast of Spain at Bajo de la Campana (San Javier). The site dates to the very end of the seventh century B.C.E. and represents the only Phoenician seagoing vessel ever excavated from this period. Virtually nothing of the ship itself remains, and most of the finds are ascribed to the ship's cargo. These comprise consignments of raw materials—ore, metals, amber, and elephant ivory—and finished goods. The latter include an assortment of predominantly western Phoenician pottery, as well as more exotic items, such

as bronze furniture elements, carved ivory pieces, alabaster vessels, and ostrich eggshells. Despite extensive damage to the material, virtually the entire repertoire of orientalizing luxuries and prestige objects found in the western Mediterranean is represented in these assemblages. This paper summarizes the finds from the site, the results of archaeological and scientific analysis of the pieces, and what this information reveals about commercial networks and colonial connectivity in the Iberian Peninsula at the height of Phoenician colonial activity in the region.

Maritime Archaeology in the Southwest Aegean: Antikythera and Crete
Brendan Foley, Woods Hole Oceanographic Institution, and *Theotokis Theodoulou*, Hellenic Ephorate of Underwater Antiquities

In 2013, Woods Hole Oceanographic and the Hellenic Ephorate of Underwater Antiquities performed cooperative maritime archaeology surveys in the southwestern Aegean Sea, along 40 nautical miles of the coast in western Crete. In the Late Bronze Age, the political balance shifted from Knossos in central Crete to Chania in western Crete. As a result, protohistorical maritime activity may have increased in the region, perhaps leaving traces on the seafloor. Moreover, this section of coast lies adjacent to an intensively trafficked maritime route, the gateway choke point between the greater Mediterranean and the Aegean and Pontic regions beyond, yet maritime evidence from this important littoral region remains largely unknown to archaeologists. The survey project presented here is the first to document systematically the nearshore coast of west Crete; the latest field season encompassed the area of the peninsulas bracketing Kolpos Kissamou near Chania and the entire westernmost coast of Crete. As part of an ongoing multiyear program to completely record all cultural remains from prehistory to the modern era in the littoral waters of this area, the team's archaeologists used technical diving methods that included closed-circuit rebreathers and diver propulsion vehicles.

In addition to the survey, the team continued its investigations of the well-known Antikythera shipwreck. In 2012, the team recovered artifacts including a lead anchor stock and collar and an intact amphora from a site 300 m south of the Antikythera wreck's main cargo assemblage. These artifacts and others discovered in situ indicated the possibility of a separate shipwreck contemporary with the Antikythera wreck, or possibly material deposited during the wrecking event of a single ship. To address these possibilities, precise bathymetric mapping of the wreck and surrounding seafloor performed in 2013 allowed new interpretations of both the Antikythera wreck and the artifact scatter. These new data also provide new information for site-formation hypotheses and a better formulation of future excavation plans.

The Athenian Naval Bases in the Piraeus: The Wide Unroofed Slipways at Zea Harbor
Bjørn Lovén, Zea Harbour Project

Until recently, the archaeological evidence of Athenian shipsheds in the Piraeus indicated a fairly uniform width corresponding to the maximum width of a

trireme. However, two naval inventories, *IG* 2² 1627, line 22 (330/29 B.C.E.) and *IG* 2² 1629, line 808 (325/4 B.C.E.), reveal that larger warships types were introduced into the Athenian navy in the Early Hellenistic period: the first inventory lists 18 *tetreis* ("fours"), the second lists 43 *tetreis* and seven *pentereis* ("fives"). But until now we have never seen how these larger warships were accommodated within the Piraean naval harbors. Between 2010 and 2012, the Zea Harbour Project documented seven areas of worked, flat-faced bedrock separated by six raised, parallel, rock-cut platforms in the southeast area of Zea Harbor. Roughly 8 m in width, these structures conform to a consistent matrix and incline downward to the sea. The evidence strongly suggests that these structures were unroofed slipways built to accommodate warships larger than the trireme.

The Mazotos Shipwreck Project, Cyprus: Five Years of Research
Stella Demesticha, University of Cyprus

In 2006, amateur divers discovered an ancient shipwreck some 1.5 miles off the coast near the village of Mazotos, Cyprus. Since 2007, fieldwork by a team from the University of Cyprus has shown that this ship was a merchantman that departed the Aegean full of Chian wine amphoras and sank off the south coast of Cyprus during the second half of the fourth century B.C.E. Full excavation at the site began in 2010 and has revealed one of the most coherent shipwreck sites of the classical period known to date.

The ship apparently landed on the flat seabed where the favorable environmental conditions made for limited disturbance of the spatial arrangement of the ship's material after the wrecking event. This is particularly obvious at the center of the assemblage, where at least three layers of cargo amphoras remain stacked, most in an upright position. During excavation of the bow and stern areas, however, specific types of disturbance were documented that gave evidence of different spatial arrangements onboard. At the bow only two layers of amphoras were found broken in situ, possibly under a foredeck, and at the stern a secondary cargo of jugs was situated among the amphoras yet was most probably stowed on top of them.

The main cargo was a homogeneous shipment carried in Chian amphoras, of three different sizes, all of which were pitched on the inside. Wine is hypothesized as the main content, yet olive pits were also found in several of them. Apart from the Chian amphoras, four additional amphora types were found in the hold, all Aegean types. These latter types have not been readily identified as of yet, such that their study is expected to shed new light on amphora typologies and chronologies of the Late Classical period.

The ship's wooden hull above the lower layer of the amphoras was not preserved. Parts of the keel and the starboard planking, however, were found under the amphoras at the bow and the stern areas, which suggests that the section of hull in between remains under the unexcavated cargo assemblage. Few good examples exist for hull construction in the fourth century B.C.E.; thus, this wreck site near Mazotos may well serve to inform us of this critical period.

Maritime Archaeology off the Illyrian Coast: A Report from the Illyrian Coastal Exploration Program (ICEP)
Jeffrey G. Royal, RPM Nautical Foundation

Long closed to maritime archaeology, much of the ancient Illyrian coast has remained a mystery. The Illyrian Coastal Exploration Program (ICEP) has conducted a systematic archaeological survey since 2007 along the coastlines of Albania, Montenegro, and Croatia with a goal of documenting this previously unknown submerged cultural material. Through 2012, ICEP has documented 20 new wreck sites spanning the sixth century B.C.E. through the seventh century C.E. Selected areas of the coast also receive diver survey. The expanding data set indicates significant Corinthian/Corcyran trade activity in the fourth–third centuries B.C.E.; these data support an expanding economy prior to Roman intervention. Subsequent to the first Roman incursions into Illyria, evidence shows heavy wine shipments along the eastern Adriatic route throughout the Late Republican era. Maritime evidence further indicates a shift in overseas trade orientation from the central to the eastern Mediterranean during late antiquity along the southern portion of the Illyrian coast, a shift paralleled in the terrestrial data. Additionally, analyses of fabrics from amphoras recovered from shipwrecks provide critical information for source areas, while mixed cargoes provide new indications for circulation dates in the region.

SESSION 3J: Colloquium
Reciprocity in Aegean Palatial Societies: Gifts, Debt, and the Foundations of Economic Exchange

ORGANIZERS: *Dimitri Nakassis*, University of Toronto, *William A. Parkinson*, Field Museum of Natural History, and *Michael L. Galaty*, Mississippi State University

Colloquium Overview Statement
This colloquium is the third and final installment of a series meant to update archaeological study of Aegean palatial economies based on current research in economic anthropology and new archaeological and Linear B data from Minoan and Mycenaean states. The first colloquium, titled "Redistribution in Aegean Palatial Societies," was held in 2009 at the 110th Annual Meeting of the AIA in Philadelphia and was published in the *American Journal of Archaeology* (*AJA*) in 2011 in a special Forum section (vol. 115). The second colloquium, titled "Crafts, Specialists, and Markets in Mycenaean Greece," was held in 2012 at the 113th Annual Meeting of the AIA, also in Philadelphia, and has also been published in the *AJA* (vol. 117). These first two colloquia, on redistribution and market exchange, prompted much debate on the nature and function of Aegean economies, and we hope the third, on reciprocity, will do likewise.

It has been almost 90 years since the French sociologist Mauss published his classic *Essai sur le don* (Paris 1925), in which he emphasized both the economic and social importance of reciprocity. In recent decades, economic anthropologists and archaeologists have expanded on his seminal work, noting the key roles played by

reciprocity in all aspects of human interaction and describing the various, complex ways in which reciprocal exchanges, whether generalized, balanced, or negative, lay the groundwork for systems of debt and therefore for regional economies and social organization. Yet this new body of theory has been scarcely tapped by archaeologists working in the Bronze Age Aegean. This colloquium reviews recent advances in reciprocity and exchange theory and applies them to archaeological data sets from the Aegean.

The colloquium begins with an introductory paper written and delivered by the co-organizers. The introduction reviews the history of "reciprocity" generally and in the Aegean specifically, and it presents new theoretical approaches. Next, five specialists apply these ideas to different Aegean contexts. The first assesses the origins of reciprocal exchange systems in Greece in the Middle Bronze Age and Early Mycenaean period, including gift exchange, feasting, "potlatching," and systems of debt. The second analyzes the evolution of and subsequent roles played by these systems in the Aegean palace economies. The third discusses reciprocity as a basis for international interaction and trade in the Bronze Age Mediterranean. The fourth critiques models of Aegean reciprocity drawn from the Homeric texts, and the fifth describes the fate of these systems in the Iron Age, in the aftermath of the collapse of the palaces. Finally, two archaeologists, one of whom works in Greece and the other in Africa, discuss the colloquium's proceedings.

DISCUSSANTS: *Sarah Morris*, University of California, Los Angeles, and *Chapurukha Kusimba*, American University

From Reciprocity to Centricity: The Middle Bronze Age in the Greek Mainland
Sofia Voutsaki, University of Groningen

In this paper, I discuss the role of reciprocal relations in processes of social change. More precisely, I discuss the transformation of social relations, modes of interaction, and sumptuary behavior across a long and turbulent period from the collapse of the Early Bronze Age protourban societies, through the slow recovery during the early phases of the Middle Bronze Age, to the intensification of social change during the transition to the Mycenaean period.

A deep crisis swept across the southern Aegean during the transition to the Middle Helladic period (ca. 2200–2100 B.C.E.), bringing an end to the protourban, prosperous, and receptive Early Helladic societies. While the causes of this crisis have been hotly debated, its consequences for the social fabric of the mainland communities have not been addressed systematically. It is suggested that depopulation, social regression, and the ensuing fragmentation of the social body during the early phases of the Middle Bronze Age were countered by two sets of practices: on the one hand, by the establishment of reciprocal and segmentary networks of exchange that held together kin groups, communities, and entire regions, and on the other, by an emphasis on the continuity of the kin group that ensured their survival in this unstable period.

The incorporation of the mainland into wider networks of interaction during the transition to the Early Mycenaean period (ca. 1700–1600 B.C.E.) brought about

the transformation of the kin-based, introverted, and materially austere Middle Helladic societies to the differentiated, competitive, and expansionist Mycenaean polities. It is argued that this transformation that I have described elsewhere as the centralization of reciprocities relied not only on the manipulation of gift exchange and conspicuous consumption but also on the subtle redefinition of modes of co-operation between households and kin groups.

There's No Such Thing as a Free Lunch: Reciprocity in Mycenaean Political Economies
Daniel J. Pullen, Florida State University

Reciprocity has seen much less attention by Aegean archaeologists than have other economic concepts, such as redistribution, largely because of an assumption that reciprocity is characteristic of "egalitarian" or less developed societies and because of a related interest in political economies of more complex (palatial) societies assumed to be characterized by redistribution. In Aegean archaeology, consideration of reciprocity is usually limited to gift exchange, either royal, in the context of Late Bronze Age interactions with other societies in the eastern Mediterranean, or among elites in a Homeric model. Yet reciprocity has great potential for our understanding of political economies and social organization of the Late Bronze Age Aegean. Reciprocity encompasses the social dynamics of any exchange between individuals and how these social relationships form the structure of social organization. Of particular interest here is how the standard categories of reciprocity—that is, generalized (gift-exchange), balanced (trade or immediate discharge of debt), and negative (one-sided benefit)—are manipulated through strategies such as competitive generosity and asymmetrical exchanges, leading to indebtedness of one exchange partner to the other; this can be institutionalized into hierarchical social structures. Feasting is one important category of exchange that can result in asymmetrical relationships and social inequality, and the Mycenaean evidence allows us to examine feasting in detail. Recent work in Linear B texts has suggested that palatial elites manipulated reciprocity through feasting as a strategy for maintaining social and political power. Likewise, elites used gifts of prestige items within their own polities to forge alliances and maintain social power.

Material Symbols and Social Bonds Within and Beyond Mediterranean Kingdoms
Bryan E. Burns, Wellesley College

The royal correspondence of the Amarna Letters demonstrates how the language of reciprocity enabled repeated and expected trade of raw materials, crafted objects, and skilled personnel between rulers of Near Eastern kingdoms. Fictive bonds of kinship sealed an exclusive network through which leaders addressing each other as "brothers," accessed external resources. They further demonstrated their external bonds with the exchange of highly crafted objects featuring a sophisticated mixture of regional styles. The multivalent symbolism of these acquisitions becomes clear, however, when the diplomatic ideology of mutual respect

and equality is set against the same rulers' internal claims of broad dominion over foreign lands and peoples. These multiple lenses through which material transactions can be characterized prove to be useful models for managing and manipulating external sources of power.

While the limited scale and frequency of Aegean interaction with these regions of the eastern Mediterranean prevent us from including Mycenaean kings among the symbolic brotherhood, we can consider how an Aegean system of shared social capital similarly framed international relations. The Mycenaean elite identified their participation in an exclusive network through sharing foreign symbols acquired by long-distance exchange and the control of imported commodities. The recognition of exotica as material symbols of potential opportunities and obligations beyond the local realm enables us to reconsider internal systems often discussed in terms of staple and wealth finance, as well as the significance of differential patterns in the distribution of imported objects and exotic symbols over the course of the Late Bronze Age.

Homeric Reciprocities
Erwin Cook, Trinity University

Reciprocity plays a vital role in the competition for status that structures Homeric society. Homer describes three principal forums of competition: political, intellectual, and athletic, including warfare. Reciprocities employed in elite competition include *xeiniē* (guest-friendship), *gamos* (marriage), *hiketeia* (supplication), *apoina* (ransom), and *poinē* (reparation, revenge). Of these, *xeiniē* and *apoina* manage relations between individuals belonging to different communities; the rest can be used to manage intracommunal as well as external relations. Sacrifice is exploited for social integration and to place the wider community under obligation to the sponsor. Elite heads of household also seek to attract other households into a network of mutual support; those so aligned are called *philoi* (friends) and *hetairoi* (companions). Economic exchanges are acknowledged, but treated with contempt: circulation of goods is managed primarily by reciprocity and occasional necessary exchange. It is important to stress the immaterial aspect of Homeric reciprocity; even material goods attain their value from an economy that is largely symbolic. Another consideration is that Homer's social world is that of archaic Greece with two important qualifications: first, that world is streamlined by the process of pan-Hellenization, and, as important, it does not simply mirror contemporary Greece but is itself actively shaping the world it describes. It is thus a refraction of an abstraction of archaic Greek society.

Xeiniē, gamos, and *hiketeia* are structurally homologous institutions for incorporating someone unrelated by blood into the household in a dependent relationship. *Xeiniē* and *gamos* also create obligations of mutual support between heads of household. In war, the ideal is to kill the enemy without suffering reprisal and thereby to acquire enhanced *timē* (honor). Alternatively, the enemy may be taken captive and exchanged for *apoina*. The exchange is designed to preserve the *timē* acquired by the captor. One may also attempt to exact *poinē* on the victim's killer, in which case life is exchanged for life, and the avenger acquires *timē*. An individual who loses *timē* under any circumstances may seek *poinē* on his own behalf. Such

poinē exchanges serve to restore the status of both to what it was prior to the harm inflicted. Finally, *poinē* and *xeiniē* are analogous in that one person subordinates another by gift giving or inflicting harm, whereupon the recipient seeks redress by completing an equalizing exchange, which in the case of *poinē* also restores *timē*.

Reciprocity in the Greek Iron Age
Carla M. Antonaccio, Duke University

Already in 1954, Moses Finley, extrapolating from epic to Iron Age society, had turned to the model of gift exchange to explicate the reciprocity of *xenia* as seen in Homer. Since then, the concept of gift exchange has been fundamental to analyses of Greek social and economic relationships well beyond the Early Iron Age (defined here as 1100–800 B.C.E.). Gift-exchange theory has been applied to complex and hierarchical societies: Ian Morris suggests that it is politics, rather than kinship, that shaped production and distribution in the Iron Age's early state structure (and continued into the ritualized friendship of Greek aristocratic relations well into the Classical period). The model of gift exchange and an emphasis on exclusive spheres of exchange have been extended to account for votive offerings in early sanctuaries ("gifts for the gods") and for burial customs (where top-ranked items are understood to have been ritually destroyed). The recent dominance of the feasting paradigm can be seen as related, in that feasting also entails gifts—and reciprocity.

Reciprocity has been less well integrated into consideration of gift exchange in the material culture of the Greek Iron Age. Reciprocity may be positive, negative, or balanced, immediate or delayed, proximate or distant, and it is personal. This paper analyzes archaeological contexts in the Greek Iron Age—necropoleis, early sanctuaries, and selected domestic contexts—from this perspective. Negative reciprocity is an important focus, since it may be a force of either social instability or of creative tension in early Greek societies.

SESSION 3K
Minoan Themes

CHAIR: Susan Ferrence, INSTAP

A Fresh Look at the Fine Gray Ware Pyxis
Emily Miller Bonney, California State University, Fullerton

This paper reassesses the significance of the Early Minoan (EM) IIA Fine Gray Ware pyxis and argues the type is an important marker for social change in the EM II period. A chronological benchmark in the Cretan Bronze Age ceramic sequence, the Fine Gray Ware pyxis is a late addition to the repertoire of shapes in Fine Gray Ware. Potters were producing Fine Gray Ware in the Mesara region by EM I, particularly chalices and pedestaled bowls, which are evidenced in particular by the deposits from Knossos. But the pyxis did not appear until EM IIA (apparently early in that phase) and did not continue into EM IIB. Wilson and Day's analysis

of the imported wares at Early Minoan Knossos in "Ceramic Regionalism in Pre-palatial Central Crete: The Mesara Imports at EM I to EM II A Knossos" (*BSA* 89 [1994] 1–87) remains the key study of this important fabric. At the time, the most significant collections of published Fine Gray Ware pyxides were those from Knos-sos, Koumasa, Myrtos, and Gournia. The final publication of the excavations at the tholos cemeteries near Lebena on the south-central coast added significantly to that body of material, particularly because of the large numbers of intact vases, and it permitted a finer-grained analysis of the significance of the ware than previously was possible. Review of the pyxides from Lebena Yerokambos suggests a burst of creativity at a critical time in the tomb's history. Pyxides at Lebena Yerokambos, as at other EM I tombs, constituted a key component of the mortuary ceramics, but pyxides were not deposited in tombs by late EM IIA, so it is noteworthy that the innovation immediately preceded that change in practice, perhaps as a response to changes in social relationships. A second striking development is that the Fine Gray Ware pyxis appeared at Lebena Yerokambos at precisely the time that users began to modify the tomb in ways that reshaped the mortuary ritual and changed the relationships between the living and the dead, further evidence that the pyxis was implicated in a reordering of social bonds. Finally, the prominence of the Fine Gray Ware pyxis at Koumasa and Lebena Yerokambos, both of which are at the eastern end of the Mesara/Asterousia region, contrasts with the relative unimpor-tance of the type at western sites, most notably Moni Odiyitria and Ayia Kyriaki, and adds to a growing body of evidence for regional differences in mortuary and broader social customs.

Minoan Communities and Commemorative Practices: The Case of the Middle Minoan Settlement and Tholos Tomb A at Apesokari/Mesara

Georgia Flouda, Heraklion Archaeological Museum

This presentation examines Tholos Tomb A at Apesokari. This tholos was the diachronic locus of the mortuary practices and of the associated commemorative rituals employed by a part of the community of the neighboring Middle Minoan settlement. Along with the earlier Tholos B, situated 220 m to the northeast, Tholos A functioned as a significant landmark of the rural landscape. New data emerging from the recent restoration and study of the Tholos A burial assemblage suggest that the annex rooms and the paved area with the open-air altar were used simul-taneously with the burial chamber throughout the latter's period of use. Building on the nature of the artifacts found there, I reconstruct the paved area outside Tho-los A as the epicenter of interaction between the living community members and the ancestors. It is significant that this interaction took place not only at the time of funeral episodes relating to the phase of use of the tholos (Middle Minoan [MM] IA–IIA) but also during visits to the burial complex long after the use of the burial chamber had ceased (MM IIB–III). Based on the ongoing study of the architecture and the settlement deposits recovered from the building on Vigla hill, I also offer preliminary conclusions about the nature of occupation at Apesokari. Observa-tions drawn from the MM III pottery sequence are ultimately used to highlight the early Neopalatial history of the site and socioeconomic issues such as contacts of the Apesokari community with other Mesara communities.

From Feasting to Hoarding, from Rebuilding to Discarding: The Significance of Accumulation in Minoan Crete. A Case Study from the Minoan Town of Phaistos (Southern Crete, Greece)
Ilaria Caloi, Université Catholique de Louvain

Recent studies in Aegean prehistory have focused on feasting but also on the accumulation phenomenon as a mnemonic record. Besides foundation deposits, which are attested particularly in the Aegean world, there are also many other kinds of deliberate depositions, which can be variously interpreted.

The Minoan site of Phaistos, southern Crete, in the Middle Bronze Age (21st–17th centuries B.C.E.) and especially in the period of the first palaces (the Proto-palatial period) represents an exceptional case, as it is rich in deliberate dumps of different natures, as well as in structured depositions that mostly consist of filled benches—that is, benches made up or filled in with entire and fragmentary vases. As most of these deliberate depositions were found inside the main building of the first palace, it seems they reflect the need to mark major changes in the palatial building's long life. Indeed, they are usually connected to building renovations or to rebuilding operations, thus marking the beginning of a new cycle in the palace's use.

Along with a case study of Phaistos, this paper presents cases of deliberate de-positions attested elsewhere on Minoan Crete, with the aim of understanding their different meanings on the basis of their location, context, and nature.

Performing Manhood in Minoan Crete: An Analysis of Androcentric Material Culture
Angela Ratigan, Indiana University, Bloomington

This paper examines the development of Minoan conceptions of masculinity as demonstrated through the fashioning of images of the male body in seals, terra-cottas, frescoes, and stone vessels. The variety of activities in which males are pictorially involved, in conjunction with the limited pursuits of Minoan women in art, disturbs certain latent assumptions about the predominance of women in society. Furthermore, as recent scholarship has turned away from Evans' notion of a peaceful society, this analysis also reveals an increase in the frequency and variety of aggressive imagery over time.

Because gender is the result of the constant performance of sedimented social expectations, as argued by Judith Butler, the trends within androcentric imagery (appearance of loomweights, martial themes, maritime themes, and the like) are best charted diachronically. Finally, since the notion of a peaceful Minoan Crete is slowly becoming overturned, the paper offers suggestions as to why aggression and war themes are not portrayed so flamboyantly on Crete as they are in main-land Greece. The dual-processual model as applied to the Aegean explains under what conditions heterarchies and hierarchies are established. Thus, the contrasting development and arrangement of these two societies may demonstrate why Mi-noans and Mycenaeans emphasized aggressive androcentric imagery to different degrees.

Do Sherds Speak by Themselves? The Case of the Neopalatial Assemblage from Myrtos-Pyrgos' Cistern 2
Emilia Oddo, University of Cincinnati

The role of pottery in archaeology is often limited by researchers to its stylistic analysis, with the aim of reconstructing a chronology essentially based on manufacture with special reference to fabric, ware, and form. Although such an analysis is essential, pottery can offer much more than that. Its role in reconstructing the behavior of ancient societies must foremost be inferred through an analysis of its archaeological context, starting with stratigraphy. In turn, stratigraphy can reinforce, reject, or modify chronology based on style.

This paper aims to present in summary the assessment of the large and unpublished pottery assemblage dumped in Cistern 2 at the site of Myrtos-Pyrgos, Crete, during the Neopalatial period. The material in question has been affected by a postexcavation selection, one biased toward diagnostic fine decorated ware. However, this has not limited the assemblage's potential to contribute to the understanding of its formation. The detailed examination of the cistern's stratigraphy was the starting point in addressing the nature and circumstances of the deposition of this dump. Pivotal to this analysis has been the identification of cross-joins (which were plotted on archaeological sections) and observations regarding wear on the sherds' surfaces and breakage points. Both reveal a constant pattern of deposition throughout the cistern, which suggests that this assemblage was formed during a single depositional episode. As a result of this stratigraphical analysis, the originally proposed date for this assemblage is reconsidered.

Seals and Sealings from the Boyd-Hall Excavations at Gournia, Crete
John G. Younger, University of Kansas

Recent excavations at Gournia, Crete, under the direction of L. Vance Watrous have produced seals, sealings, and Linear A documents. A discussion of the Neopalatial seals and sealings found in the early 20th century by Harriet Boyd and Edith Hall may put the new finds into perspective.

Four Neopalatial seals from the settlement are made from local soft stones. These belong to the Cretan Popular Group (e.g., *CMS* 2(3), no. 236), a large set of seals probably controlled by Knossos for lower-class citizens who had occasional need to send sealed contributions to the central administration.

Nine seals from the village, however, are made of hard stones that are exotic to the Aegean; these seals were undoubtedly also made in palatial workshops, but for elites. The cemetery at Sphoungaras almost exclusively produced hard-stone seals, all of which belong to a single class, the "Talismanic." These seals must also have belonged to elites.

Since Talismanic seals rarely impressed sealings (e.g., fewer than 10 come from Knossos), their elite owners must not have used them often to send sealed commodities to the central administration. Perhaps they contributed other kinds of services.

From Gournia come two types of sealings, packet sealings and noduli, all apparently of nonlocal clay.

Packet sealings were used for small vellum packages, presumably those containing written messages. Many packet sealings are impressed by gold rings, several of which ("replica rings") were apparently made at Knossos to impress documents sent out to different sites. The same replica ring impressed packet sealings from the Gournia Palace (*CMS* 2(6), no. 162), Hagia Triada, and Sklavokambos.

Noduli are clay lumps that sealed nothing but could receive seal impressions. They may have authenticated itinerant personnel from the central administration. Eight noduli found together at Gournia and impressed by a single seal may have authenticated multiple visits by one administrator. One nodulus from the palace was also impressed by a Knossos replica ring (*CMS* 2(6), no. 161) bearing a bull-leaping scene similar to that on the impressed packet sealing also from the palace; perhaps both documents came from the same Knossos bureau.

The Gournia seals and sealings, therefore, point to a close connection with Knossos but not one that demanded sealed contributions from its elite members, who must have performed other kinds of valuable services. We can only speculate as to what those services might have been.

The Nature and Function of Privacy on Neopalatial Crete: An Architectural Analysis
Miriam G. Clinton, University of Pennsylvania

The concept of privacy in the ancient world is elusive; modern definitions almost certainly cannot translate directly. It can be almost impossible to reconstruct the attitudes of prehistoric peoples, such as the Minoans, toward the function and nature of privacy. Cognitive archaeology offers a potential window into the Neopalatial concept of privacy. Through architectural analysis to determine what spaces were deliberately made inaccessible and through close study of the finds, this paper distinguishes what the Minoans set aside as private spaces and how they used them.

Using access and circulation patterns, the paper identifies private spaces in a variety of Neopalatial structures, including buildings from Nirou Chani, Pseira, Mochlos, and Kommos, among others. The architectural analysis demonstrates that few spaces were truly private in a modern sense. Many were semiprivate, open to select visitors or at certain times. This stands in contrast to modern domestic architecture, in which up to half of the rooms in a structure might be fully private.

Identifying the spaces the Minoans considered private makes it possible to determine how they used those spaces. The paper lays out common features of inaccessible rooms, examining both architecture and artifacts. It shows that the Minoans did not set aside enough private space to constitute residential quarters. Instead, they used private spaces for two functions: storage of valuable objects and ritual. Rarely can any other function for private space be conclusively identified. Although storage of valuables requires inaccessibility, the inclusion of ritual areas and exclusion of residential quarters from private spaces are revealing. They show that the function of Minoan privacy is more tied to religion than to habitation. These functions differ sharply from the modern conception of privacy.

An examination of architecture reveals conscious choices made by Minoan builders and inhabitants. Inaccessible rooms, which visitors were guided away

from, were almost certainly not "private" in the modern sense. They were, however, meant to be used by selected groups. This paper uses architecture and artifacts to show that the nature of Minoan privacy was different from the modern; far fewer spaces were private in the Minoan world than modern Westerners would expect. In addition, Minoan privacy largely functioned to segregate ritual spaces rather than to allow for undisturbed sleeping. This paper offers new cognitive insights into both the nature and function of privacy, a most subtle concept in the Neopalatial world.

SESSION 4A: Colloquium
Comparative Approaches to Mycenaean Cooking Vessels

ORGANIZERS: *Debra A. Trusty*, Florida State University, and *Julie A. Hruby*, Darmouth College

Colloquium Overview Statement

This colloquium investigates the potential of Mycenaean cooking ware vessels to illuminate prehistoric lifeways. One major lacuna in Mycenaean archaeology has been the study of the production and trade of cooking vessels. In the past, scholars have argued that such vessels do not exhibit morphological change over short periods of time. These scholars maintained a focus on the study of painted fine ware vessels because elaborate decoration is more amenable to stylistic study. In this colloquium, we maintain that cooking wares also have the potential to reflect significant economic, political, and social changes when analyzed with and contrasted with assemblages from other sites or periods. This colloquium presents new research that demonstrates how comparative analyses can illuminate Mycenaean culture.

The papers in this colloquium focus on the potential impact that cooking vessels can have on the archaeological interpretation of sites and the identification of socio-economic connections that existed between major citadels during the Late Helladic period. An introductory paper by the organizers discusses the history of this lacuna in Mycenaean studies and identifies potential approaches to such problems. The following papers then focus on specific assemblages from recently excavated or studied sites around the Mediterranean. "Aeginetan Cooking Pottery" compares Late Bronze Age and Early Iron Age cooking vessels from Kolonna with the more well-known Middle Bronze Age examples from the same site to understand changes in fabric and production techniques. "Late Helladic Korakou" then examines the morphological, petrographic, and chemical differences between fine ware and cooking ware vessels at Korakou. "Supra-Regional Comparison" considers a supra-regional approach to Late Bronze Age cookware from Mitrou, Tsoungiza, and the Menelaion, and "Cooking Vessels from Iklaina," contrasts the two phases of cooking pot assemblages at the site. Moving to Crete, "Kitchens at Mochlos" looks closely at kitchen assemblages dating to Late Minoan I and Late Minoan II-III, followed by "Postpalatial Crete, Mainland Greece, and Their Western Periphery," a large-scale study of Minoan, Mycenaean, and Italian components of Postpalatial cooking wares from Phaistos. Finally, "Replicating and Using

Vessels" discusses a replication study of Mycenaean cooking vessels designed to illuminate the actual use of these vessels. The discussant is a well-known scholar who specializes in the field of Mycenaean ceramics and the scientific analyses used to understand such vessels.

DISCUSSANT: *Michael L. Galaty*, Mississippi State University

Aeginetan Late Bronze Age and Early Iron Age Cooking Pottery
Walter Gauß, Austrian Archaeological Institute at Athens, *Evangelia Kiriatzi*, Fitch Laboratory, British School at Athens, *Michael Lindblom*, Uppsala University, *Bartłomiej Lis*, Polish Academy of Sciences, and *Jerolyn E. Morrison*, University of Leicester

Recent interdisciplinary investigations of pottery landscapes on Aegina have shed new light on the production and manufacturing technology of Aeginetan pottery during the Early Bronze Age III and the Middle Bronze Age, as well as in Archaic and Classical times. However, the picture of Aeginetan pottery production during the Late Bronze Age and the Early Iron Age remained blurred because no well-dated pottery of those periods was available for analysis. Recent work on Aeginetan pottery from those periods, carried out both on Aegina and outside the island, provides ample evidence for the continuity of production and wide distribution across the central Aegean, and the cultural emphasis on cooking wares. The current project, funded by Institute for Aegean Prehistory aims to fill the existing gap by focusing on the conditions of production and circulation of Aeginetan cooking pots during the Late Bronze Age and Early Iron Age. It is based on the detailed macroscopic study, sampling, and petrographic analysis of a number of assemblages covering the Late Bronze Age to Early Iron Age from Kolonna itself as well as Mitrou, Asine, Tsoungiza, and Kalavria-Poros.

The main focus of the project is the detailed characterization of the fabric(s) and manufacturing technology of "Aeginetan cooking ware" during the Late Bronze Age and Early Iron Age. Standardized macroscopic and microscopic descriptions of morphological, technical, and compositional features of the sampled pottery illuminate the following issues: Is there continuity in the use of raw materials and technology from the Middle Bronze Age? Is it possible to isolate fabric subgroups within the broad group of Late Bronze Age/Early Iron Age Aeginetan cooking pottery? If so, do they reflect changes in time, across space or workshop traditions, or both? The analysis of a larger number of well-dated fragments with identical potters' marks might help answer such questions. Ideally, fragments bearing the same mark should be uniform in fabric and technological features. Such a result would be a major step in defining individual workshop traditions on Aegina and would shed more light on the issue of organization of pottery production. An important part of the project is the investigation of a major restructuring of pottery production on Aegina that took place during the Late Helladic IIIA period, which is reflected in an introduction of a new range of cooking pottery shapes and a new marking system. Was this process combined with a change of clay recipe as well? Analysis of samples from a Kolonna pottery kiln and a selection of fragments from well-stratified sites can help elucidate this issue.

Cooking Vessels at Late Helladic Korakou: Implementing a Multilevel Methodology

Debra A. Trusty, Florida State University

Korakou was excavated by Carl Blegen nearly 100 years ago, but the artifacts from the site still hold interesting details about Korakou's economic and political conditions during the Late Helladic period. Korakou is a small settlement located along the Corinthian Gulf, approximately 40 km north of Mycenae, and was excavated between 1915 and 1916. The site is 3 km west of the modern city of New Corinth and is positioned on a bluff on the Corinthian plateau. Foundation walls and at least 11 successive levels of habitation provide evidence that this site was continuously occupied from the Early Helladic to Late Helladic periods and was used as a major harbor for the surrounding area. Blegen's study of ceramics from this site formed current understanding of the stylistic development of prehistoric ceramics and the characteristics for the divisions of "Early," "Middle," and "Late" Helladic periods. Nevertheless, Blegen based his chronology on fine ware vessels and paid little attention to cooking vessels despite that these types of sherds were frequently found in all levels at Korakou.

It is clear that at varying times throughout the Late Helladic period, Korakou was politically and economically connected to a ruling elite based in either Aegina or Mycenae. I argue that these connections and patterns can be seen in the cookware fabrics and confirm hypotheses formed by other scholars conducting analyses on fine ware vessels from the Corinthia. To understand the techniques used by the Mycenaean elite to gain control over the economy of local and regional territories, this project implements a methodology developed by Earle that looks closely at the three phases of a good's "life cycle": production, distribution, and consumption. This method allows archaeologists to better understand the processes of exchange in the prehistoric world. Earle outlines three tasks required to describe exchange: (1) sourcing the products that are exchanged, (2) creating a spatial patterning of commodities, and (3) reconstructing the organization of exchange. Completion of each of these steps requires scientific analysis to determine the source of the materials, such as chemical, petrographic, or stylistic tests, all of which are major components of this paper. Using the results of these tests, it is possible to determine the exact periods when control fluctuated between Mycenae and Aegina and, therefore, to expand the current understanding of the centralization and organization of craft production in early state political economies.

Mycenaean Cooking Pots: An Attempt at a Supraregional Comparison

Bartłomiej Lis, Polish Academy of Sciences

Although seriously understudied, cooking pots from the Late Bronze Age Greek mainland seem to receive much more attention now than in previous decades, and this colloquium is another sign of a growing interest in less attractive categories of pottery. However, what has been missing so far is a comparison on a supra-regional level. Are cooking pots similar to each other irrespective of the region, as is the case for the decorated Mycenaean pottery? Is the degree of similarity changing over time? What can observed similarities and differences tell us about the circum-

stances of cooking-pottery production and consumption? In my paper, I address these issues by comparing evidence from three sites located at considerable distance from one another—Mitrou (East Lokris, central Greece), Tsoungiza (Korinthia, northeastern Peloponnese), and Menelaion (Laconia, southern Peloponnese).

Mycenaean Cooking Vessels from Iklaina
Cynthia W. Shelmerdine, The University of Texas at Austin, and *Joann Gulizio*, College of Charleston

Coarse wares are often overlooked in the study of Mycenaean pottery. One reason is the belief that cooking-vessel shapes and fabrics change very little over time and therefore cannot inform us about changes in political, economic, and social structure. This traditional view is in stark contrast to our understanding of fine, decorated Mycenaean vessels, whose ever-changing shapes, fabrics, and decoration have been instrumental in the identification of both temporal changes and regional distinctions in pottery production. However, a systematic study of coarse wares from the site of Iklaina in the southwestern Peloponnese demonstrates that changes in cooking vessels, too, can reflect important changes in Mycenaean society.

Recent excavations at Iklaina are revealing the remains of a second-order center, believed to be *a-pu$_2$*, a district capital in the Mycenaean state of Pylos. Two major Late Bronze Age building phases have been identified across the site: (1) a later phase (LH IIIA2 [late]–IIIB2) that seems to represent a period when *a-pu$_2$* was under the administrative control of the Palace of Nestor, and (2) an earlier phase (LH I–IIIA2 [early]), when the site may have been politically autonomous. An examination of coarse wares has allowed us to identify certain distinctions between cooking vessels of these two different phases.

We begin with an overview of the coarse pottery, which includes both regional and microregional variants. We then focus on the most common shapes and fabrics for the two different phases of occupation. In particular, we analyze some distinctive Early Mycenaean tripod cooking pots that exhibit distinctive regional features and occur in a wide range of sizes. Tripods also are made in a variety of different fabrics, many of which are especially common in the Early Mycenaean period. In contrast, we have found numerous examples of "souvlaki stands" and griddles that belong primarily to the Late Mycenaean period. These are far more standardized in both shape and fabric. The diversity of Early Mycenaean shapes and fabrics, in comparison with the more standardized Late Mycenaean types, seems to parallel other evidence for the shift from independent polities to centralized administration. Thus, changes in cooking vessels at Iklaina during the Late Bronze Age not only support our interpretation of the different building phases at the site but at the same time may reflect changes in Mycenaean cooking and eating habits, perhaps resulting from Iklaina's absorption into the state of Pylos.

Cultural Connections in the Mycenaean Hinterland: Evaluation of the Late Minoan (LM) I and LM II–III Kitchens at Mochlos, Crete

Jerolyn E. Morrison, University of Leicester

Using contextual analysis, this paper reconstructs kitchens at Mochlos in eastern Crete from the Late Minoan (LM) I phase of the Minoan settlement and the LM II–III phases of the Mycenaean settlement to investigate whether cultural connections existed between these communities. Cooking pot and food preparation assemblages, hearth arrangements and location, and food remains are considered in this study. All evidence presented has been published in the series of excavation reports and in supplementary publications, but it is reexamined here from a cultural perspective that links cooking technology and techniques to specific groups of people.

Evidence for the reoccupation of Mochlos during LM II–III was uncovered by the Greek-American team led by Jeffrey Soles and Costis Davaras in 1989–1992 and in 2004–2005. Reoccupation took place approximately 30–40 years after the destruction and abandonment of the Neopalatial town when the Mycenaean Greeks were in control of the palace at Knossos and could have been expanding their control into eastern Crete. Mochlos would have been a strategic location to establish a satellite governor and settlement because the new community could take advantage of the naturally protected harbor and well-watered agricultural plain. Since the time between the destruction and abandonment of the LM I settlement and the LM II–III reoccupation was brief, it is possible that some of the new settlers were grown children returning to their hometown or were direct descendants from families that once lived at Mochlos, rather than people unfamiliar with the area.

Producing and Using Cooking Vessels in the Late Mediterranean Bronze Age: A Comparative Evaluation of Kitchen Wares and Related Practices in Postpalatial Crete, Mainland Greece, and Their Western Periphery

Elisabetta Borgna, Università degli Studi di Udine, and *Sara T. Levi*, Università degli studi di Modena e Reggio Emilia

A survey of several archaeological assemblages reveals that in the Postpalatial period cooking ware was one of the strongest markers of Mycenaean cultural components at a Mediterranean scale. Mycenaean cooking vessels have been recognized in many Aegean and Mediterranean contexts, such as Crete, Cyprus, and the Levant, where they have been supposed either to mark the presence of Mycenaean people or to underline a major influence from the mainland in the field of cooking and consuming practices.

However, as regards the central Mediterranean, although the Mycenaean technological connection had a profound impact on the contexts of production and use of local pottery by prompting various phenomena of assimilation, integration, hybridization even in the field of plain ware and storage vessels, evidence for integration in the domain of cooking and consuming activities is not conspicuous; both imports and local products imitating Aegean cooking vessels are indeed scanty in southern Italy.

To explore cooking practices in the Aegean peripheries, it would be worth considering in greater detail Handmade Burnished Ware, which constitutes a kind of feedback of the technological transfer to Italy and other peripheral areas in the field of pottery production. Data concerning the diffusion of "foreign" cooking practices in the archaeological record, including Handmade Burnished Ware in the Aegean are, however, not straightforward; functions and technical properties of the most common Handmade Burnished Ware shapes are not clear so far.

Starting from a diachronic functional and technological investigation of cooking ware in Postpalatial Crete, with particular reference to Late Minoan IIIC Phaistos, this study aims to single out evidence of contacts and convergence or discontinuity and distance in the domain of cooking activities and social practices in the context of cultural interaction involving distant societies: Minoan and Mycenaean components facing each other in Crete as well as Aegean and Italian communities in the framework of long-distance relationships.

To explore how these activities and practices relate to the production and use of kitchen ware, some aspects concerning the technology of pottery, including properties of fabrics and production processes, as well as cooking installations, are investigated in the context of Italian "impasto" ware and Aegean Handmade Burnished Ware on the one hand and specialized wheelmade ware on the other. A closer investigation is devoted to some artifacts, such as portable ovens, which, on the basis of typological comparisons, seem to have taken part in the Mediterranean koine of the Late Bronze Age.

Building Understanding Through Hypothesis Testing: Replicating and Using Mycenaean Cooking Vessels

Julie A. Hruby, Dartmouth College, and *Connie Podleski*, Oregon College of Art and Craft

The study of the production and trade of Mycenaean cooking wares to illuminate prehistoric lifeways has long represented a major lacuna in Mycenaean studies, in part because of the preeminent position that typological and chronological approaches to ceramics have traditionally held. This paper argues that if we shift our questions away from chronology and toward culinary culture, cooking wares become critically important sources of information.

While some questions about prehistoric cuisine are answerable only through the analysis of residues, many questions about cooking technologies are better answered through replication studies. Indeed, the two types of analysis may be profitably linked through the use of replicated pots that have been used with known ingredients and cooking techniques as comparanda for residue analysis.

Replication studies' primary utility, however, is for elucidating the relationships between vessel form, production process, vessel function, and the cooking environment. This utility is demonstrated through the testing of several hypotheses related to two specialized Mycenaean cooking pot types, the perforated griddle and the "souvlaki tray." The highly specialized characteristics of both vessel types have given rise to questions that are answerable through replication studies, including why the exteriors of griddles are often polished, why griddles have partial perforations, why some griddles have higher walls than others, which way

griddles were oriented, whether coals were placed in or under souvlaki trays, and what the reason was for the characteristic burning patterns on each.

While these questions might initially seem merely technical, their implications are extensive, providing information on the locations and weather conditions in which cooking took place, the styles of food used to demarcate status, and the level of technological sophistication that Mycenaeans brought to bear on their cuisine.

SESSION 4B: Colloquium
Pushing Boundaries: Regionality in the Frontier Zones of the Roman Provinces
Sponsored by the Roman Provinces Interest Group

ORGANIZERS: *Daryn K.S. Reyman-Lock*, University of Nottingham, and *Eleri H. Cousins*, University of Cambridge

Colloquium Overview Statement

The borders of the Roman empire were neither permanent nor rigid structures; they moved in response to political circumstances and military movements. Furthermore, they generally did not separate cultures that were radically different from one another but instead were bound on either side by culturally similar populations whose movement was not necessarily restricted by the presence of the boundary. While frontiers and provincial boundaries were physically or ideologically defined by geography or monumental architecture, the degree to which those definitions altered the lives of provincial populations was variable, subject to change based on contact with other groups.

This session aims to engage theoretically and methodologically with the "boundaries" that defined the Roman world: the means by which they were socially, politically, and ideologically constructed; the ways in which they were presented to and experienced by people both incorporated in and external to the empire; and how these abstract concepts can be reconstructed through concrete remains visible in the archaeological record. Papers presented in this session explore the variability of the frontier experience throughout the empire. They use archaeological evidence from artifacts to monuments to examine two related themes:

(1) Adoption and adaptation of new cultural constructs by communities and individuals living within frontier zones and proximal to provincial boundaries

(2) The negotiation of identity by individuals and groups crossing these politically defined lines

The colloquium begins by exploring these issues in communities within border provinces. The first paper examines triumphal architecture in Gallia Narbonensis, while the second investigates civic and political institutions at Dougga in North Africa. The focus then moves to cross-boundary identity on the Dacian frontier, followed by two presentations on Late Roman Britain—one which explores the social and geographical boundaries present in everyday material culture, and the other the changing role of commanding officers in northern Britain at the end of empire.

Interactions along border zones present complex problems of interpretation. Identities in these spaces were constantly being created, destroyed, recontextualized, and reaffirmed relative to a "foreign" other. By exploring the mechanisms through which these negotiations occurred in a range of provinces across the empire, it will be possible to expand the scholarly conversation of social identity.

DISCUSSANT: *Sue Alcock*, Joukowsky Institute for Archaeology, Brown University

Internalizing the Frontier: The Triumphal Architecture of Gallia Narbonensis
Daryn Reyman-Lock, University of Nottingham

The Pax Romana was based on the unconditional acceptance of Roman sovereignty and allegiance of foreign peoples to the emperor. It was, however, a dualistic political concept: the internal provinces enjoyed a peace that the frontiers did not during the early principate. Roman victories were soon immortalized on triumphal arches and trophies, most notably in Gallia Narbonensis, where arches were more prevalent than in any other province in the western empire, save perhaps for Italy. Most Narbonensian arches were decorated with symbols and scenes associated with specific battles or prominently displayed fettered prisoners, particularly those of Gallic warriors, in order to communicate specific political messages about the power of the Roman empire and the local communities to which they belonged. As the arches were sited on the pomeria of cities located along Agrippan highways, they were highly visible monuments and would have been encountered by travelers from other western provinces on their way to Rome. The collective iconographic and symbolic effect of the arches helped to turn Gallia Narbonensis from an insular province into an ideological buffer zone, creating an enlarged border between Italy and the rest of the western provinces.

More than One Place at the Same Time: Multiculturalism and Political Definition at Dougga
Sarah H. Davies, Whitman College

In many ways, the Roman empire was never a fixed entity: its outer limits, both physical and conceptual, remained in constant flux. A study of Roman power thus involves an exploration of its moving boundaries. These boundaries, however, were not only those on the latest military frontier; they were also those on the points of contact between cultural and political communities on the presumed interior. Dougga (Thugga), in the nearest hinterland of Carthage in north Africa, represents an excellent example of such an internal, regionally specific frontier zone. This site, variously a center for indigenous tribes, Carthaginian imperial expansion, and the internationally ambitious Numidian kingdom, was formally integrated into the Roman empire by Octavian-Augustus, in his reorganization of Africa (Nova) and his establishment of Carthage as a Roman *colonia*. During this reorganization, Dougga was granted a position as a *pagus* of Roman citizens within the *pertica* of Carthage. Yet at the same time, it was also designated a *civitas* for non-citizen inhabitants with immune (*peregrine*) status. The earliest modern

scholars who studied this duality considered the *pagus* and *civitas* as utterly separate communities, in physical, cultural, and legal terms. More recent scholarship, though, has revealed that there was no such apartheid-like division: the Roman-period site developed organically within the space of the earlier settlement, and both architectural styles and public inscriptions indicate a level of coexistence between "Roman" and "non-Roman" populations. This paper, however, goes further and suggests a third interpretation of the evidence. It reanalyzes the trajectory of Dougga's urban development, from pre-Roman beginnings through the third century C.E.; it considers the evolution of bilingualism, modern ethnographic evidence of Tunisian "Berber/Kabylie" social organization, and changing epigraphic references to the *pagus* and/or *civitas*; and it examines stylistic choices made by elites in erecting public monuments and by nonelites in commissioning votive stelae. It concludes that Dougga's supposed "Romanization" involved much more complicated, and perhaps even tense, processes of multicultural mapping, in which local/regional status and preexisting diversity played the defining role. Incoming Roman citizens—and over time, those of local origin who gained citizen status—ultimately conformed to preexisting norms and patterns of cultural mixing. In the end, Dougga was a truly fissive Roman border zone: one in which the very nature of "Romanitas" was locally determined by those who encountered Roman political administration within an established system of cultural overlap and negotiation.

Confronting *Barbaricum*: Issues and Challenges in the Study of the 'Free Dacians'
Emanuela Bocancea, Brown University

Dacia was one of the last two provinces added to the Roman empire (106 C.E.) and the first to be abandoned (271/275 C.E.). Annexed after Trajan's victory over the unified tribes led by Decebalus, Dacia became the only Roman province to extend the *limes* beyond the Danubian frontier. One of the biggest questions about Roman Dacia has been the fate of the native Dacian population after 106 C.E. Unlike other conquered populations within the empire that continued to thrive under Roman rule, the natives in Dacia seem to have disappeared. Scanty (and problematic) historical records report that the Dacian population had been annihilated in the wake of the Dacian Wars. Epigraphic and archaeological evidence of Dacian continuity has been meager and inconclusive, and all data point to a massive influx of "Roman" colonists from other provinces who constituted the population of Roman Dacia. But one important element is the purported existence of "free Dacians" living along and beyond the *limes* of Dacia throughout the second and third centuries C.E. Who are these mysterious Dacian "barbarians" and what is their relationship to the missing Dacian "natives" within the province? To what extent are these terms (and this ethnonym) even useful or valid? By focusing on the available archaeological sources, this paper provides a critical examination of the material evidence for the so-called free Dacians along Dacia's frontiers and considers their relationship to the province of Dacia and to the native Dacians sought within its boundaries. In so doing, this investigation interrogates the theoretical and methodological underpinnings of ascribing ethnic identities to natives and barbarians within Roman provincial (esp. frontier) contexts.

Material Culture Patterning and Everyday Practice in Late Roman Britain: Investigating Social and Geographical Boundaries
Ellen Swift, University of Kent

While frontiers and boundaries are conventionally understood as physical features defined by geography and/or boundary structures, they can also be viewed as discontinuities in culture and practice that may indeed map onto physical features of the landscape but may also be defined according to other criteria. Cultural boundaries and the divergence in lived experience that may have occurred between different communities living within the same province can perhaps most fruitfully be explored through an examination of the material world, with its intimate involvement in both daily practice and behavior, as well as the construction and communication of identity. In this paper, I examine material-culture patterning across different site types and regions in Late Roman Britain. Research on material culture often focuses on one artifact type or material. By contrast, this paper examines a wide range of Roman material including bone, metal, glass, and pottery artifacts, both geographically and across a range of site types, termed "social distribution" by Eckardt. Different types of artifacts are shown to be present in different geographical areas (e.g., the preponderance of some imported artifact types toward coastal distribution). I also consider what can be inferred from artifact distribution concerning divergence in social practice among different communities. "Mediterranean Roman" style artifact types most closely linked with Roman cultural practices are shown to be associated with military and large urban sites, while some other artifact types can be linked to rural communities and perhaps show different habits of daily practice. Recycled artifacts, meanwhile, are a widespread feature of the end of the Late Roman period in Britain, but choices in what to recycle and how demonstrate the existence of cultural boundaries and differing social practice among different communities. Overall, this exploration of material culture illuminates the diversity of everyday practice in Late Roman Britain.

Power at the Edge of Empire: The Dynamic Archaeology of Commanding Officers in Northern Britain, ca. 300–450 C.E.
Rob Collins, Newcastle University

By the fourth century, the officer corps of the army was professional and composed of career soldiers. These were men that commanded the frontier soldiers, the *limitanei*, and provided the vital link between the *realpolitik* of the frontiers and policies formed in the imperial court. Textual sources point to the increasing power of frontier commanders beyond the strict remit of their military authority, and the archaeology provides us with another data set by which we can interrogate this vital class of Late Antique elite. In the northern provinces of the Britains, notably along Hadrian's Wall and within the forts in its southern hinterland, decades of archaeological investigation have provided a large (if fragmentary) sample of excavated *praetoria*, commanding officers' houses. Through the course of the fourth century, reductions in opulence and even the overall size and form of these houses suggest a change in the presentation of officer power, a conclusion further reinforced by the small finds evidence. The changes observed in the archaeology

are considered in the context of a Late Roman frontier and the overall politics of the later Roman empire and support a conclusion that in many parts of the Roman West, it was the military officer class and not the landowning gentry that had enduring significance in defining Romanitas in the post-Roman transition.

SESSION 4C
Greek Funerary Sculpture

CHAIR: *Mary Sturgeon*, University of North Carolina at Chapel Hill

Funerary Sculpture from the Athenian Agora: The Completion of a 20-Year Project
Janet Grossman, Independent Scholar

In 1991, the late Evelyn B. Harrison suggested that I study sculptured reliefs that had been excavated in the Athenian Agora, with the aim of determining those that are funerary in nature. Now, after some 20 years, funerary sculpture of the Classical, Hellenistic, and Roman periods from the Athenian Agora is contained in volume 35 of the *Agora* series published by the American School of Classical Studies at Athens.

Most of the sculptures from the Agora are fragmentary and in a battered state of preservation, having been found during the demolition of modern houses. The quality of the sculptures is generally at the lower end, in comparison with what is known of sculpture production in Athens, but some exhibit carving of the highest degree. The range of style and quality in these monuments suggests that in Athens their use was not restricted to the privileged few but rather was accessible to most of the population, whatever their social status.

The findspots of the Agora funerary sculptures demonstrate the utilitarian use of ancient sculpture. Just as funerary sculptures were built into the Themistoklean Wall, they seem to have been seen as convenient and accessible building blocks in other periods of the city's history. Some of the Agora pieces were used as slabs to cover the Great Drain; one was built into the Late Roman fortification wall, where it remains to this day. Other stelae come from Byzantine and Turkish contexts. Most of the sculptures, however, are from the 19th century post-Turkish era of house and shop construction that took place in the area of the ancient Agora after Greek independence.

I describe the process involved in determining that 389 of the 3,555 sculptures catalogued in the Agora by 2009 are funerary. I present the rationale for dating each sculpture, as well as the iconography. I focus on unique and unusual funerary depictions and monument types. Most exciting is the fragment of a unique classical stele portraying a priestess of Athena. Unusual scenes include the fragment of a stele with a kneeling attendant figure and fragments of three monuments depicting Hermes Psychopompos. Examples of rare Roman monument types include a triangular monument with three figural niches, a triangular monument with the relief of a butterfly, and a funerary altar with Bacchic motifs.

The Kore of Phrasikleia in Context: The Kouros' Pyre
Angele Rosenberg, The University of Chicago

In this paper, I examine hitherto-neglected lekythoi associated with the famous interment of the Phrasikleia kore and her so-called brother at Merenda in Attica. Passed over in the vast literature on these monuments, including the excavation report, the ceramic evidence settles a number of long-running disputes and clarifies the ritual setting of the interment. I had the opportunity to study this material in 2009 and 2013 at the archaeological museum in Brauron, thanks to the generosity of the second Ephorate of Prehistoric and Classical Antiquities. The four black-figured lekythoi that I examined were included in a pyre burned during the burial ceremony of the statues, thereby fixing the burial's date.

The paper begins with an introduction to E. Mastrokostas' excavations of 1972. Only a limited portion of the cemetery was excavated, but the investigations show a clear spatial and chronological relationship between the pyre and the pit with the statues. As a result, the date of the ceramics is integral to the interment's chronology. Stylistically, two of the lekythoi date to ca. 500–475 B.C.E. and two to ca. 460 B.C.E. The later date definitively ends the disagreement regarding the circumstances of the interment. Based on the damage suffered by the statues, scholars have argued either that they were buried in anticipation of the clashes between the Alkmaionidai and the Peisistridai of ca. 540 B.C.E. or that they were mutilated during the Persian invasion of ca. 480 B.C.E. The lekythoi conclusively exclude the earlier date. I continue to argue that it is unlikely that the Persian army damaged the statues. Comparison with other sculpture affected during the invasion reveals a significantly different manner of destruction. It is more likely that the two statues were vandalized during local disputes of which no written record is preserved. I conclude by relating the extraordinary treatment of the damaged statues to existing discussions regarding the ontological status of statues in archaic Greece.

From Street to Grave: Women's Funerary Monuments and Women's Public Lives
Anne Weis, University of Pittsburgh

Attitudes toward ancient women have changed rapidly in the last decade, although more in response to theory and to increasing Western sophistication about the world beyond Europe and the Americas than to the emergence of new bodies of evidence. From the 19th through the 20th centuries, images of the matron in her chair have evoked the *gynaikon*, or "women's quarters," where the wife oversaw her household, surrounded by children and maids. These images seem to embody Xenophon's (*Oec*. 7.30) statement that it is seemly for a woman to remain at home and not be out of doors and to reaffirm the traditional belief that women in affluent Greek households were secluded, communicating with the world only through husbands, male children, and servants. This was always a difficult view to maintain. It has long been recognized that Athenian women went to the well, worked in the market, and served as priestesses, but it was suggested that "working-class" women enjoyed greater freedom of movement than did the elite and that priestesses had privileges that other elite women did not. This, too, seems unlikely: in Aristophanes' *Lysistrata* (1–3), women are said to turn out in large numbers for the

rites of Bacchus, Pan, and Aphrodite at Kolias and at Genetyllis; in Menander's *Dyskolos*, Sostratos' mother spends every day in ritual, traveling around the deme of Phyle (260–65) and even into the deme of Paiania (407-409), sacrificing to the gods. It is thus now widely accepted in the scholarly literature that elite Greek women—not just priestesses but ordinary women of means—were active in rituals carried out in public—public sacrifice, funerals, visits to the family tomb, or visits to small religious shrines. In this paper, I focus on the ritual excursions made by elite women of the Late Classical and Hellenistic periods (women like Sostratos' mother), on the attributes of the excursion (what contemporary Greek authors called the *exodos*), and on the impact that the *exodos* had on funerary commemoration, especially grave stelai and the terracottas placed in women's graves. Since the 1980s, there has been a steady stream of interest in Greek women's lives but no attempt, to my knowledge, to isolate and study this particular aspect of elite women's experience, its institutional status within polis life, and its potential for ongoing interpretation of the archaeological record.

Woman as Status Symbol? The Polyxena Sarcophagus and a Krater from Thrace
Timothy J. McNiven, Ohio State University

The Polyxena Sarcophagus in the Çanakkale Museum presents an iconographical conundrum. Its imagery is decidedly female: the sacrifice of Polyxena appears on two sides. The other two sides show women at home and at a form of entertainment. The puzzle lies in the sex of the deceased, an adult male. It is possible that the sarcophagus was created for a woman and only used for a man by chance, but the superb quality and complex imagery make such a solution unsatisfactory.

A red-figure column krater in the museum at Tekirdağ, Turkey, may help make sense of this. Attributed to the Syleus Painter and dated to the first decade or so of the fifth century, the krater depicts Priam ransoming the body of Hector, a familiar enough scene, but with the unique addition of Polyxena, who is being led into Achilles' presence by Hermes. This does not follow the account in the *Iliad*, nor in any other written version of the myth. It is also unparalleled among pictorial versions. Elsewhere, when Priam is not shown alone, he is accompanied by servants loaded with the substantial ransom that a royal prince would command. On the Tekirdağ krater, Polyxena alone is the ransom. Hermes leads Polyxena with his hand on her wrist, a clear reference to marriage, but the viewer must know that the ultimate result is the girl's death.

The equation of marriage with death for women is a common trope in Greek literature and how we would interpret the scenes on the Polyxena Sarcophagus if we didn't know that it belonged to a man. Kraters are usually also viewed as male belongings, and the Ransom of Hektor scene is very much a masculine image, testifying to the power of a hero. Perhaps this is the key to interpreting the sarcophagus as well. Rather than focusing on a feminist interpretation, we must look at the Polyxena Sarcophagus from a man's point of view. Then the focus of the main side becomes the hero's tomb, at which the maiden is being sacrificed. Her death highlights his importance. On the reverse, the luxuriously dressed women, attended by servants and entertained by musicians and Pyrrhic dancers, reflect the status of the dead man. Other members of the ancient elite projected their manliness

through images of warfare and hunting. The owner of the Polyxena Sarcophagus proclaimed his through the opulence and beauty of his women.

SESSION 4D
Approaches to Architecture in Greece

CHAIR: *Barbara Barletta*, University of Florida

Photogrammetry, Three-Dimensional Modeling, and New Interpretations of the Heraion at Olympia

Philip Sapirstein, University of Nebraska–Lincoln, and *David Scahill*, American School of Classical Studies at Athens

The objective of the Digital Architecture Project is to produce three-dimensional models and web-based visualizations of temples from the Greek mainland and Italy, in service of a broader investigation into the emergence of the Doric style in the Archaic period. The project methods are innovative. Following a total station survey to establish a network of control points, we conduct a detailed photographic survey of each monument. Using a powerful photogrammetric software package, we produce high-resolution three-dimensional models of the building's current state at resolutions of 1 mm per sample. These detailed models enable the generation of highly accurate plans, elevations, and sections, enabling new interpretations and reconstructions of these key buildings.

We initiated the project with the Temple of Hera at Olympia because of its excellent preservation, early date, and importance to developing mainland and western Greek architectural traditions. We completed the field survey and produced a high-resolution three-dimensional surface model of the Heraion in July 2013, with permission of the Deutsches Archäologisches Institut and the seventh Ephorate of Prehistoric and Classical Antiquities.

We present two primary results from our survey. First, the photogrammetric model has prepared us to challenge a fundamental assumption that the Heraion was initially built with a wooden peristyle whose columns were gradually replaced by stone. Scholars have already pointed out the obstacles of installing a stone column in the place of a wooden shaft in a standing building, but our survey shows that cuttings usually identified as serving for erecting wooden shafts are unlike those on the internal colonnades, which clearly did have wooden shafts throughout the history of the building. We argue that from the outset, the Heraion was designed with stone external colonnades and wooden internal columns. Second, the millimetric precision of the model has revealed a pronounced slope in the horizontal surfaces of the stylobate and cella walls. We can demonstrate that the walls and stylobate slope up from the western exterior toward the center in a consistent manner, one that suggests a deliberate design feature. Thus, the Heraion may well represent the earliest example of a refinement from straight horizontal lines attested at a Greek temple. This new observation suggests that such refinements may have been integral even at the beginnings of Greek architectural design.

An Archaic-Period *Ergasterion* in Ancient Corinth

Paul D. Scotton, California State University, Long Beach

The most noticeable remains in the southeast corner of the forum in Corinth are those of a structure now known to date to the fifth/sixth century C.E. That structure incorporated the ruins of a Roman building dating to either the Augustan or Tiberian period. Even earlier activity is present in the form of a number of wells and pits that date at least as early as the third quarter of the sixth century B.C.E. and continue in use up until the foundation of the Roman colony. Recent studies have found that in this area was a modestly sized structure that was previously identified as a possible stoa. This paper presents a more complete assessment of the structure, its use, and its history in the Greek and Hellenistic periods.

At least by the third quarter of the sixth century, this area was in use as an *ergasterion*, likely as a bronze foundry. The facade was oriented southward along a road. The structure was single story with mudbrick on poros orthostates. The precise measurements of the plan cannot be determined at this time, but it was at least 23 m wide and 23 m long. Along the south side was either a single large room or a series of rooms approximately 7.3 m deep towards the north with most likely a simple shed roof. The large room (or at least one of the smaller rooms) opened to a work yard. By the fifth century B.C.E. there was a drain running east/west approximately 3 m to the north of the room(s). It turned northward at the western end of the yard and ran through the area that would later be the colonnade of the Roman Southeast Building and the west aisle of the Julian Basilica. The drain was closed in the fourth century B.C.E. Bronze slag was found in this drain within the work yard. At the east side of the work yard, fragments of iron tools were found in the sixth/fifth-century B.C.E. pit. After the drain was closed, the function of the area shifted, and terracotta figurines appeared. Why this occurred is unclear but additional studies may provide the answer. What is clear is the changing use of the upper Peirene Valley during the Greek and Hellenistic periods from a Geometric-period burial ground to an industrial area to multiple small shrines scattered across the slopes.

Neglecting the Non-Peripteral Temple: A Problem in the Historiography of Ancient Greek Architecture

Marya Fisher, New York University

Scholarship on ancient Greek architecture has generally shown limited interest in nonperipteral temples. From their outset in antiquity, discussions about Greek temples have focused on the grand peripteral structures, systematically neglecting their smaller and less impressive counterparts. This preference for peripteroi belies the importance of nonperipteral temples in Greek ritual practice, a fact made clear from the diffusion and eminent position of this type of structure at many sanctuaries in the Greek world, particularly in the west. While there are key exceptions, especially in recent years, to this cycle of scholarly neglect, it has proven the rule in studies of sacred architecture, from antiquity to the present.

This paper examines how this scholarly silence developed. The paper focuses in particular on the narrative of the Greek temple as it developed in ancient texts,

especially those of Pausanias and Vitruvius. Also examined is how these two sources shaped the discourse on sacred architecture in the treatises of Renaissance humanists, such as Alberti, Palladio and Serlio, and subsequently in the archaeological discourse of the 18th, 19th, and 20th centuries. Through such an examination, it becomes clear that the preference for peripteral buildings in the literature on Greek sacred architecture developed over time and for specific reasons, ones often related more to the goals of individual texts than to the relative importance of peripteral temples in the practice of Greek ritual.

SESSION 4E: Colloquium
Across the Corrupting Sea: Post-Braudelian Approaches to the Ancient Mediterranean

Sponsored by the Roman Provincial Archaeology Interest Group (AIA)

ORGANIZERS: *Lindsey Mazurek*, Duke University, and *Cavan Concannon*, Duke University

Colloquium Overview Statement

Recent scholarship on the ancient Mediterranean has increasingly focused on questions of connectivity and landscape. The works of Braudel, Horden and Purcell, Abulafia, and Pirenne have been particularly influential to these discussions, suggesting innovative methods for rethinking cultural contact and exchange. These scholars view the Mediterranean as a cohesive entity unified by trade and cultural networks. Long-term patterns, rather than individual events, define the Mediterranean Sea. Events, ideas, and conceptual shifts are contextualized within microecology and the longue durée of human history. These models have met with mixed reception among scholars of antiquity. For some, Braudelian scholarship provides a crucial foundation for questions of cultural transmission, imperialism, economy, and environment. Among others, these works have been criticized for their deemphasis of traditional historical subjects, such as wars and politics, and their focus on the static elements of Mediterranean culture. This panel interrogates how useful these models are as analytical tools for objects and landscapes. Our goal is to consider critically the applications of Braudelian and post-Braudelian methodologies that we hope will influence and nuance future research on connectivity and cross-cultural interactions in the ancient Mediterranean.

The papers in this panel critically address these models in two ways. The first half of the panel reconsiders methods of exchange across the ancient Mediterranean by focusing on the small-scale movements of people and objects. These papers explore methods of connecting religious and cultural thought between communities and the construction of local cultic identity through cabotage processes. In the latter half, our panelists explore Braudelian models on a local level, using new modes of analysis to explore the relationships between sea, seafarers, coast, and hinterlands. In doing so, they reconfigure the place of empires and hierarchy within a Braudelian mode of inquiry, offering a new way to assess the long-term impacts of political change. Along with innovative new modes of analysis, this

panel offers an opportunity to critique and extend Braudelian modes of inquiry into new intellectual terrain. We intend to advance the seascape as a new model of thought, integrating GIS technology into our discussion of Braudelian models to think about activity taking place in "in-between" areas on the Mediterranean Sea. At the conclusion of these discussions, Ian Morris will respond by contextualizing these new applications of Braudelian models within the larger scholarly discourse of the ancient Mediterranean.

DISCUSSANT: *Ian Morris*, Stanford University

Egypt Abroad: Isiac Cabotage in the Eastern Mediterranean
Lindsey Mazurek, Duke University

Many post-Braudelian models, particularly Horden and Purcell's, rely on the concept of cabotage to motivate the connectivity that defined the ancient Mediterranean. In cabotage, small-scale trade and transport driven by private individuals permits extensive movement, allowing people and ideas to spread informally. Because this trade was so small-scale, there remains very little evidence that would permit us to study the practice and implications of cabotage. The Egyptian cults offer an exceptional glimpse into the individual agency that drove expansion across the Hellenistic and Roman world. In several cases, most notably at Delos, votive inscriptions and imported objects give us a glimpse of those who traveled across the open seas to found new cults on foreign shores. Delos has long been considered the original vector for the spread of Egyptian cults throughout the Mediterranean. Recently published research, however, has demonstrated that the shrines at Rhodes and Argos also date to the second half of the third century B.C.E. As a result, it is necessary to reconsider our linear narrative of cultic transmission for the Egyptian cults. In this paper, I trace the introduction of the Egyptian gods at the sites of Delos, Rhodes, and Argos. I consider the epigraphic, architectural, and sculptural evidence for the cults at these sites as evidence for multiple modes of cultic transmission across the Hellenistic Mediterranean. I conclude that the Isiac cults offer a model of cabotage that emphasizes individual agency in the spread of cultic ideas and practices across the Mediterranean Sea.

Space, Time, and Local Identities in the Long-Term Archaeology of Ptolemaic and Roman Cyprus
Jody Michael Gordon, Wentworth Institute of Technology

In his reflection on Cypriot culture, *Bitter Lemons* (New York 1957), Durrell described Cyprus as an island whose landscapes had been "wearied and refreshed" by the monuments of different invaders across the "ebb and flow of histories and cultures." Lawrence Durrell, a Mediterranean peripatetic, understood how Cyprus' geography could play either a passive or an active role in relation to human agency and could serve as a legible record of such interactions. This perspective on landscape and culture is akin to that advocated by Fernand Braudel. Braudel

suggested that it was only through the study of short eras vis-à-vis long-term human/environmental dialectics that the "permanent values" characterizing socio-historical development could be detected. Based on Durrell's observations, one might assume that an Annaliste approach to the archaeology of cultural change in Cyprus during the Ptolemaic and Roman periods might be a common analytical mode; yet this situation has rarely been the case. Instead, scholars have often focused on Cyprus' *histoire événementielle* and suggested that local culture emulated the imperial.

This paper's goal is to demonstrate how a Braudelian approach to Cyprus' geohistory and archaeology can illuminate how distinct cultural identities were formed under Ptolemaic and Roman rule. Through an analysis of coins, sculptures, and architecture against a backdrop of several centuries, I show how Cyprus' permanent "spatial" values (e.g., its natural resources and strategic location) and permanent "temporal" values (e.g., its religious cults) could intersect with empires' political goals to create geohistorically unique modes of experiencing empire that could be materially expressed.

Toward a "Text-Market" Approach To Early Christianity
Geoffrey Smith, Princeton University

In the wake of recent compelling critiques of binary approaches to church history, which conceive of conflicts within the church as repeated clashes between orthodoxy and heresy, historians have turned to new models to account for developments within early Christianity. These models allow for the existence of various kinds of early Christian communities and emphasize the likelihood of mutual influence among them. Yet what remain largely unexplored are the points of contact connecting Christian communities—that is, the economic, political, or textual networks that made it possible for communities scattered throughout the Mediterranean world to exchange ideas and influence one another. In this paper, I suggest that textual networks played a crucial role connecting otherwise distinct communities, and I introduce the notion of a "text market" as a means of describing, tracking, and analyzing the exchange of ideas among early Christians. I discuss how a text-market approach relates to recent methodological approaches within the fields of classics, religious studies, and economics known respectively as sociology of reading, religious economy, and sociology of markets. Finally, I place a text-market approach in conversation with the methods of Fernand Braudel and other members of the Annales School to demonstrate how it both builds on and complicates certain fundamental tenets of the Annales paradigm.

Beyond Braudel: GIS Technology and a Samothracian Seascape
Sandra Blakely, Emory University

The mystery cult of the Great Gods of Samothrace offered its initiates safety in travel at sea, ensuring the maritime connectivity fundamental to Horden and Purcell's model of the ancient Mediterranean. Geographic information systems (GIS) technology and network models, combined with the island's rich epigraphic

record, offer a pathway to test the hypothesis that the cult worked: its initiates traversed a seascape that was distinct from that of noninitiates because of the human social network that protected them from anthropogenic risks. The Samothracian cult was exceptionally generous in dispensing *proxenia*, which countered the piracy that plagued the Black Sea and Asia Minor regions in which initiates were most centered. GIS as a data management system allows the storage, categorization, and querying of the thousands of pieces of data relevant to pursuing our hypothesis: we posit that the network thus created was more effective in reducing the degrees of separation among initiates than were the dozens of other cultural mechanisms, from heroic legends to interstate treaties, that linked regions with shared interests and identity. The relevant data bridge the visible and the invisible worlds, while the GIS technology positions both in physical space. This new advance on post-Braudelian approaches reflects a human geography, mapping the social patterns and conceptualizations that both reflected and enabled human movement through space.

Subverting Braudel in Dalmatia: Religion, Landscape, and Cultural Mediation in the Hinterland of the Eastern Adriatic
Danijel Dzino, Macquarie University

The hinterland of the eastern Adriatic suffered a great injustice in Braudel's *The Mediterranean and the Mediterranean World in the Age of Philip II*. The great historian repeatedly sees this region as backward and poor and its society as timeless and unchanging. This "barbarism" of the hinterland is sharply juxtaposed with the distinctive civilization he attributes to the Dalmatian coast and its cities. Braudel did not invent this dichotomy but rather drew on the existing discourse in traveling and scholarly literature. The roots of this discourse can be traced to two centuries earlier, to the influential travel diaries of the Venetian writer Alberto Fortis (*Viaggio in Dalmazia* [Venice 1774]). In his narrative, Fortis constructed the inhabitants of the Dalmatian hinterland as the Morlacchi—exotic "noble savages" of early modern Europe.

This paper engages with this discourse on civilizational inequality and the cultural dichotomy between the eastern Adriatic coast and its hinterland. Subversion of Braudel is best done using Braudelian tools, so the paper presents a longue durée examination of interaction between the Dalmatian coast and its hinterland from the Late Iron Age to the end of antiquity. The focus of inquiry is placed on tracing cultural mediation and exchange of ideas in the domain of religion through several different periods. The paper presents the eastern Adriatic hinterland as a distinct space of invention and interaction, where local traditions are continuously combined with outside influences in an original and unique fashion.

SESSION 4F
Italy and the West Before Rome

CHAIR: *Greg Warden*, Franklin College (Switzerland)

The Consumption of Greek Pottery in Western Europe: A New Theoretical Approach to Imported Goods
Justin St. P. Walsh, Chapman University

Beginning as early as 780 B.C.E., Greek vases were exported to the western end of the Mediterranean. By the sixth century, they had arrived in transalpine Europe. These pots were acquired both by Greeks in colonies and by non-Greeks from a variety of different cultures—Hallstatt, Iberian, Phoenician, Etruscan, and others. Each of these non-Greek groups had their own ceramic traditions, but they frequently chose to buy Greek vases in addition to (or even instead of) locally available ones. What explanation can be found to explain these decisions?

Relying on a database of almost 24,000 vases and fragments of vases found at 233 sites from Portugal to Switzerland and Germany, this paper examines some of the patterns of distribution for Greek pottery by using the geostatistical method known as kriging. In addition, it suggests a new basis for understanding those patterns as representing locally defined status competitions that occurred through the preferential acquisition of luxury goods. This theoretical approach is grounded in a discussion of consumption in a postcolonial sense, as defined by Michael Dietler (the transformation of objects' meanings as they move into new cultures), and in an economic sense. It also draws on sociological study of the acquisition of goods and the Darwinian concept of costly signaling.

Down the Drain: An Archaic Drainage System at Poggio Civitate (Murlo)
Cecelia A. Feldman, University of Massachusetts Amherst

A substantive terracotta pipeline, an exemplary instance of Etruscan water management and drainage technology, was uncovered in situ during the early excavations at Poggio Civitate (Murlo) yet was never published. While the Etruscans were often touted for their water-management technologies, there are relatively few published examples of Etruscan waterworks. In particular, the Etruscans were known for their ability to construct effective systems for drainage. Among the examples of such drainage technology are the systems of *cuniculi* (underground passages) that were used extensively in the region around Latium, primarily for controlling the course of rivers and streams and for directing runoff. Most famously, owing to the sophistication achieved in land drainage systems, the construction of the Cloaca Maxima (Great Drain) in Rome is often attributed to Etruscan influence. The preservation of the Poggio Civitate pipeline's original context provides a distinct opportunity to discuss Etruscan strategies for water management.

This paper presents the circumstances of the pipeline's discovery and excavation, which have been reconstructed through archival research in the excavation records. The paper then proposes a reconstruction of the pipeline's original archi-

tectural associations and topographical position. The pipeline is then considered in relation to contemporary water-management technologies and architectural developments, both locally and farther afield, in an attempt to situate this drainage system within its broader sociocultural and technological contexts. This pipeline and drainage system provide a clear example of Etruscan concern with water management and sophistication in creating technological solutions for such issues.

Constructing a Funerary Landscape: The Etruscan Chamber Tombs of San Giovenale
Fredrik Tobin, Uppsala University

The Etruscan site of San Giovenale in the interior of south Etruria is well known for its remains of ancient domestic architecture, but most of the several hundred chamber tombs at the site have long remained ignored. Through a study conducted by the Swedish Institute in Rome, the tombs are now being systematically mapped and documented for the first time. This paper presents the results of the last two years of fieldwork and discusses the ways in which the tombs can be used to investigate both local funerary customs and larger regional historical issues.

The chamber tombs at San Giovenale present a striking variety of types and styles, ranging from small, simple, single-chamber tombs to ornately carved multi-chamber tombs. In terms of decoration, they draw on aspects of the tomb-building traditions at both Caere and Tarquinia. San Giovenale is located in the region precisely between these two major Etruscan centers. It may have belonged to the sphere of influence of either city—cases have been made for each. Scholars have even used the few previously published tombs from San Giovenale to argue for an eventual passing of San Giovenale not only from the sphere of influence of Tarquinia to that of Caere but also from that of Caere to that of Tarquinia. This paper argues that assigning political dependency to the site based solely on the grounds of tomb architecture means that a range of other possible interpretations are being overlooked. If one argues that some of the tombs at San Giovenale were produced by traveling specialists, the choices made in the process of cutting the tombs become not so much straightforward reflections of political realities but instead much more flexible statements of identity. This allows the tombs to be situated in a more nuanced scholarly framework and a less rigid historical context.

Sanctuaries and Religious Sites in the Territory of the Aequi and Aequiculi
Elizabeth Colantoni, University of Rochester, and *Gabriele Colantoni*, University of Rochester

In this paper, we survey the evidence for the religious sites of the Italic people known as the Aequi and/or Aequiculi. We also propose models for interpreting this evidence and for guiding future research and archaeological endeavors directed at understanding the sanctuaries and religious places of the Aequi and Aequiculi.

The Aequi, inhabitants of central Italy, are most prominent in historical records as enemies of Rome: they threatened Roman territory in the fifth and fourth

centuries B.C.E. and were definitively defeated by the Romans in the late fourth century B.C.E. The variant name Aequiculi seems to refer to the same ethnic group and may indicate a reduced surviving population of the Aequi that withdrew into the Salto River valley after the Romans conquered most of the Aequi territory in the area of the Aniene River valley.

Archaeological evidence shows that in both the Aniene and Salto River valleys pre-Roman settlement was characterized by the existence of fortified hilltop communities. The larger settlement pattern consisted of a series of central places, each surrounded by smaller hilltop sites. Also present in the archaeological record are tombs and cemeteries, such as the large burial mound at Corvaro.

Archaeological evidence for religious activities prior to Roman domination of the area is less clear, and several focal points and means of identifying and interpreting religious sites have been suggested, including (1) a topographical relationship with nearby hilltop settlements; (2) the presence of terracing in polygonal masonry, which, in at least some instances, is clearly connected with sanctuaries; (3) signs of ancestor worship in association with burials; (4) evidence of continuity with Roman-period religious sites; and (5) written information, such as Latin inscriptions invoking local deities or the mention by ancient authors of specific religious sites in the territory of the Aequi and Aequiculi.

Perhaps because the amount of archaeological evidence available has until recently been limited, these suggestions for locating and understanding the religious sites of the Aequi and Aequiculi have not ever been pursued in a comprehensive and systematic manner. Archaeological fieldwork—both survey and excavation—has in the last quarter century increased considerably the body of data available, and the time is ripe to reexamine old ideas about the sanctuaries of the Aequi and Aequiculi and to develop new models that will help categorize and understand the relevant archaeological evidence, as we propose to do in this paper.

Central Apulian Funerary Practices and the Creation of Peucetian Identity Between the Fifth and Third Centuries B.C.E.

Bice Peruzzi, University of Cincinnati

The archaeology of Apulia has been an archaeology of tombs from its inception. Since the end of the 17th century, in fact, the spectacular Apulian red-figure vases (e.g., the Darius vase) from the necropoleis of Ruvo, Ceglie, and Canosa have dominated scholarly discussion; thus, most of traditional archaeological literature has been focused on iconographic and stylistic issues, while broader analyses of Apulian funerary customs are still rare.

This paper instead applies a context-based approach to the study of burial practices in Apulia, using as case studies grave assemblages from Peucetia (central Apulia) dated between the fifth and third centuries B.C.E. The material culture of the tombs provides insights into ancient behaviors surrounding death and permits a reconstruction of the more ephemeral aspects of the funerary rituals. The data indicate that in Peucetia, the most poignant moment in the burial was the ritual at the tomb; this is illustrated, for example, in tomb decoration, such as the frieze of mourning women in the Tomb of the Dancers in Ruvo. Moreover, it appears that Peucetians devoted particular care to the display of the assemblage inside

the tomb, with many artifacts hanging from iron nails along its sides, which could have been visible only during the brief period when the tomb was open. In contrast, no evidence of a grave marker or "cult of the dead" survives, and many burials were displaced even within a few years from the interment.

Peucetians have left no written records, and their settlements are scarcely excavated; thus, their tomb culture is our best evidence for their worldview. Funerals were a locus for the survivors to communicate the deceased's status, wealth, and adherence to prescribed social behaviors. Although the identity of the deceased could be manipulated during the funerary rituals for political or economic reasons, anthropological research has shown that extensive changes in burial practices usually correspond to periods of major social reorganization. Therefore, understanding how the Peucetians wanted to present themselves to their community at the moment of death should be the starting point of any future study on the organization of Peucetian society.

A Spatial Analysis of Cubicula at Ossaia, La Tufa

Tanya K. Henderson, MacEwan University

The first architectural phase of the villa at Ossaia, La Tufa, dates from the late second to the early first century B.C.E. Located in the southern Val di Chiana approximately 5 km outside the urban center of Cortona, the spatial patterning of the residential area reveals an atypical configuration of cubicula. Brickstamps document the original builders, "CAI CAI," and the transference of the property in the mid first century B.C.E. to an elite Etruscan family from Perugia, the Vibii Pansae. The Vibii Pansae, who received Roman citizenship in the period of the Social War, are representative of elite Etruscans who maintained their social position by sympathizing with Rome and adopting Roman cultural icons, such as domestic architecture.

A cursory examination of the plan does not reveal any incongruities with the standard Roman domus based on urban models. Closer inspection, however exposes a significant variation in spatial patterning—the inclusion of interior dead-end hallways, procoeton, which provide a side access to the cubicula. I argue that the internal organization of the residential area of the villa does not conform to the spatial patterning of contemporary urban Roman houses, which are suggested to be structured around the sociopolitical institution of the *salutatio* and publicize the wealth of the owner through the quality of the decorations. The absence of this sociopolitical institution in Etruscan society, based on literary evidence from Dionysius of Halicarnassus (9.5.4), implies that there was no functional purpose for adopting this tradition. Instead, I argue that the plan conforms to an Etruscan tendency, beginning in the late sixth century B.C.E.,to establish boundaries. The deliberate modification to the standard plan is evidence of the actualization of cultural change and resistance to the establishment of the Roman hegemony in Etruria in the first century B.C.E.

Take Them (Home?) With You: The Religious Life of Middle Republican Pocola Wares
Dan-el Padilla Peralta, Stanford University

This paper proposes a new interpretation of the pocola vases, a class of black-gloss ceramics manufactured in or near Rome sometime in the first half of the third century B.C.E. These wares were named after the epigraphic formula painted on almost every surviving exemplar: the noun "pocolom" paired with the name of a Roman deity in the genitive. Since many of these pocola were originally discovered in or are traceable to Etruscan funerary contexts, Coarelli and Morel speculated that these wares were "oggetti-ricordo" purchased after an Etruscan's visit to a shrine in Rome (F. Coarelli, *Roma medio repubblicana* [Rome 1977]). If such an interpretation were to be true, the implications for the study of Middle Republican religion and culture would be profound—and yet the pocola continue to receive only glancing mentions in standard histories of the period.

I argue that we can take the Coarelli-Morel line of analysis a (productive) step further by more fully reimagining the "social life" of these pocola, from the moment of their production at pottery workshops in and around Rome to their final deposition in Etruscan tombs. My paper's first step is to contextualize the findspots for securely provenanced pocola against what we know of road and commercial networks in late fourth- to mid third-century Latium and Etruria. Next, I show how the pocola's likely itineraries from Rome into and through Etruria illuminate the *histoire perdue* of the artifactual and human movements undergirding Republican-era cult. Traffic in religious goods—encompassing not only the small number of surviving pocola but the much more extensive body of terracotta votives extant from this period—continuously modulated and recalibrated Etruria's relationship with Rome as the former came under the political and military domination of the latter. And why were pocola in particular incorporated into this traffic? In the final third of my paper I demonstrate how pocola were made into peculiarly apt media for the repackaging of Middle Republican Rome's gods—divinities made into goods themselves for use and consumption outside of Rome.

Settlement Strategies and Territorial Organization: A Geoarchaeological Approach to the Sardinian Bronze Age Context
Francesca Cadeddu, Università di Udine

In this paper, we present a spatial analysis of GIS data on the settlement patterns of the Nuragic civilization. Adopting a multidisciplinary geoarchaeological perspective, this paper highlights new aspects of the settlement strategies and provides new data and an insights into the social, political, and economic organization of the Nuragic civilization.

The Nuragic civilization is a long-lasting culture that existed in Sardinia (Italy), from the Middle Bronze Age (ca. 1600 B.C.E.) to the first Iron Age (ca. 800 B.C.E.). During 800 years of development, the Nuragic civilization marked its landscape with monumental civil architectures (*nuraghi*). The data on the location of the *nuraghi* coupled with our approach based on geoarchaeology allow us to perform a test of the main hypothesis proposed by scholars concerning the social organization of the Nuragic society, the *sistema cantonale* (cantonal system).

The research uses earth observation (EO) methods, which allow us to evaluate and outline the relationship between archaeological data and landscape: with the analysis of remote sensing imagery of the examined areas, we show how and to what extent an integrated approach sheds new light on different facets of Nuragic Sardinia. We use the GIS platform to store and test the collected data and to analyze the archaeological data set with spatial analyses (i.e., viewshed analysis, Thiessen polygons). In addition, GIS software is useful for visualizing at once archaeological spatial patterns and the relationship between environment and human communities, to obtain a sample of cases to test the starting assumption. In this way, we develop a standardized research methodology that enables the use of noninvasive techniques for territorial research and the reconstruction of the landscape and its resources.

In conclusion, with the use of a multidisciplinary approach and the evaluation of the parameters gained with the reference work, we reconstruct for the Nuragic civilization a distinct hierarchical settlement strategy, confirming the existence of the hypothesized cantonal system. Its organization lies on the existence of territorial systems formed by interconnected communities that share some common traits in the economic and settlement strategy. All these factors allow us to reconstruct the presence of complex chiefdoms for the social and political Nuragic organization during the Bronze Age in Sardinia.

SESSION 4G: Colloquium
Where East Meets West: North American and East European Collaborative Research in the Carpathian Basin

ORGANIZERS: *Attila Gyucha*, Hungarian National Museum, and *William A. Parkinson*, Field Museum of Natural History

Colloquium Overview Statement

The past two decades have witnessed a remarkable increase in the number of international, collaborative, archaeological research programs in eastern Europe, many of which have been carried out by joint teams of North American and east European scholars. This colloquium brings together scholars from North America and eastern Europe to discuss the evolution of international, collaborative, prehistoric research in the Carpathian Basin.

The Carpathian basin in central Europe has been a host to several collaborative, prehistoric research projects because of its unique geographic position. Since the Neolithic period, the basin has been a critical zone of interaction between the Balkans, central Europe, northern Europe, and the Eurasian steppes. This session focuses on ongoing collaborative archaeological research in the region that deals with later prehistory, from the Neolithic to the Bronze Age.

Our main goal is to discuss how North American–eastern European collaborative projects in the study region have contributed to a better understanding of major archaeological and anthropological issues, including the spread of agriculture, the emergence of sedentism, village nucleation and dispersal, prehistoric exchange, and the emergence of hereditary inequality.

In addition to discussing the substantive contributions of these collaborative research projects to European prehistory, the participants also address many of the social, political, and logistical issues that face collaborative research projects in the region. By revisiting many of the topics that Bogucki addressed in *Case Studies in European Prehistory* (Boca Raton 1993), nearly 20 years ago, the participants discuss how they have successfully synthesized fundamentally different professional traditions, theoretical frameworks, and methodological approaches in creative, successful ways.

DISCUSSANT: *Peter Bogucki*, Princeton University

Introduction: Where East Meets West. North American and Eastern European Collaborative Research in the Carpathian Basin
Attila Gyucha, Hungarian National Museum, *William A. Parkinson*, Field Museum of Natural History, and *Richard W. Yerkes*, Ohio State University

In this introductory paper, we discuss the goals of the session and introduce the papers that follow. As indicated in the colloquium abstract, the past two decades have witnessed a remarkable increase in the number of international, collaborative archaeological research programs in eastern Europe, many of which have been carried out by joint teams of North American and eastern European scholars. Although not always perfect, many of these collaborative research projects have resulted in the melding of theoretical approaches of methodological techniques in innovative ways that have had a broader impact on the field of archaeology.

This topic was addressed by Bogucki in his publication *Case Studies in European Prehistory* (Boca Raton 1993). In that edited volume, Bogucki and his colleagues discussed the emergence of collaborative research relationships during the fall of the Iron Curtain and the opening of eastern Europe to collaboration with scholars from western Europe, Great Britain, and North America. In the 20 years that have passed since the publication of that volume, many collaborative research projects have been carried out in eastern Europe to varying degrees of success.

We focus specifically on joint prehistoric projects of North American and eastern European scientists that were carried out in the Carpathian basin in central Europe during the last 20 years. Because of its unique geographic position, this region has been a host to several collaborative research programs in the 1990s and 2000s. Since the Neolithic period, the Carpathian basin has been a critical zone of interaction between the Balkans, western Europe, northern Europe, and the Eurasian steppes. The projects that have been most successful, in our opinion, are those that were envisioned as regional-scale, long-term research programs that involved true side-by-side collaboration not only between directors but also between specialists and students.

The paper begins with an overview of the emergence of collaborative research projects in the later 20th century in eastern Europe. Next, we introduce several specific examples from the Carpathian basin. Finally, we highlight the theoretical and methodological innovations that have emerged from these projects and their broader impact on the discipline.

15 Years of Collaboration: The Körös Regional Archaeological Project
Richard W. Yerkes, Ohio State University, *Attila Gyucha*, Hungarian National Museum, and *William A. Parkinson*, Field Museum of Natural History

In this paper, we discuss 15 years of collaborative research in the Körös Region of the Great Hungarian Plain. The Körös Regional Archaeological Project (KRAP) is a multidisciplinary, collaborative research project directed by American and Hungarian archaeologists. The project brings together an international team of geophysicists, geologists, geographers, botanists, and other specialists to model the various social changes that occurred in the Körös River valley on the Great Hungarian Plain throughout prehistory.

Earlier phases of the KRAP focused on the transition from the Neolithic to the Copper Age, nearly 6,500 years ago. This period is marked by significant social transformations in the organization of households and settlements throughout the Great Hungarian Plain and beyond. Prior to our investigations, the anthropological understanding of these social changes were clouded by a lack of research into settlements dating to these periods.

Currently, our research focuses on settlement nucleation processes marked by the emergence of tells during the later Neolithic on the plain. Previous research has been limited almost exclusively to excavations of tell sites. Our research is revealing how tells were just one part of much larger microregional-scale settlement systems.

As a result of our research, the economic and political organization of Neolithic and Copper Age societies gradually is being revealed, allowing us to understand the nature of the changes that characterize these periods in the region. This, in turn, allows us to model the dynamic social processes that occur within "tribal" societies more generally.

During these 15 years of side-by-side, long-term collaboration, we have encountered many instances where our theoretical and methodological worlds collided. Because of the nature of our close collaboration—and especially because of our own close friendships—we have managed to convert most of these occasions into theoretical and methodological advances. In addition, the long duration of our project, combined with a substantial effort to train undergraduate and graduate students, has led to the development of many other independent projects that focus on other periods and other, complementary research questions. These projects employ identical research techniques that make our data directly comparable, permitting us to gain a more nuanced understanding of the prehistory of the region.

Bronze Age Complexity and Change in Eastern Hungary: Collaborative Approaches
Paul R. Duffy, University of Toronto, *Györgyi Parditka*, Hungarian National Museum, and *Attila Gyucha*, Hungarian National Museum

The Great Hungarian Plain during the Bronze Age is an important area for studying the conditions and processes involved in the emergence of social inequality. Many scholars believe that warrior aristocracies emerged here 4,000 years ago and that an elite class took control of craft production and the trade networks.

Arguments for social inequality are well supported from cemeteries, where the majority of metals and exotics are found interred with a minority of the burial population. Recent research in eastern Hungary by the collaborative Bronze Age Körös Off-Tell Archaeology (BAKOTA) project, however, suggests that despite a population increase and agricultural intensification, evidence for more social inequality is evasive. In this paper, we synthesize recent research from cemetery and settlement excavation in the heart of the Körös basin and compare these findings to neighboring areas. Combining Hungarian field survey, anthropological archaeology, and other analyses by Hungarian and North American specialists, our results demonstrate that there were several different paths to social complexity within the relatively homogenous expanse of the Great Hungarian Plain.

Neolithic Archaeology and Soilscapes: Collaboration, Knowledge Exchange, and Friendship in the Körös Area

Roderick B. Salisbury, Ludwig Boltzmann Institut, and *Gábor Bácsmegi*, Munkácsy Mihály Museum

Recent theoretical developments in North American and British archaeology include reflections on colonial traditions, hierarchical power relations, and the ownership of cultural heritage. Diffusion of power and assertions of cultural patrimony play out differently in different regions of the world: in Hungary, at least, professional collaborations often expand to become true and long-lasting partnerships. This paper presents some of the results—and some of the knowledge exchange—from the collaborative Hungarian-American NASKA project. The project was born while we were working together, first on the Körös Regional Archaeological Project and later on fieldwork for a Ph.D. dissertation. We discovered common methodological interests and shared questions about prehistory. The shared methodological interest is geoarchaeology, and the questions focus around intra- and intersite settlement patterns and human-environmental interactions. However, our intellectual backgrounds are quite different; the challenges and benefits resulting from these differences help explain the way our project, and our personal friendship, has developed. Initial results from our fieldwork is also presented: better understandings of the early phase of settlement nucleation during the middle to late Neolithic transition, the relationships between changing groundwater levels and human settlement choices, and human impacts on the environment during later prehistory in the Körös region.

Landscapes of Complexity: Bronze Age Landscapes in the Benta Valley (Central Hungary). Research on the Hinterland of Bronze Age Centers

Timothy Earle, Northwestern University, *Viktória Kiss*, Institute of Archaeology, Research Centre for the Humanities, Hungarian Academy of Sciences, *Gabriella Kulcsár*, Institute of Archaeology, Research Centre for the Humanities, Hungarian Academy of Sciences, and *Vajk Szeverényi*, Móra Ferenc Museum

The Benta Valley Project is part of the Százhalombatta Archaeological Expedition (SAX). Launched in 1997, the Hungarian-Swedish-American and, later, Hungarian-

Swedish-English collaborative research project focused on the excavation of the tell settlement at Százhalombatta-Földvár, one of the central sites in the central Danube Valley. While we were still working on the tell settlement, it was decided that to broaden our knowledge of the central settlement, it would be equally important to study the Bronze Age settlement patterns in surrounding environs. This would allow us to gain new insights into the period's social, economic, and political dimensions. The Benta Valley is the most important and best defined geographic unit associated with the Százhalombatta settlement. Parallel with the excavation of the central settlement, in 1998–1999 we began our settlement survey of the valley. Between 2003 and 2007, the second phase of work sought to determine the different site types and the nature of the occupation on off-tell sites. Preparations for the project's third phase were begun in 2012 with a grant from the Wenner-Gren Foundation. Our goal was to conduct a magnetometer survey on three different types of settlements, and based on these investigations we targeted areas for household excavation. We sought answers to the following questions: (1) Did differences exist between the regional and microregional settlement patterns during successive periods of the Bronze Age? (2) Were there genuine centers and specialized settlements during the Bronze Age in Central Europe? (3) How did a community's cultural background influence landscape use in a particular region? (4) How is social and political organization reflected in cemeteries? Our ultimate objective is to compare the layout of the settlements and to identify similarities and divergences between them. In our paper, we present the preliminary results of the last phase of the Benta Valley Project and the research experience gained during the years of this international collaborative research program.

SESSION 4H: Joint AIA/APA Colloquium
Economic Integration and Disintegration: New Approaches to Standards and Denominations in Ancient Greek Coinage

ORGANIZERS: *John A.N.Z. Tully*, The Boston Consulting Group, Inc., and *Lisa Pilar-Eberle*, University of California, Berkeley

Colloquium Overview Statement

This colloquium showcases new methodologies and materials for studying ancient Greek standards and denominations that have been developed over the past five years by the participants of the Eric P. Newman Summer Seminar at the American Numismatic Society in New York. It argues that these studies contain great heuristic potential for ancient economic and social history.

Standards and denominations are the bread and butter of contemporary numismatics. They provide, with iconography, the framework for the taxonomy of ancient coins. We propose that just as iconography has been harnessed to further historical understanding, so also standards and denominations can shed light on the social and economic dynamics inherent in the world of Greek cities. Studies of bankers and money changers and their role in mediating between different epichoric standards in Greek cities and the realization that at times Greek cities managed to maintain closed currency zones in their territories have been the beginning

of the exploration of this potential. In addition, innovative approaches in the study of hoard evidence have opened new doors for understanding the practical parameters of the use of ancient coins.

This colloquium develops these insights and approaches geographically, chronologically, and conceptually to explore the origins, effects, and mechanisms of socioeconomic integration in the world of Greek cities. The following questions are considered: Did coinage further economic integration? If yes, how was this accomplished? Whose and what power did the specific issues of coinages constitute? And what was the concrete shape and structure of the societal orders that they produced? Finally, given that integration implies disintegration, what were the differentiations, exclusions, and inequities that economic integration generated?

Cumulatively, the papers presented here demonstrate that standards and denominations form a unique source for understanding the differential patterns and mechanisms of socioeconomic integration in the Greek world. They allow us to trace not only integrated but integrating and disintegrating social and economic relations.

DISCUSSANTS: *Gary Reger*, Trinity College

Archaic Small Change and the Logic of Political Survival
Peter van Alfen, American Numismatic Society

In his seminal 1964 article, "Hoards, Small Change and the Origin of Coinage," (*JHS* 84 [1964] 76–91) Kraay argued that "few parts of the Greek world in the sixth and fifth centuries B.C. were equipped with a sufficient range and volume of low value coins to cater to the needs of daily retail trade. Where the denominations existed, they appear in quantity so small that they can have made little impression on the total currency." Nearly 50 years later, new finds have challenged that picture, making it certain that more archaic and classical authorities were in fact producing small change. Kim has outlined this new picture suggesting that small change was far more prevalent than Kraay had realized, and at an earlier date, thus contributing greatly to a deeper and more meaningful monetization of archaic economies across all strata of society.

In the first part of this paper, I reexamine the production of small change in the Archaic period, making use of a database of coinage far more comprehensive than those used by previous scholars. Based on these data, it is clear that, while the denominational structure of the largest proportion of the coin series produced before ca. 480 B.C.E. shows marked preference for small-value coins, nevertheless the output of these coins appears generally comparatively limited. At the same time, a significant proportion of the coin series still are skewed toward large-denomination coins, many of which were produced in very large numbers.

In the second part of this paper, I address this uneven distribution of small change from the perspective of political survival. I start with the question, Does "catering" to daily retail needs mean catering to a particular segment of society, and if so, why? As Sargeant and Velde demonstrate in *The Big Problem of Small Change* (Princeton 2002), producing full-bodied small coins is economically inefficient, a factor contributing to the widespread shortages of small change throughout the

Medieval and early modern periods. At the same time, shortages were often a cause of political and social unrest, as nonelites struggled to make do. I contend that in archaic poleis decisions about coin production, including denominational range, could become enmeshed in the various social and political struggles that developing poleis faced. For those in power, granting access to a larger (nonelite) segment of society to the transactional efficiencies of coinage via small change, no matter how costly its production, may have been a means of garnering support for the regime and thus aiding political survival.

Denominations and Economic Integration in Southern Anatolia and Beyond
Lisa Pilar-Eberle, University of California, Berkeley

In this paper, I argue that the use of denominations in Greek coinage was socially embedded and circumscribed, and I thus question the assumption that denominational systems implied the free convertibility of the different coins in the system. These insights allow me to explore the socially transformative effects inherent in the economic integration that Greek cities' minting decisions regarding denominations accomplished.

A study of denominational patterns in the hoard evidence from fourth-century B.C.E. southern Anatolia lies at the core of the paper. This study is methodologically innovative: it draws on recent analyses of regional patterns in hoard composition, such as that of Meadows for the Chian standard in fourth-century B.C.E. Asia Minor, and it argues that these patterns help us understand the differential use that was made of denominations.

In fourth-century B.C.E. Pamphylia and Cilicia, small coins began to be minted late; they were hoarded separately; and many places in mountainous areas that did not mint large coins did strike small ones. I draw two conclusions concerning fourth-century B.C.E. southern Anatolia from this evidence. First, small coins were an agent of economic integration between lowland and upland areas and thus of the creation of a region; and second, small coins were used for different purposes in different social contexts, thus breaking any denominational coherence of the civic coinages in the region.

I suggest that these conclusions gain added significance when analyzed against the background of ever-changing debt relations that pervaded ancient societies. The denominational rupture revealed by the hoard evidence indicates that in Pamphylia and Cilicia small coins were inserted into preexisting social relations that were constituted through debt. In the final part of the paper, I explore how the use of coinage changed the nature of these relations and gave rise to new ones. Outlining this transformation is a means toward pinpointing the specificity of the economic integration accomplished by coinage.

Reconsidering the Impact of the Ptolemaic Closed Monetary Zone Outside Egypt
Paul Keen, Valparaiso University

While the Ptolemaic monetary system is often held up as the standard closed monetary zone, little attention has been paid to the functioning and ramifications

of this system within the closed monetary zone itself. This paper seeks to shed additional light on the integration of the Ptolemaic kingdom outside Egypt by examining the production and circulation of Ptolemaic-weight coins in Cyprus and Syria-Phoenicia, with particular emphasis on the integration of these outside territories into the monetary trends best understood within Egypt itself. As is argued here, Cyprus and Syria-Phoenicia (during the third century) were fully integrated into an overarching monetary system and participated in monetary reforms with respect to both silver and bronze coinage throughout the dynasty. Nonetheless, the circulation patterns of coins produced at the non-Egyptian mints strongly suggest that the individual mints within the closed monetary zone played specific roles in contributing to the overall money supply. Whereas the Cypriot mints produced coinage as part of an overarching monetary system linked to Alexandria, patterns of hoard structure in third-century Syria-Phoenicia suggest a more localized pattern of circulation in accordance with the battles for Koile Syria during the Syrian Wars of the third century and in close connection with Ptolemaic military presence.

These production and circulation patterns cast important light on the nature of the closed monetary zone and the Ptolemaic state as a whole. As Manning has argued with regard to Egypt, the imposed use of Ptolemaic coinage may be read as "code" for the Ptolemaic state. Unlike the circulation of Ptolemaic weight coins in conjunction with troop movements in the Aegean and Crete, the use of the Ptolemaic-weight standard within Cyprus and Syria-Phoenicia served to integrate these particular territories into what must be considered the core of a greater Ptolemaic state. Furthermore, if the full integration into the Ptolemaic monetary economy suggested by parallel structures in bronze coinage is taken to suggest that the Ptolemies sought to replace the use of silver with bronze in a manner similar to that known in Egypt, the use of the Ptolemaic weight standard may well also be understood as a further sign of the depth of the Ptolemaic desire for, and ability to impose, uniform bureaucratic systems. These were established in even the non-Egyptian areas under their control in a fashion argued by Manning to be a key characteristic of the Ptolemaic state in Egypt.

The School of Alexandria? Rethinking the Closed Currency System Outside Egypt
Noah Kaye, Haifa University

The question of an ancient state's ability to exclude foreign currency from its territory, let alone its markets, is no small matter. Just how far we are willing to go in crediting an ancient state with these powers reveals our fundamental assumptions about the nature of its sovereignty. This paper urges a more precise deployment of the concept of closure by examining two special monetary zones of the eastern Mediterranean in the mid second century B.C.E.

The cistophoric zone of the enlarged Attalid kingdom has long been seen as a Ptolemaic-style closed currency system. Yet the numismatic record of Attalid Asia Minor scarcely resembles Ptolemaic Egypt's. To make the paradigm work, noncistophoric coins are labeled "export coinages," while mixed hoards are said to come from a "frontier zone." Moreover, the relationship of the bronze coinage of the kingdom to the cistophoric system is ignored. With scholarship just now beginning to move toward new interpretations of the cistophori (see M.C.

Marcellesi, *Pergame: De la fin du Ve au début du Ier siècle avant J.-C. Pratiques monétaires et histoire* [Pisa 2012]), the time is ripe to incorporate the data that contradicted the old model into a more dynamic account of money as a tool of state formation in the Attalid kingdom.

The Seleucid conquest of important Ptolemaic territories at the beginning of the second century did not usher in a major monetary reform. In fact, Ptolemaic silver persisted in circulation; new Ptolemaic silver continued to enter the region for decades; and eventually, the Seleucid kings themselves began minting coins on the Ptolemaic standard. While new finds have been brought into the discussion, no one has challenged the view of G. Le Rider (*BCH* 119 [1995] 391–404), who describes the province of Koile Syria as a closed monetary system shut off from the rest of the Seleucid kingdom. The lessons of the new Attalid monetary history are used to make sense of the numismatic record of a Seleucid province that was neither fully integrated nor sealed off.

The goal of this critique of the concept of a tightly controlled, closed currency system is to focus our attention on the salient contexts for the exclusion of certain coinages. I argue that these were customs checks not at the political borders of the kingdom or province but rather at the agora and the emporion of the city, where fiscal authorities demanded payment in specific currencies.

Standards as a Lens on Subregional Dynamics in the Hellenistic Cyclades
John A.N.Z. Tully, The Boston Consulting Group, Inc.

This study reassesses the evidence for Hellenistic Cycladic numismatic production. In keeping with scholarship on the Cyclades more generally, previous scholars have identified a unified Rhodian iconographic and metrical influence on production and circulation across the entire Cyclades. This paper argues that numismatic production was subregionally focused, and enables us to identify four hitherto unrecognized economic systems.

First, a brief review of the 21 states that minted bronze issues during this period confirms that their issues stylistically, iconographically, and epigraphically proclaim their independence and their own identity. They do not encode a relationship with any external party, either hegemonic or nonhegemonic, including Rhodes.

Second, it presents the positive evidence for the four subregional numismatic systems identifiable in the Hellenistic Cyclades, respectively involving Paros and Naxos, Tenos and Andros, Aegiale, and Keos. The numismatic networks centered on Paros and Naxos, and Tenos and Andros, which are better attested; both lasted for at least a century and involved, at least for a time, their own unique weight standard.

Finally, the paper explores the ramifications of this reconceptualization. First, the clear evidence for contemporaneous decay of the silver standard produced on Naxos and Paros both points to the strength of their subregional connection and provides an important data point allowing us chronological insight into the structural changes occurring in the Aegean at this time, which are associated with the rise of Rome. Second, the metrological consistency we here identify indicates that the islands did not arbitrarily choose the weight of production each time they minted. Instead, there was policy and continuity, here expressed through a desire

to maintain the same numismatic standard over successive issues. Third, the evidence for independent standards suggests that we can speak of attempts on the part of the states involved to profit both through the very fact of the overvaluation itself and possibly also by requiring the conversion of (some) other currencies, a policy long recognized for Ptolemaic production in Egypt and argued by Bresson recently for Rhodes.

Cumulatively, this paper demonstrates the existence of closed currency systems among states that could never be claimed to be among the first rank in the Hellenistic period. It thus raises the question, how far such epichoric standards may remain unrecognized elsewhere in the Greek world because of past scholarly focus on reading the evidence as compatible with the well-known "international" Hellenistic standards.

SESSION 4I: Colloquium
Variations on a Theme: Death in Late Bronze Age Greece

ORGANIZERS: *Joanne M.A. Murphy*, University of North Carolina at Greensboro, and *Kim Shelton*, University of California, Berkeley

Colloquium Overview Statement

Traditional studies have posited that Mycenaean states were extremely similar in political structure and sociopolitical practices. In contrast, more recent scholarship has stressed diversity between the Mycenaean states and has explored craft production, architecture, and Linear B evidence to illustrate these differences.

While diversity in tomb architecture has long been acknowledged, the burial practices themselves have been portrayed as being similar throughout the Late Bronze Age in Mycenaean Greece. As yet, this notion of widespread similarity in burial practices and their sociopolitical impact has not been examined in detail. Based on decades of scholarship on ritual and mortuary studies, these tombs have been afforded a powerful position in our interpretations of Mycenaean society. Scholars have argued that the tombs indicated class divisions in the society; that the tombs functioned as competitive arenas where social groups vied for access to resources, wealth, and status and/or affirmed/created their identities; and that the people in palaces and settlements used the tombs as symbols of elite power to dominate a landscape and to control the people in the surrounding areas. Preliminary results from the excavation of several new cemeteries and the restudy of older ones suggest that the pattern of burial may contain more differences than have been reconstructed in the past. These results indicate that we are in need of a detailed comparison of these burial practices combined with a synthetic comparative study on the tombs, the level of similarity and difference among them, and how their relationship with the associated settlements may have changed over time.

The goal of this session is to generate discussion on the potential variability in burial roles during the Late Bronze Age (LBA) by bringing together a group of scholars who are either excavating newly discovered tombs or are reexamining older excavations of LBA tombs. The colloquium participants will give very data-heavy presentations on their tomb material contextualized in the local society. Cat-

egories addressed include the dates when the tombs were used, the distribution of wealth and imports, objects types found in the tombs, evidence for rituals, and the relationship of the tombs to the local community. This session gives us the opportunity to bring together a diverse group of scholars working in microgeographical areas, to place their work in a broader, yet more detailed, context, and to better understand the changing sociopolitical roles of tombs and burial practices in LBA Greece.

DISCUSSANT: *John O'Shea*, University of Michigan

Late Bronze Age Tombs at the Palace of Nestor, Pylos

Sharon R. Stocker, University of Cincinnati, *Joanne M.A. Murphy*, University of North Carolina at Greensboro, *Jack L. Davis*, University of Cincinnati, and *Lynne A. Schepartz*, University of the Witwatersrand

The aim of this paper is to present a detailed summary of the results of our recent reexamination of the Late Bronze Age tombs excavated in the area of the Palace of Nestor at Pylos by Carl W. Blegen: three tholoi, seven chamber tombs, and one cist grave. New light can now be shed on the chronology of the construction and use of each.

The various tombs range in date from Middle Helladic (MH) III/Late Helladic (LH) I to LH IIIC late, although it appears that the tholos tombs and chamber tombs were not used intensively at the same time. Grave goods point to more wealth being invested in burials during MH III/LH I–II, less in LH IIIA. Most nonceramic imports in the tombs date to LH I–II.

In LH IIIA, at least three new chamber tombs and a cist grave were built. The dead in them were laid on the floor in extended or contracted positions. The presence of more drinking vessels in the tombs and dromoi point to a change from display and consumption of wealth to activities involving the living. In LH IIIB, the numbers of tombs decreased; they then increased slightly in LH IIIC. Analysis of the human bones verifies that the tombs contained fairly equal numbers of adult males and females but that infants and other subadults were poorly represented. We infer from this that higher status Pylians made important social distinctions based on age.

The object of our study has been to examine burial customs in the context of social and political developments at the Palace at Nestor itself. We argue that innovations in burial ritual reflect changes that occurred in the course of the Late Helladic period in the way that power was defined and expressed in the community associated with these graves.

The Mycenaean Cemetery of Deiras Revisited

Gilles Touchais, University Paris 1-Panthéon-Sorbonne, *Anna Philippa-Touchais*, École Francaise d'Athènes, and *Nikolas Papadimitriou*, Museum of Cycladic Art

The Mycenaean cemetery of Deiras, Argos, excavated in the beginning and the middle of the 20th century by W. Vollgraff and J. Deshayes, respectively, has

enjoyed little attention by scholars. This is partly because of its publication in French and mainly due to the rather modest character of its contents, which did not favor detailed quantitative analyses aimed at the identification of "wealth" and "status"distinctions among individuals. Based on the assumption that mortuary patterns ''mirror'' social structure, such analyses have been extensively used to analyze social complexity and to "explain" state-formation processes in mainland Greece.

Recent theoretical discussions have demonstrated the limitations of such "reflexive" approaches. Funerals are now seen as dynamic fields of social performance and interaction, where relations among community groups are constantly negotiated—sometimes being skewed rather than "revealed." To analyze their importance, one needs to examine them within their specific context—that is, in dialogue with what preexisted, not as explanatory tools for what followed.

Our work suggests that Deiras was initially established in LH IIB (or possibly IIA) as a special ("elite") burial ground; the earliest tombs (excavated by Vollgraff but never published in detail) were both the most impressive and the wealthiest of the cemetery. However, Deiras did not become the main cemetery of Argos until LH IIIA2; up to the earlier part of LH IIIA, it existed along with the old cemetery at the foot of Aspis. During that time, one can observe, apart from the proliferation of valuable offerings, a special concern with the entrance of the tombs (attested also in three large built graves constructed in the old cemetery in LH I–IIA), a gradual transfer of ritual activities from open areas to the restricted space of the dromos, and a radical transformation of the ceramic assemblage, most possibly associated with new ritual habits. These observations, combined with data from other sites, suggest that LH IIB/IIIA1 was a period of intense ritual change and social negotiation, during which a number of practices and symbolisms commonly identified as "Mycenaean" were introduced and gradually adopted by local groups. This raises the question whether we should look at this period, rather than the much more diverse LH I–IIA, for the rise of a common code of funerary behavior, which focused on ritual performances in the exclusive area of the dromos and emphasized material acquisitions as indices of social identity.

The Mycenaean Cemetery at Ayia Sotira, Nemea

R. Angus K. Smith, Brock University, *Mary K. Dabney*, Bryn Mawr College, and *James C. Wright*, Bryn Mawr College

From 2006 to 2008, the Canadian Institute in Greece sponsored the excavation of a Mycenaean chamber-tomb cemetery at Ayia Sotira near Koutsomodi in the Nemea Valley. The five modest tombs excavated by the project were undoubtedly associated with the nearby settlement of Tsoungiza and offer a picture of the mortuary practices associated with this settlement. The location of the cemetery was certainly no accident. The ground here contains bedrock soft enough to be excavated with available tools yet firm enough to hold its shape and topped with caliche. Tombs were built on a gently sloping hillside at roughly the same elevation as Tsoungiza, near a water source, and were visible from the settlement across an area of arable land. These factors combined to favor the location as one that

produced both a desirable connection to the community at Tsoungiza and a necessary separation of the living from the dead.

The architecture of the chamber tombs was unadorned and of a variety typical for Late Helladic (LH) III tombs in Corinthia and the Argolid. The 28 burials were a mixture of primary and secondary interments, adult males and females, and children. It is clear that they were reopened multiple times, and the associated pottery dates the various episodes of burial from LH IIIA2 to LH IIIB2. Other artifactual finds were limited but included numerous beads as well as a Psi-type figurine, an unidentified wooden object, and traces of a bronze object. While no faunal remains were found, botanical remains were found in every tomb, but in very small quantities.

The practices at Ayia Sotira describe both local funerary customs and more generally "Mycenaean" ones observable throughout mainland Greece and the Aegean. Explanations for the local character are found in the economic conditions of the nearby settlement, in the local geology, and presumably in local customs. We were able to document these through careful recovery of the stratigraphy and contents of the tombs, including paleobotanical, phytolith, organic-residue, and micromorphological analysis. The remarkable similarity of these tombs and their contents to those excavated at neighboring Zygouries confirm the local character of chamber-tomb inhumation. Yet comparison with other chamber-tomb cemeteries—notably nearby Aidonia, although there are also examples in the Corinthia, Argolid, and elsewhere—demonstrate the general features of a common "Mycenaean" practice. Overall, burial practices in the chamber tombs at Ayia Sotira fit our reconstruction of the inhabitants of Tsoungiza being incorporated into a social and political system dominated by the inhabitants of Mycenae during the LH IIIA2–B periods.

The Mycenaean Cemetery at Clauss, near Patras: The Rise and Fall of a Local Society Toward the End of an Era

Constantinos Paschalidis, National Archaeological Museum of Athens

The study of the Mycenaean cemetery at Clauss, near Patras is now complete and awaits final publication. This paper presents various significant aspects of the tombs and the activities there, resulting from the study and analysis of both artifacts and skeletal remains. In particular, the Clauss cemetery provides considerable skeletal remains that we were able to examine in detail. They show that both the site and Achaea were densely populated during the Mycenaean Palatial period (14th–13th centuries B.C.E.).

This conclusion contrasts greatly with what scholars have previously proposed: a massive infiltration of population from the Argolid in LH IIIC. Various finds dated to the Palatial times shed light on the poorly known modes of Mycenaean life far from the well-known palaces and contribute to the image of the whole region and its role during the years of the koine. Specific elements from Clauss, combined with relevant old and new finds from the rest of the Patras region, indicate the existence of a local economic and administrative center—of a palace—that once should have been standing there.

The study of the Clauss cemetery (the first so far completed in all Achaea) illustrates a smooth passing of the local society from the Palatial to the Postpalatial

period and the emergence of new social structures, such as the birth of the warriors' elite. The discussion of the Postpalatial local elites occupies much space in contemporary Mycenaean bibliography, and Achaea provides one of its best study cases. The Clauss cemetery revealed a sequence of three generations of such warriors, well preserved and documented during the excavations, who shed fresh light on the matter of their appearance and role.

Finally, the study of the Clauss material distinguished all LH IIIC burials in six successive chronological phases, which correspond more or less to six generations of its people. This was accomplished with the combined and careful classification of the local pottery, workshops, and styles, together with the tombs' stratigraphy. The evaluation of such a sequence gave the unique opportunity to trace the biographies of its people. Through the identification of mothers, children, farmers, craftsmen, traders, noble ladies of the *oikos*, hunters and warriors—based on the grave goods and modes of burials—a story unfolds of a vivid local society at the periphery of the Mycenaean world toward the end of its era.

Deathscapes Beyond: A Reexamination of the Old Excavations at the Mycenaean Cemeteries of Thebes
Anastasia Dakouri-Hild, University of Virginia, *Vassilis Aravantinos*, University of Rome, and *Yiannis Fappas*, Thebes Museum

In the early 20th century, Antonios Keramopoullos excavated two of the main chamber tomb cemeteries of Mycenaean Thebes, Ismenion and Kolonaki, as well as a few cist tombs near the Elektrai gates. A significant part of *Θηβαϊκά* (Athens 1917) is dedicated to presenting tomb layouts and associated finds from these excavations. While the volume remains an invaluable source of primary information, its limitations regarding the tombs (by contemporary standards) are the summative and descriptive style in which evidence is presented, the small range of photographs published, and the lack of contextual interpretation and discussion of overall chronological and social implications.

More recently, a study of published data from Late Bronze Age Boeotia included the Theban cemeteries (old and newer excavations), while a survey of cemeteries identified many tombs and elucidated the spatial and chronological development of cemeteries. The difficulties in upholding old excavation data to contemporary standards persisted, however. In the summer of 2011, we set out to reexamine the Ismenion, Kolonaki, and Elektrai material with these issues in mind and with the intent to update the record and more fully document finds. Notably, the 2011 campaign did not include material from subsequent excavations (post-1960s) in the Theban cemeteries.

In this paper, we present preliminary results of this study, combining descriptive and quantitative data from new fieldwork, Keramopoullos' own account of findspots and contextual clues, new photographs, and illustrations published in *Θηβαϊκά* . We juxtapose Keramopoullos' descriptive information on tomb location, observations from recent inspections of tomb sites, depicted or described architectural detail, and *Θηβαϊκά* tomb plans in order to evaluate and interpret artifacts as part of funerary assemblages and within their architectural and topographical context, as permitted by circumstances.

It will never be possible to fully recover the archaeological and spatial context of the finds, since diaries are not known to scholarship, artifacts cannot be precisely located within the footprint of tombs, information connecting finds with particular burials is very sparse, and osteoarchaeological information is unavailable. Nevertheless, our study establishes a more nuanced chronological use span for the tombs that is in line with current frameworks and terminology, and it offers a preliminary interpretation of finds in their architectural and topographical context. We also examine the funerary assemblages and architectural features of tombs to determine whether differences are due to the varying social status of different groups, as proclaimed performatively at death, or to other factors.

Late Bronze Age Mortuary Variability and Mycenaeanization in Central Greece: Insights from Mitrou

Nicholas P. Herrmann, Mississippi State University, Cobb Institute of Archaeology, *Kerill O'Neill*, Colby College, and *Salvatore Vitale*, Università della Calabria UNICAL

The 75 excavated graves from Mitrou represent one of the largest burial samples from a single site in East Lokris of which a substantial percentage dates to the Late Bronze Age. These mortuary contexts provide a diverse view of burial practices in central Greece during this period and afford the opportunity to compare and contrast significant aspects of the ritual relative to spatial, chronological, and demographic parameters. For the purpose of our paper, we focus on three lines of evidence: tomb architecture and distribution, burial offerings, and general skeletal biology. The impressive variability in tomb types, ranging from simple cobble cists to monumental constructions, provides an excellent platform for a discussion of their significance in the context of Mitrou Late Bronze Age society and the gradual creation of a Mycenaean identity at the site. A unique example is represented by Grave 73, which stands out for being the only built chamber tomb. Grave 73 yielded a wealth of finds, including high-quality ceramic vessels, boar's-tusk platelets, and precious and semiprecious ornaments in gold and bronze. Some of the fragile gold ornaments can only have been designed as grave goods, and it is possible that some may have been fashioned within the tomb. By contrast, the diverse picture provided by Late Bronze Age cist tombs at Mitrou offers an intriguing comparative sample to Grave 73 because of the more ordinary quality of the relevant offerings in the simple tombs. The common cist tombs contain the remains of various members of Mitrou's Late Bronze Age society, ranging in age from the young to the elderly. These burials provide critical information concerning the identity and life histories of the individuals buried at Mitrou. The skeletal remains from Grave 73 are limited, but they offer a basic view of the tomb's occupants, which mirror the common burial sample. By extending this comparative approach to spatial and bioarchaeological data from other sites in East Lokris, we attempt to place Mitrou within a regional framework, shedding new light on the variability of mortuary practices in the area and their potential significance for our comprehension of Mycenaeanization in central Greece during the Late Bronze Age.

Eleona and Langada Revisited: Burial Practices and Material Evidence from Two Mycenaean Cemeteries on Kos
Salvatore Vitale, Università della Calabria UNICAL

The cemeteries of Eleona and Langada on Kos, including 83 chamber tombs dating from Late Helladic (LH) IIB to LH IIIC (middle), were excavated by L. Morricone between 1935 and 1941. Since 2009, the relevant finds have been the subject of a detailed restudy carried out within the Serraglio, Eleona, and Langada Archaeological Project (SELAP), under the auspices of the Italian School of Archaeology at Athens. The combined examination of the stratigraphy and ceramics led to the identification of 46 chronologically sensitive assemblages, which include 14 closed and 32 homogeneous find groups and provide a solid chronological background for contextual analysis and interpretation.

This paper presents a varied set of data concerning burial practices and material evidence from Eleona and Langada and discusses their significance in the context of Koan Mycenaean society, as revealed by the related settlement of the "Serraglio." More specifically, diachronic changes in the distribution of the following elements are analyzed on a phase-by-phase basis: (1) the absolute number of tombs and the minimum number of deceased individuals; (2) the occurrence of specific architectural features, such as stone floors, walls, benches, and platforms; (3) the proportion of the different burial rites attested—that is inhumation vs. cremation; and (4) the variation in the quantity and quality of the objects accompanying the dead, such as pottery, adornments for clothes and body, weapons, and bronze tools.

Although interpretative caution is necessary—as funerary evidence may reflect, but does not necessarily mirror aspects of social reality—four interesting elements seem to emerge: (1) the uneven distribution of adornments and metal finds tentatively suggests a status distinction between the deceased individuals from Eleona and Langada, with the latter cemetery including the wealthier burials; (2) late LH IIIB and LH IIIC may have represented a period of expansion and growth as compared with previous phases; (3) the chronological variation in the amount of jewelery indicates that precious and semiprecious offerings were used as indicators of social status during LH IIIA1, LH IIIA2, and LH IIIC (middle) but not within LH IIIB and LH IIIC (early); and (4) reexamination of the human osteological remains demonstrates that cremation may have been more widespread than previously thought based on Morricone's original publication of the data, suggesting that Kos may have played a key role in the spread of this particular rite from western Anatolia to mainland Greece.

SESSION 5A
Network Connectivity in Old World Prehistory

CHAIR: *Carl Knappett*, University of Toronto

Monitoring Change in Regional Network Connectivity: A Bronze Age Transylvanian Case Study
Colin P. Quinn, University of Michigan

Network approaches are increasingly used to understand regional-scale social, economic, and political systems of the past. These approaches provide a means of quantifying social relationships, changes in landscape use, and reorganization of political entities. However, recent applications of network analysis to regional settlement structures often overlook two significant pitfalls that are inherent to any network approach. First, there are multiple measures that can be selected to characterize a social network, and they often produce very different results. Second, network analyses are extremely sensitive to sample sizes, and the sample size factor will often obscure the social patterning that is under investigation. This paper explores these potential pitfalls, and solutions to avoid them, using a case study from Bronze Age southwest Transylvania.

Southwest Transylvania is one of the most important sources of copper, gold, and tin throughout antiquity. During the Bronze Age, Transylvanian metal was mined, processed, and exported across Europe. This metal fueled the development of complex societies across the continent. However, the evolution of social organization of communities in this metal-procurement zone remains poorly understood. This paper presents preliminary results of the ongoing Bronze Age Transylvania Survey Project, including the digitization and analysis of 136 Bronze Age sites, the first network analysis of settlements in Romania.

This study monitors the development of settlement systems at the regional level across seven subphases of the Early, Middle, and Late Bronze Age from 2600 to 1200 B.C.E. Multiple measures of network centrality are explored, and it is argued that site degree best characterizes the social complexity of regional communities. Next, traditional diachronic analysis shows a gradual increase in the distribution of site degree throughout the Early and Middle Bronze Age, with a spike in the classical phase of the Wietenberg culture. It would normally be assumed that this spike is associated with the development of regional polities. However, an alternative means of quantification that treats each phase separately presents a different view. In the alternative model, all phases appear to be best characterized by small integrated communities with no evidence of complex regional polities. The disparity in the results of these analyses can best be attributed to the disparities in sample sizes. The distinctive diagnostic ceramics of the classical phase of the Wietenberg culture has likely lead to an overrepresentation of these sites and underrepresentation of other Bronze Age phases in the archaeological record that have less distinctive pottery.

Using Network Analysis to Examine Relative Resource Procurement Strategies in Anatolia and Southwest Asia from the Epipaleolithic to Chalcolithic Periods (14,000–5700 BP)
Zack Batist, McMaster University, and *Tristan Carter*, McMaster University

Over the past half century, studies involving obsidian sourcing have generated a considerable amount of data, which has been used to gain a better understanding of the extent of regional interaction in southwest Asia and Anatolia from the Epipaleolithic to Chalcolithic periods (14000–5700 BP). Predictive models based on cost-benefit analysis or on proximity from obsidian sources have been applied to rationalize resource-procurement strategies in this region; however, the expected outcome is not always reflected in the actual lithic assemblage data. The decisions involved in the use of certain distant resources likely reflect a particular construct of value and relate to the economic and cultural affinities pertinent to the inhabitants of the site. We quantitatively compared the proportions of obsidian sources evident at archaeological sites to construct networks representing relative economic and cultural choices in respect to obsidian-procurement strategies. We analyzed these networks in light of geographical and economic considerations and in relation to archaeological models that have previously been applied.

The data set used in this study is made up of lithic assemblage data pertaining to more than 400 sites spanning nine time periods within the Epipaleolithic to Chalcolithic range. Preliminary evaluation of the data shows how physical geography may have influenced resource-procurement strategies, and it enables the identification of sites that held unique obsidian assemblages. Each period has been examined independently; however, long-term transformations are observable when comparing each set of analyses through time.

The Transportation of Cattle by Sea and Its Implications for Early Island Colonization
Megan C. Anderson, Texas A&M University

The seaborne movement of people and their goods for the purpose of island settlement presents a unique opportunity for the understanding of maritime activity in the Mediterranean. This is particularly true of the Neolithic period, when the advent of agriculture engendered new demands on the Stone Age seafaring paradigm. Early occupation of islands such as Sardinia, Cyprus, and Crete during the spread of the Neolithic Revolution required the transportation of nonindigenous crops and animals required for efficacious settlement of a farming community. Recent research on Neolithic Crete suggests the transference of a minimum of five to 10 mature mating pairs of animals within this agricultural package. With a focus on animal husbandry and shipbuilding technology in the Neolithic period, this paper assesses the feasibility of cattle transport by sea.

Biological factors such as finishing weight, bull hierarchy, temperament, and breeding behavior heavily influenced not only the demographics of the cattle chosen for transport but also the mechanics of their shipping. Using faunal remains from Çatalhöyük and Knossos for comparisons of animal size, along with behavioral studies of modern cattle (T. Grandin, *Livestock Handling and Transport*

[Wallingford and Cambridge, Mass. 2007]), I suggest that weaned bull calves and heifers are best suited for transport. For early island-colonization movements, factors such as bull aggression and hierarchy favor a founding population with breeding ratios closer to 1:20; similar proportions are preferred by ancient and modern agriculturalists.

Once early settlers selected the appropriate cattle, how did they move them? Of the various types of vessels known by early seafarers (dugouts, skin boats, and rafts), reed rafts are the most suitable vehicles for cattle transport. While most early vessels could have carried heavy loads of inanimate goods such as metals, pottery, and other discrete weights, the stowage of cattle presents a very different conundrum. Modern behavioral studies have proven that transportation of any kind produces the same physiological responses in cattle as does branding; prolonged exposure to these stressors can result in high attrition rates. Stress-management choices such as freestanding tethers vs. total restraint each have consequences that may have recommended or eliminated them for use in Neolithic maritime bovine transport. Future efforts in experimental archaeology may help scholars understand the demands on vessel design these choices would yield.

Networking Early Greek Colonization
Lieve Donnellan, The University of Chicago

This paper analyzes the possibilities of a social network approach in one of the main fields of ancient Greek and Mediterranean archaeology. Early Greek colonization (without referring further to the ongoing debate on terminology, I hereby denote, with an old-fashioned and slightly inappropriate but widely used and recognized term, the phenomenon of long-distance travel, exchange, and settlement in the Mediterranean and Black Sea by individuals and small groups originating in the region that is today called Greece, a phenomenon that facilitated the connectivity of these regions to an Aegean network) has been for many decades studied in terms of ethnic prejudice based on subjective testimonies of later Greek and Roman writers. Convinced of Greek superiority, archaeologists have mainly devoted themselves to typological classifications of Greek colonial pottery, tombs, and funerary rites, ignoring anomalies such as the intrusion of indigenous slaves in Greek society. Indigenous agency in the reception of foreign objects and practices has been recognized more recently, but an all-encompassing method to study the archaeological record of these contact societies is still lacking.

Using Pithekoussai, a settlement in the Bay of Naples that is pivotal to our understanding of early Greek colonization, as a case study, I explore the enormous possibilities of social network analysis (SNA) for our understanding of social structures and exchange in contact societies. The analysis of the archaeological record of the paradigmatic Pithekoussan necropolis with special SNA software allows an unprecedented look into an early contact society, beyond the traditional ethnic Greek vs. indigenous divisions.

Representing the Pithekoussan data as a two-mode network, modern SNA questions, such as degree, clustering, or weak ties, help us understand some of the structures of Pithekoussan society and offer methodological perspectives for the future study of similar contexts.

Empty Spaces: Settlement and Social Trajectories of the Neolithic Peloponnese
William Patrick Ridge, University of Illinois at Chicago

In this paper, I discuss the long-term settlement trajectory and changing social dynamics that took place throughout the Neolithic (ca. 6500–3200 B.C.E.) in southern Greece, focusing primarily on the Peloponnese. Unlike the northern plains in Thessaly—which are characterized by a relatively dense pattern of long-lasting tell settlements throughout the entire Neolithic—most of southern Greece was sparsely populated, characterized by smaller, short-lived settlements. This has caused much of the scholarly attention on the Greek Neolithic to be placed on the north, and the Neolithic of the south has been largely ignored. This is opposed to the Bronze Age, where the focus shifts to the south with the emergence of phenomena such as monumental architecture, centralized administration, and extensive exchange. But to understand the socioeconomic situation that arises in the Early Bronze Age, it is necessary to examine the social trajectory of the preceding periods, particularly the long and unclear Final Neolithic period (ca. 4500–3200 B.C.E.), in which many of the hallmarks of the Bronze Age society first appear.

Drawing heavily from the many intensive regional survey projects that have been completed over the last 30 years, together with other regional studies and selected excavations, I reconstruct patterns (number, size, location, continuity) of settlement nucleation and dispersal, as well as different spheres of interaction in the Peloponnese during the Neolithic. I then compare these with the settlement data of the intensively studied eastern Thessalian Plain to better understand the divergent pattern of southern Greece and to contextualize it in the larger macroregion of the Greek peninsula. By examining southern Greece at different temporal and geographic scales, and by using a comparative approach, I am able to better examine the gradual social and demographic developments that occurred throughout the Neolithic and better understand the transition from small egalitarian communities to centralized regional societies that takes place during the later Neolithic/Early Bronze Age.

SESSION 5B
Reports from the Field: Greece and Cyprus

CHAIR: *Nicholas P. Herrmann*, Mississippi State University

The Kastro Kallithea Archaeological Project: Results of the 2007–2013 Seasons
Margriet J. Haagsma, University of Alberta, *Tracene Harvey*, University of Saskatchewan, *Sophia Karapanou*, 15th Ephorate of Prehistoric and Classical Antiquities, Larissa, and *Laura Surtees*, University of Pennsylvania

The so-called Kastro of Kallithea is an urban center dating to the Late Classical and Hellenistic periods in Thessaly, Greece. The 15th Ephorate of Prehistoric and Classical Antiquities at Larissa and the University of Alberta have worked together at this site since 2004. The project's main goals are to establish a regional archaeological context for the social and economic transformations in Thessaly in

the Hellenistic period, which we study from an urban and domestic perspective. The past few years have seen the conclusion of the archaeological and architectural urban survey and excavations at the city's agora and housing area, which have provided important information on the city's occupation span and role in regional economies.

The main focus of our paper is the results of the excavation of Building 10. Located on the eastern slopes of the site, Building 10 is a large structure with a surface area measuring approximately 300 m² (20 x 15 m). Based on the initial analysis of the architecture, the architectural configuration, and excavation data, the building, constructed in the late third or early second century B.C.E., is presumed to have had a domestic function. It underwent at least one major renovation before it was abandoned toward the end of the second century B.C.E. During the excavations, we paid particular attention to the precise locations of all finds. Our goal is to use the data for a detailed analysis of the spatial distribution of artifacts, from which we will derive as much information as possible regarding the organization of domestic activities and the economic base of the household.

Building 10 features a plan common to Greek houses: a central open space surrounded by at least 10 rooms on the ground floor. Yet it displays some unusual features as well, such as an impluvium in the courtyard, a narrow entrance off the street, an abundance of evidence for domestic ritual, and a food-storage capacity that exceeds that of most other houses in urban settings dating to this period. It thus has much to add to our understanding of housing developments of the Hellenistic period in Greece.

Molyvoti, Thrace Archaeological Project
Nathan Arrington, Princeton University

The Molyvoti, Thrace Archaeological Project began in 2013. The five-year expedition is a collaboration between the 19th Ephorate of Prehistoric and Classical Antiquities (Komotini) and the American School of Classical Studies at Athens, represented by Princeton University. The project aims to investigate the identity, form, and chronology of the city on the Molyvoti Peninsula inconclusively designated as ancient Stryme; to understand its various roles in regional communication and exchange networks; and to assess its evolving relationship with the landscape and local populations. It seeks to explore the formation and evolution of a trading post in its changing economic and cultural contexts, taking into consideration regional dynamics and constraints as well as individual agency. To achieve these goals, the project combines geomorphological studies, geophysical survey, surface survey, and targeted excavation, with the close involvement of specialists studying faunal and botanic remains.

In the first season, 2.6 ha of resistivity mapping and differential magnetometry provided new data on the city's grid plan. Core samples and satellite photographs were obtained, which, together with underwater SONAR, are being analyzed to determine the location of the harbors and the changing contours of the coastline. Excavation continued in four 5 x 5 m squares dug by the Ephorate in the 1990s, and excavation began in six new squares. This work confirmed geophysical results while providing new information on the form, chronology, and (re)use of

the city. Fourth century B.C.E. and later phases of a crossroad and a house were explored, with evidence for abandonment that calls into question the traditional view that the site was destroyed by the Maronitans with the help of Philip. The large number of coin and amphora finds illuminated trading networks and underlined the consistent *emporion* nature of the site, even in the Hellenistic period. A significant quantity of Late Roman material and associated structures were uncovered throughout the excavation, revealing a previously unidentified period of occupation. Finally, preliminary study of faunal remains from a wide variety of land and marine animals demonstrated some of the ways in which people at the site engaged with marine and wetland environments.

Excavation of the Northwest Building at Azoria, Eastern Crete

Margaret S. Mook, Iowa State University, and *Donald C. Haggis*, University of North Carolina at Chapel Hill

Renewed excavations at the site of Azoria, in eastern Crete, were conducted during the summer of 2013 by the University of North Carolina at Chapel Hill, under the auspices of the American School of Classical Studies at Athens, by permission of the Greek Ministry of Culture and the 24th Ephorate of Prehistoric and Classical Antiquities. Among other work conducted in 2013, we continued the excavation of the Northwest Building and can now demonstrate that it consists of six interconnected rooms. The paper discusses the excavation and presents the phasing and possible interpretations of this substantial and well-preserved building.

In 2006, we excavated two rooms of the Northwest Building—a hall and storeroom (*Hesperia* 80 [2011] 445–450). Following the two doorways in this hall, excavation to the north exposed a single large room containing a cluster of spindlewhorls, a marble perirrhanterion, and, among other vessels, cups and a large column krater, apparently a second hall. To the south, we recovered three interconnecting rooms built along the same terrace: (1) a narrow room or vestibule with a complete fenestrated terracotta krater stand; (2) a kitchen with a curbed hearth in the center of the room, stone implements, a miniature bronze shield boss, a fragmentary fenestrated terracotta krater stand, and some 16 stone pot stands; and (3) a storeroom with numerous finds, including fine wares, several pithoi found fallen and broken across the floor, unusual ceramic vessels, perhaps for special or industrial functions, a quern and grinder, and a lead ingot.

The Northwest Building generally conforms to the criteria established for houses on the site but exhibits some differences in organization and elaboration: it has two large adjoining halls, two storerooms, an internal vestibule or hallway, and an exceptionally large kitchen, accommodating significant storage. These architectural differences, with multiple halls and considerable storage and food-processing capacities, and some specialized artifacts, find parallels in the civic buildings and their service complexes to the south (*Hesperia* 80 [2011] 1–70). The Northwest Building challenges our usual conceptualization of domestic and civic spaces, blurring the boundaries of these categories. This paper explores the functions and possible interpretations of the Northwest Building in relation to the household and the role of larger kinship corporate groups within an archaic urban context.

Athienou Archaeological Project, 2013: Investigations at Athienou-Malloura, Cyprus

Michael K. Toumazou, Davidson College, *Derek B. Counts*, University of Wisconsin–Milwaukee, *P. Nick Kardulias*, College of Wooster, *Erin W. Averett*, Creighton University, *Clay M. Cofer*, Bryn Mawr College, and *Jody M. Gordon*, Wentworth Institute of Technology

This paper presents the results of the 2013 excavation season at Athienou-Malloura by the Athienou Archaeological Project, sponsored by Davidson College and funded in part by the National Science Foundation (NSF-REU, Award SMA 1156968). The Late Geometric to Roman rural sanctuary remained the focus of our work. Investigations sought to clarify: (1) architecture and stratigraphy in the northwestern quadrant of the sanctuary, including the Hellenistic- to Roman-phase peribolos, and (2) the stratigraphy and chronology of the pisé altar (discovered in 2007) in the central part of the sanctuary.

Excavations in the northwest section of the sanctuary significantly added to our knowledge of the architectural plan and orientation of the Hellenistic to Roman temenos. In addition to refining our knowledge of the earlier, substantial ashlar platform underlying the Hellenistic to Roman peribolos, a large stone to the west, partially exposed in 2011, was revealed to be part of a reused ashlar block, which served as a wall end along the northern peribolos and at its basal level sat adjacent to a threshold stone. A use surface was reached on the exterior of the wall approximately at the level of the threshold; here, pottery and charcoal deposits were discovered, as well as an upright limestone "standing stone" marking the entrance to the sanctuary.

Despite looters' pits that cut directly into the altar, excavations have now revealed its likely limits, as well as the materials and technique used in its construction. A controlled sondage in the northwestern section of the altar completed this season shows that the altar's base sits directly on the Hellenistic- to Roman-phase floor above the hardpack fill; the altar thus represents a new feature installed at the time of the Hellenistic I reorganization ca. 300 B.C.E. It is hoped that ^{14}C samples collected from successive altar layers will help clarify the use phases of this feature.

Finds from excavations include an impressive array of limestone and terracotta sculptures, including types previously unknown at the site. A fragment from a limestone quadriga is the second example of this unusual type found in the sanctuary in two years. In addition, several smaller finds, including a faience cosmetic jar and glass animal bead, provide important examples of exquisite, minor arts deposited in the sanctuary. The northwest area continues to provide important material from the later phase of the sanctuary, including a moldmade terracotta lamp with Aphrodite and a lamp with the signature of "EYTYXHTOC," a Late Antique Athenian potter.

The 2013 Season of the Lycoming College Expedition to Idalion, Cyprus

Pamela Gaber, Lycoming College

The Lycoming College Expedition to Idalion, Cyprus, was in the field from 24 June to 9 August 2013. Work concentrated in the City Sanctuary below the west

acropolis administrative center. Last year, the founding levels were reached on bedrock. Here again we found the very end of the Late Cypriote III period and the beginning of the Protogeometric period, ca. 1200 B.C.E. This is by far the earliest material yet found in this area, although we know there were industrial installations on the west acropolis, Ambelleri, and in the lower city dating back to at least the 12th century B.C.E. This very early place of worship may have been in use not long after those pottery works began. Some of the most interesting finds of last season were discovered beneath the now-famous standing stones reported in previous seasons.

These stones appear to have been revered from the fifth century B.C.E. continually through to the Roman period, perhaps to the first century C.E. This year's dig revealed that they were set up atop a platform on which two wooden pillars stood. These seem to have been burnt completely ca. 450 B.C.E., the same time the Phoenicians destroyed—and later rebuilt—the administrative complex just south of the temple. It is possible that these objects of worship were burnt as part of the conquest: to establish the new rule of the people from Kition over the Cypriotes of Idalion.

This year's investigations confirmed two aspects of this sanctuary. Among the scores of inscriptions there is not a single one in Greek script. Every one is in Cypro-syllabic.

Second, nothing else in the city was destroyed during the 450 B.C.E. conquest; only the two tree trunks. After the destruction of the sacred poles an amphora was laid carefully over the charcoal remaining. A thick bricky floor was laid over the area, and a pair of standing stones was placed in an ash pit, to commemorate the original wooden pillars like those in the Bible and like the xoanon described in the original Heraion on Samos.

Nearby was a baetyl in a pit. When we cut away the marl plaster covering the standing stone we saw that the diabase baetyl was set in a platform made of river rocks set in pisé dating to around the ninth century B.C.E. The use surfaces around the installation continued through the Hellenistic period.

SESSION 5C
Pompeii: Domestic Space

CHAIR: *Elaine Gazda*, University of Michigan

Even Better than the Real Thing: Preferring Painting to Marble in Pompeian Domestic Wall Decoration
Suzanne van de Liefvoort, Radboud University Nijmegen

This paper challenges the persistent idea in scholarship that real marble was better appreciated as a means of domestic wall decoration than painted marble imitation. In traditional discourse on Roman domestic decoration, marble is seen as the authentic luxury product available only to wealthy Romans. Painted marble, in contrast, is interpreted as the cheap and less distinguished solution for house owners who could afford only an imitation of "the real thing." This

line of reasoning has two origins. First, scholars who study Roman art have been influenced by the modern aesthetic paradigm of authenticity in which authenticity equals value and, as a result, imitation does not. Second, existing studies in the field of Roman art from Pompeii and its surroundings rely heavily on the idea that the elite set the tone for fashionable decoration, which was then imitated by households from lower social classes. Thus, the current *communis opinio* concludes that the Roman elite possessed authentic decoration, while the rest of society was forced to live with imitations (i.e., with painted instead of real marble). Using a small sample of houses in Pompeii, this paper argues that the reality was much more complicated.

I present examples from three Pompeian houses, all owned by prosperous citizens, in which real and painted marble in the decoration of walls coincide: the House of Sallust (VI.2.4), the House of Apollo (VI.7.23), and the House of the Colored Capitals (VII.4.31). In these houses, both the juxtaposition and the respective locations of the wall decorations show the relative equality between the appreciation of real and painted marble. Closer analysis of these locations even suggests a preference for painted marble in particular contexts. I propose that the reason for the high esteem of these painted panels is found both in the opportunities offered by painting as a decorative medium to adjust the design to suit its surroundings and in its capability to emulate natural resources. This suggests that Pompeian house owners deliberately chose painted marble panels over their real counterparts in the wall decorations of their homes.

A Reflection of Religion: A Reevaluation of Nymphaea and Lararia in Pompeian Households
Alexandra Creola, Cornell University

Nymphaea are decorated fountains and have often been dismissed as little more than status markers. While there is no denying that nymphaea would have provided venues for the display of homeowners' wealth and status, the religious implications of these structures deserve attention as well. Accordingly, my work employs spatial analysis to investigate nymphaea as features of domestic cult.

In Roman domestic nymphaea, the temple facade of the structures, the statuary of the gods, and the ornate decoration link nymphaea stylistically to other shrines of the home. The earliest examples of nymphaea come from the reign of Augustus in the first half of the first century C.E., when the competitive display of *pietas* reached an apex, and they appear to have been in use until the destruction of the city in 79 C.E. If nymphaea indeed possess religious significance, then they may serve as conspicuous displays not only of the homeowner's wealth but also of the homeowner's piety.

To address the question of whether nymphaea function as features of domestic cult, I have conducted a spatial analysis of Roman nymphaea in comparison with lararia, or Roman house shrines, preserved in Pompeii. During the summer of 2013, I acquired a permit from the Archaeological Superintendent of Pompeii and was able to gain access to 30 Pompeian houses. By comparing spatial similarities in the placements of both nymphaea and lararia in Pompeian houses, I am able to conclude that nymphaea often occupy spaces that are usually home to domestic

shrines. The interchangeability between the placement of nymphaea and that of other house shrines combined with a more detailed reading of the decoration on nymphaea suggests that these water features are more than simple ornamentations in wealthy Roman homes; nymphaea appear to act as features of domestic cult.

Emulation, Competition, and Association in Pompeii: A Survey of Peristyle Decoration
Summer Trentin, University of Iowa

It has long been held that Pompeians sought to compete with and emulate their neighbors through increasingly elaborate decorative schemes and amenities in their houses. Much of the decorative splendor of a Pompeian residence was centered on the peristyle garden, a feature itself often thought to have been a form of villa imitation. As they increased in popularity, domestic gardens, typically visible from the entrance to a house and embellished with painting, greenery, fountains, and sculpture, became an important means of social communication. Their high visibility, suitability as areas of display, and connotations of luxury recommend them as case studies in Pompeian emulation.

In this paper, I examine over 200 peristyles in the city of Pompeii to determine what their decoration reveals about emulation and competition among the city's homeowners. Mapping the decoration and architectural types of these peristyles reveals that the popularity of certain decorative elements, such as painting style or column order, seems to have been concentrated in small pockets of the city, suggesting that these aesthetic choices were the result of emulation or competition among neighbors. The decoration, size, and even presence of a peristyle appear to have been determined in part by the location of a house within the city. In some cases, neighbors seem to have capitalized on the associative value of a particular style identified with a specific area of the city. I argue that the neighborhood styles and "peristyle districts" reflect an interest in competing with one's neighbors.

My findings suggest both that emulation of immediate neighbors was a factor in a Pompeian homeowner's choice of decoration and that domestic gardens were an important vehicle through which this emulation was expressed. This paper sheds new light on competition and emulation in Pompeian houses and the means by which homeowners used decoration to reflect their aspirations.

Competitive Discourse in a Pompeian Garden
Sarah E. Beckmann, University of Pennsylvania

Pompeian housing is frequently studied as the product of competitive discourse, but these discussions seldom engage the architectural spaces outside the walls of the domus. I seek to broaden our understanding of the competitive apparatus with an analysis of ancient gardens. I present a reanalysis of the so-called House of Octavius Quartio at II.2.2, where two-thirds of the property was devoted to gardens, with plane trees, a sunken grotto, and two euripi. Excavations suggest a terminus post quem of 62 C.E. for these renovations. The house has been

criticized by modern scholars for its eclectic appropriation of space, systematically interpreted as mimicry of Roman villa architecture. Such criticisms fail to situate the house in its local context—that is, in Regio II of Pompeii, a veritable garden district in the first century C.E. The planted spaces of this region have been excavated and documented but have never been placed in dialogue.

An examination of II.2.2 at the neighborhood level suggests that its gardens are the product of a highly competitive local environment. The garden is defined as a manipulated and maintained landscape of plants and/or trees, which may also include water features, decor, and architectural structures. The gardens of II.2.2 are analyzed along with the planted landscapes of Regio II, which include house gardens, commercial plots and market gardens, and the public parks of the palaestra and amphitheater. Examined in context, it is clear that gardens intentionally refer and respond to other local planted spaces.

The formal arrangement of plane trees in the rear plot of II.2.2 mimics the organization of a vineyard, yet plane trees are purely ornamental and have little function beyond the provision of shade. The only other plane trees documented in the area are those of the palaestra, located directly opposite II.2.2, highlighting the contrast between the comforts of the communal gardens and the luxury of a private garden park. I conclude with a comparison of the gardens of II.2.2 and the Praedia of Julia Felix at II.4, two properties in Pompeii in which euripi have been securely documented. The evidence assembled is used to assert in conclusion the important and highly visible role of gardens in the social apparatus of Pompeian elites. At II.2.2, emulation and evocation create a unique sensory experience, one sustained and reinforced by the surrounding environments.

SESSION 5D
Mapping the Roman World

CHAIR: *James Newhard*, College of Charleston

Farm or Fiction: Identifying the Function of Roman Sites in Survey Archaeology
Scott Gallimore, Wilfrid Laurier University

This paper aims to explore methodological tools for assessing the function of the myriad small rural settlements identified by survey archaeologists. Traditional labels for rural sites, such as farms or farmsteads, are now considered to be too limiting based on the range of activities that could have occurred. Whitelaw, during the Keos Survey, was among the first to address this problem by developing a ceramic use typology. He argued that the types of pottery found at different sites could point to distinct functions. This method has since been adopted and modified by Foxhall and Winther-Jacobson for other projects in Greece. Pettegrew has also argued that more attention should be paid to formation process when investigating these settlements. These analyses provide important contributions to our understanding of site function, although they tend to focus on Classical- and Hellenistic-period settlements. Data from other periods, including Roman sites, can also be insightful. The paper begins with a brief overview of the problems associated with assessing

site function, including discussion of the site of Pyrgouthi in the Berbati Valley of the Peloponnese, Greece, which has data sets from survey and excavation, both of which suggest different chronologies and functions. It then turns to a case study based on research carried out during the Galatas Survey Project in central Crete from 2005 to 2009. An attempt to assign functions to Roman sites identified during this survey employs a more holistic approach, relying not only on ceramic types but also on other types of material finds, the location of sites in the landscape, their size, their relation to other settlements (including those outside the survey zone), evidence for any preserved features, and even modern use of the landscape. This approach enables numerous activities to be assigned to the different settlements, including several not typically associated with rural farmsteads.

Using Google Earth to Visualize an Ancient City's Influence: Roman Antioch
Kristina Neumann, University of Cincinnati

Understanding how the relationship between a city and its region changed with incorporation into the Roman empire is a topic of rising importance within post-colonial scholarship, yet discussion on communities in the east has been greatly limited by the quality of the available textual and archaeological data. This paper proposes an alternative approach to traditional methodology through an examination of the Roman annexation of Antioch-on-the-Orontes, an understudied city and the provincial capital in northern Syria. Instead of reattempting a synthesis of disparate historical data for Antioch or defaulting to a regional narrative of Syria, I have mapped the distribution of archaeological material related to the city through time and space with Google Earth to indicate changes in its political, economic, and social relationships during the first three centuries of Roman control.

The materials used in this study are limited to coins minted at Antioch and found through excavation and in hoards across the Mediterranean, as well as all local and foreign coins recovered from Antioch itself dating from Antiochus III to late antiquity. This material is charted in Google Earth according to geographical location (origin and findspot), period, material, quantity, and type of coin. The maps can be manipulated by each of these criteria, thereby revealing otherwise hidden patterns in artifact distribution. These data are then studied in more detail as compared with the entirety of the coin assemblage from individual sites and whole regions, with proper consideration for the vagaries of survival and historical context. Drawing on the principle that coins did not circulate where the authority guaranteeing their value was not accepted, this paper focuses on the distribution of coins as proxy for ancient interaction. Previous scholars have undertaken similar projects, but none has applied the technology proposed here.

This research tool reveals an overall contraction of Antioch's political authority with its incorporation into the Roman empire but a continued and evolving influence in selected regions and cities of the east. The political disturbances of the third century C.E. once again altered the scope of Antioch's authority, eventually accomplishing a greater integration of the city into the empire. Although every city is subject to its own unique circumstances, this case study demonstrates the potential of this method for better understanding intergovernmental relationships in the ancient world.

Mapping Ethnicity and Community in Imperial-era Roman Cemeteries

Sarah E. Bond, Marquette University, and *Kristina Killgrove*, University of West Florida

Immigration is a particularly resonant issue in the modern world, but the Roman literary and epigraphic records attest to its antiquity. In the only comprehensive work on the subject of foreigners in the city of Rome, Noy drew on the literary and epigraphic data to elucidate the mélange of ethnicities and self-identities among the almost 1,000,000 people living in Rome during the Imperial period. However, the mapping of bioarchaeological data from cemeteries outside the city provides a crucial third data source with which to understand this often-invisible population.

The paper explores spatially contextualized bioarchaeological data from two Imperial-era cemeteries in Rome that lack historical and epigraphic information. It addresses questions about community, ethnic identity, and the burial of the poor. The cemeteries of Casal Bertone and Castellaccio Europarco date to the first to third centuries C.E. Isotope analyses (Sr and O) were previously performed on first molars from both assemblages, indicating that roughly one-third of the individuals were born somewhere other than Rome. Our hypothesis that foreigners' graves would spatially cluster in the cemeteries was upheld using cluster and outlier analysis in ArcGIS 10.1. This new visualization of spatial patterns in the isotope data reveals possible burial groups, and our paper concludes with a discussion of the meaning of these groups, informed by historical records, archaeological context, and geological and climatological data.

The boundaries of ethnicity and community were permeable both inside and outside the walls of Rome. The data presented here further support the characterization of Rome as open to a number of ethnic populations and suggest that foreigners at Rome may have related to each other on the basis of being non-Roman. Moreover, it confirms that burial remained an important part of identity even among the poor. While the evidence from Casal Bertone and Castellaccio cannot provide definitive demographic data for the foreign population of the city, it demonstrates the potential for use of spatially contextualized bioarchaeological data to enhance the historical picture of Rome.

By combining Roman historiography, archaeology, GIS mapping, and chemical analysis of ancient human remains, we aim to show with this paper that truly interdisciplinary research into the Roman past can yield new and revelatory information previously assumed to be lost to history.

A Comparison of Access Analysis and Graffiti Concentrations in Pompeian Houses

Jacqueline F. DiBiasie, The University of Texas at Austin

This paper investigates the applicability of access analysis for understanding graffiti concentrations within the domestic spaces of Pompeii. Building on the work of Benefiel 2010 and 2011, I focus on the context of graffiti in the domestic spaces of Pompeii. However, unlike previous work, this study uses a spatial configuration theory—access analysis—to analyze the location of graffiti throughout domestic space in order to better visualize and understand graffiti concentrations. More specifically, through a study of the graffiti from one house in

Pompeii, I demonstrate that access analysis offers a unique perspective in proving why certain rooms, because of their relationship to other rooms and the street, were natural locations for large graffiti concentrations.

Access analysis is a space syntax technique developed by Hillier and Hanson to understand and visualize how a building's design inhibits or promotes social interaction. In this methodology, an analytical plan is created that shows the circulation through the building and the connection of spaces to one another. Grahame, in his analysis of the House of the Faun in Pompeii, suggests that rooms that connect to the greatest number of rooms encourage social gatherings by means of their openness and are those likely to be public spaces. Recently, Anderson has used access analysis to explore the location of construction materials after the earthquake of 62 C.E. and found that they were located in spaces connected to many others and thus were more accessible. Following on these insights, I explore how graffiti concentrations correlate to the traffic patterns and architectural connectivity within the house, as well as the relationship of certain rooms to the street

To do this, I use three computer programs, JASS, DepthMap, and ArcGIS, to identify and model areas of control (nodes) within the home. I then correlate these findings with the concentration of graffiti located within the spaces. Further, I compare the location of the graffiti with the presence availability (accessibility to the outside) of the spaces. I prove the usefulness of access analysis in understanding graffiti concentrations and highlight the benefits of each modeling program. Graffiti are abundant in the domestic spaces of Pompeii, but there are more in some spaces than in others. This paper shows that access analysis provides one way to understand the differences in this distribution.

The Canterbury Hinterland Survey, Phase 1: Bourne Park
Lacey M. Wallace, University of Cambridge, *Paul S. Johnson*, University of Nottingham, and *Alex Mullen*, University of Oxford

The initial results of a large-scale (ca. 30 ha) geophysical and topographical survey undertaken in 2011–2013 in an area of pastureland (Bourne Park, Bishopsbourne, ca. 5 km southeast of Canterbury) are presented here. Made through the analysis of large-area gradiometry, targeted electrical-resistance and ground-penetrating radar, aerial photographs, known sites, and records of older metal-detected finds. The initial interpretations are of a complex diachronic landscape with hundreds of burials (dating from the Bronze Age through the Saxon period), several rectilinear enclosures, trackways and other linear features, barrows, ring ditches, sunken-feature buildings, and a Roman-period structural complex primarily consisting of two large buildings within a rectilinear enclosure.

High-status rural Romano-British sites—so-called villas—are thought to be absent from the area surrounding Canterbury (Durovernum), particularly in comparison with the high density of villas known for their architecture and dramatic landscape settings in the Darent and Medway Valleys. The use of prominently located burials, especially those in and around barrows or mounds, is presumed to have been the main channel through which the Canterbury elite demonstrated their wealth, power, and status—as was common across southeastern Britain in the late pre-Roman Iron Age. The physical association between prominent burials

and villa sites elsewhere confirms the symbolic link between them. The lack of villa sites in the hinterland of Canterbury has been interpreted as indicative of a different control of the territory as well as construction and communication of social identities. Indeed, it has been suggested that the civitas may have been limited to northeastern Kent, with areas south and west of Canterbury either in private hands or controlled by the imperial administration.

Along the Canterbury–Dover road—especially on the higher ground—there are hundreds of burials forming a significant, long-duration, symbolically charged funerary landscape along a corridor close to and emanating from the ancient center. If the Bourne Park site can be labeled a high-status Romano-British rural complex, then it begins to show that targeted survey of the hinterland of Canterbury, especially along the main roads where there are prehistoric to Roman-period burials and dramatic landscape settings, may be able to change our understanding of how the elite of Durovernum used the areas surrounding the urban center to negotiate their status and power and their relationship within the Roman empire.

SESSION 5E
Recent Perspectives on the Age of the Pyramids

CHAIR: *Eric H. Cline*, The George Washington University

Modeling the Economy of Bread Production in the Old Kingdom
Claire Malleson, Ancient Egypt Research Associates

The focus of this paper is on the production and consumption of bread at the Heit el-Ghurab settlement at Giza. The data from that site are used to create a model that can be applied to other Old Kingdom sites in Egypt. The starting point for most studies of provisioning of bread in ancient Egypt are ration and wage texts. This paper takes a different approach, establishing a baseline of how much wheat bread was required daily, using data on human nutritional requirements and information deriving from research into the supply of meat to the town. The archaeological remains and material culture of the town are used to ascertain how many individual loaves of bread had to be produced, how much time this would have taken, and how many workers were needed to fulfill these requirements. The result is a model into which any number of variables can be incorporated, including barley and beer production and provisions of fish and other food types. By taking this approach based on human requirements and archaeological evidence rather than textual information, it is possible to ascertain how much grain and bread was needed and how many bakeries and workers were required. The model can then be applied to other major Old Kingdom construction sites.

Expanding the model to the provisioning of the wheat, this study uses ancient and historic information on crop yields to estimate how much land and labor were needed to produce the required amounts of grain. The results have implications for our understanding of the Old Kingdom economy in general, with particular reference to the pressures on the state to support the pyramid construction programs.

Recent Finds and Geoarchaeological Research at the Temple Town Hierakonpolis, 2006–2013

Elizabeth J. Walters, Pennsylvania State University, *Amr El Gohary*, National Research Centre, Cairo, *Shelton S. Alexander*, Pennsylvania State University, *Richard R. Parizek*, Pennsylvania State University, *David P. Gold*, Pennsylvania State University, *Receb Cakir*, Washington State Department of Natural Resources, *Marina Panagiotaki*, University of the Aegean, *Yannis Maniatis*, Laboratory of Archaeometry, Institute for Materials Sciences, National Center for Materials Sciences, Demokritos, and *Anna Tsoupra*, Laboratory of Archaeometry, Institute for Materials Sciences, National Center for Materials Sciences, Demokritos

The geoarchaeological team from the Pennsylvania State University and the National Research Centre, Cairo, with support from United States–Egypt Science and Technology grants in 2003 and 2006, has gained important new evidence concerning the history of the ancient temple town Hierakonpolis. With regional problems from new irrigation in the nearby desert, rising groundwater and salt accumulation undermining ancient and current structures, reducing fertile land to salt fields and mudbrick to salt patches, and rendering all, except lithics, within the salt zone to friable crumbs. Pools of saltwater mar the ancient town and temple. They appeared first in 2000 as three, then 2003 as 30 and in 2008 as 36. The pools have varied in size and more than 30 continue to present. We have been working with and against these conditions to develop dewatering methods to safeguard this important site.

The purpose of this paper is to present the project's findings from 2006to 2013: geophysical (seismic) data, hydrogeologic studies, and archaeological evidence. The paper also highlights some of the special items, such as ebony and faience, that have context. Two areas in the ancient town continue to be explored with geophysical surveys and monitored for changes in groundwater and salinity. Shallow excavations also continue. Quadrants 10–11n11w frame the 2003 trench identified first by geophysical survey, revealing limestone serving as a bench, along with the unexpected, an offering area of 37 pot stands dating to Dynasty I, ca. 3200 B.C.E.

The second area lies along the 15n line (quadrants 15–16n, 8–9w, and 15n1w), followed seismic surveys, intersected more variable hydrological activity, and connected to structures found in the excavations of 1978 and 1981 led and published by Walter Fairservis. Faience figurines continue to be found with occupational context. The study and characterization of faience from the temple town of Hierakonpolis is a new objective begun in 2011 with Marina Panagiotaki of the University of the Aegean, Yannis Maniatis of the Laboratory of Archaeometry, Institute for Materials Sciences, National Center for Materials Sciences, Demokritos, and Miss Anna Tsoupra of the Laboratory of Archaeometry, Institute for Materials Sciences, National Center for Materials Sciences, Demokritos. Similar and more numerous faience figurines have thus far been found at two temple sites, Abydos and Elephantine. Those at Hierakonpolis provide the first secular context. Occupation levels 3–6 continue to provide close interconnections and support a consecutive occupation close in time, and accompanying pottery provides a date for the faience to Dynasties I–II.

New Discoveries on the Giza Plateau, Egypt
Mark Lehner, Ancient Egypt Research Associates

Since 2005, Ancient Egypt Research Associates (AERA) has been investigating two sites on the Giza Plateau: the valley temple built as part of the mortuary complex of Menkaure, the last 4th Dynasty pyramid-building king, and a nearby town attached to the tomb of 4th Dynasty queen Khentkawes. Although excavations had been conducted here in the past—100 years ago by George Reisner and 80 years ago by Selim Hassan—our work employing contemporary archaeological methods has yielded new and important insights into the sites.

We determined that the Khentkawes town was actually an extension of the Menkaure Valley temple complex rather than a community dedicated to the cult of the queen, as had been assumed by many scholars. We also found that the Khentkawes town site was more extensive than previous work showed. To the east of the town we uncovered a deep basin, with corridors, ramps, and stairs leading up to the Khentkawes town, which had never been mapped or reported. The basin, filled with Nile waters, was probably used to deliver goods during the heyday of the town and temple. On the east side of the basin, opposite the Khentkawes town, we discovered a complex with silos, bakeries, and administrative/residential chambers, which also had never been published. It seemed reasonable to assume that the structure, which we dubbed the Silo Building Complex, was an extension of the town and active during the 4th Dynasty. However, our limited excavations in 2012 turned up clay sealings suggesting otherwise. Ten sealings bore the *horus* name of Niuserre, a 5th Dynasty king. One included the title "Overseer of the Pyramid, Great is Khafre," suggesting that the complex was dedicated to maintaining the cult of long-dead Khafre, the pharaoh preceding Menkuare. Smaller numbers of sealings were also found with the names of other 5th Dynasty rulers: Userkaf, Sahure, and Raneferef. This was unexpected, as the royal house had abandoned Giza at the end of the 4th Dynasty and moved south to Saqqara. These sealings, in addition to renovations in the Menkaure Valley temple that we determined were carried out by Niuserre, suggest that the 5th Dynasty rulers were harkening back to the great pyramid-building era to help legitimize their authority during a turbulent period in Egyptian history.

SESSION 5F
Recent Research in the Near East

CHAIR: *Jodi Magness*, University of North Carolina at Chapel Hill

At the Fringe of Empires: Intercultural Agency at Hasanlu Tepe
Megan Cifarelli, Manhattanville College, and *Michael Danti*, Boston University

The site of Hasanlu Tepe in northwestern Iran reached the height of its prosperity in the Iron II period (Hasanlu IVb, 1050–800 B.C.E.), a zenith that ended abruptly with the destruction of the site ca. 800 B.C.E. The excavators uncovered a fascinating range of archaeological contexts in this horizon, including the well-

known destruction levels at the citadel, where more than 200 men, women, and children were trapped when the burning buildings collapsed, as well as approximately 100 contemporary graves on Hasanlu's Low Mound.

The rise in the fortunes of Early Iron Age Hasanlu occurred in lockstep with the rise in two major empires in the region—Assyria and Urartu. For the most part, interpretations of the material culture of Hasanlu have been Assyrocentric, seeking connections to Assyria and identifying instances of the emulation of Assyrian imperial art. More often than not, this "Assyrianization" has been treated as an assertion of secular, political power on the part of Hasanlu's elite. While connections between Assyria and Hasanlu are demonstrable, our research suggests that Assyrianizing contexts at Hasanlu are confined to a few cultic buildings on the citadel, in sealed temple storerooms that held a wealth of objects collected over many generations from a considerable geographical expanse.

Moreover, it is clear that objects from Assyria and their emulations do not occur in the elite burials of the Hasanlu IVb Low Mound cemetery. A few exceptional "warrior burials" contain quantities of weapons and armor, as well as new artifact groups, such as iron jewelry, weapons, and sheet metal strips that may be belts. Elite female burials also evince new artifact types, including pin types as well as bronze plaques decorated in relief with an erect phallus and fastened diagonally across the chest of the deceased. While one might expect these burials to include objects that would link the owners to the powerful Assyrian empire, we argue that nearly all these newly introduced artifact types originate to the north of the Lake Urmia basin, along the shores of the Caspian Sea in Talyche/Talesh, as well as in Transcaucasia, regions coming into the sway of the burgeoning Urartian empire. This evidence, in conjunction with the increasing body of literature that demonstrates a strong Urartian presence in the Lake Urmia basin during the Iron II period, prompts us to reevaluate the impact of both empires on Hasanlu Tepe.

Late Bronze Age Imported Pottery in the Southern Levant: Economy, Symbolism, and Society

Aaron Greener, Bar-Ilan University

An analysis of the finds from numerous sites and contexts in the southern Levant demonstrates the differing regional distribution patterns among both the Cypriot and Aegean vessels that were imported during the Late Bronze Age. This imported pottery, hard fired and often elaborately painted, was different from the products of the local industry. It is likely that these physical properties of the vessels played a role in their attraction for local consumers. Thus, although these goods traveled in small quantities, their social importance was probably out of proportion to their bulk.

The reasons for the differentiated distribution patterns were dictated not only by the trade networks and availability but also by the conscious and unconscious choices and decisions made by individuals and groups as to which vessels to use, whom to purchase them from, and the proper way to use them during the burial rituals and while storing, preparing, and consuming their food. I demonstrate that some of the varied symbolic and cultural meanings that were attached to the imported vessels and the contexts within which they were used could reflect

interaction between Canaanite groups, while others may reflect the retention of groups' separateness and identity. Further analysis of these patterns leads also to a better understanding of Egypt's influence on the different regions in Canaan during this period and their degree of control over the importation and flow of the foreign goods.

Siting Performance, Memory, and Identity: Israel's Monarchy as a Case Study of State Formation in the Iron Age
Janling Fu, Harvard University

The Levantine polities that followed the widespread, systemic collapse of the Late Bronze Age palace economy attest to longer-term processes of social and cultural cohesion between tribe and state. Their rise can be viewed through anthropological models of gift exchange and feasting related to state formation, as proposed by Dietler ("Driven by Drink: The Role of Drinking in the Political Economy and the Case of Eary Iron Age France," *JAnthArch* 9 [1990] 352–406). At the same time, they participated in, and were influenced by, broader patterns of interregional trends of trade, exchange, and cultural influence. In coming to understand a cultural syntax of state formation at this time, relatively little attention has focused on the role of performance in developing the cohesive power of the state. And yet, as Inomata and Coben argue in their volume *Archaeology of Performance: Theaters of Power, Community, and Politics* (Lanham, Md. 2006), matters of performance, of the theater and spectacle, were central in establishing the state. In what follows, I hope to sketch an understanding of Israel in Iron Age II that offers one example of an agent-based model of intercultural contact and the wider diffusion of stylistic and ideological norms positioned between the poles of performance and the feast. I argue that one main purpose for monumental construction in the Iron Age lay in an emergent understanding of nation building through sites structured to create institutional and shared group experiences of identity that would exert a suitable ideological and hermeneutical frame around the imposition and legitimation of authority.

Dja'de el Mughara (Syria): A Village from the Ninth Millennium Cal B.C.E. in the Euphrates Valley
Eric Coqueugniot, CNRS, Maison de l'Orient et de la Mediterranée

Located on the left bank of the Euphrates River, 115 km northwest of Aleppo, the Neolithic tell of Dja'de has revealed archaeological levels dating mostly to the ninth millennium B.C.E. This paper presents the results of excavations undertaken in 1991–2010 by a team from the French Ministry of Foreign Affairs.

It deals with a crucial phase for the process of Neolithization, which sees the transformation from a way of life based on hunting and gathering (with probable predomestic agriculture) to one characterized in the following phases by the full economy of production (agriculture and herding) characterizing the following phases. It is the end of this period of gestation and invention that we can grasp in Dja'de, whose archaeological levels are particularly with indications of the

techniques (tools, architecture), the social organization ("House of the Dead," remains of feastings, collective hunts, large communal semiburied building), and the sanitary state of populations (oldest attestations for tuberculosis, a sickness seemingly linked to the beginning of bovine domestication).

Dja'de is the only site in the north Levant that covers the whole of the ninth millennium, and the thickness of the archaeological levels (more than 9 m) has permitted a fine seriation, allowing us to question the hierarchy of cultural changes. Dja'de has revealed a progressive and gradual evolution from the end of Pre-Pottery Neolithic A (PPN-A) to the end of early Pre-Pottery Neolithic B (PPN-B). Replaced in its regional context, Dja'de's ancient chronological sequence clearly demonstrates that the PPN-A–PPN-B dichotomy does not correspond at all to a cultural change. On the contrary, we can observe a step far more important between the "early PPN-B" and "middle PPN-B," in the architectural features (spatial organization, construction techniques), in the economy, and at a symbolic level (funerary practices, adornment, multiplication of human and animal figurines). The seriation first established for Jericho in the 1950s appears therefore more and more as a convenient but misleading chronological frame, giving the illusion of cultural changes when they do not exist.

Dja'de's most spectacular discovery is that of an 11,000-year-old building used for a collective purpose (a "communal building"). This circular half-buried building (internal Ø ca. 7.50 m) had several radial piers, on which polychromic geometric painted patterns/paintings—the oldest known in SWA—were still preserved. One of the painted piers was taken down, consolidated, and transferred on a permanent support. It was moved to the Museum of Aleppo in 2010.

Ancient Cypriot Limestone Sculpture and Self-Taught Sculptors in the Ancient World
Ann-Marie Knoblauch, Virginia Polytechnic Institute and State University

The limestone votive sculpture of ancient Cyprus often depicts the worshiper, presumably standing in perpetual attendance to the god. Extant sculpture of this variety survives in a range of scales and styles and reflects the diverse ethnicities of dedicants who left offerings at sanctuaries on an island famed for its religiosity. Two remarkable aspects of this limestone sculpture (particularly that dedicated during the Cypro-Archaic and Cypro-Classical periods, ca. 750–310 B.C.E.) are the enormous quantity produced and the wide range of the quality of the surviving examples. The findspots suggests that in antiquity, small, humbly made pieces were dedicated side by side with large-scale pieces of higher quality.

While Gaber proved the existence of regional styles of Cypriot sculpture with reference to the large-scale pieces of high quality (P. Gaber-Saletan, *Regional Styles in Cypriote Sculpture: The Sculpture from Idalion* [New York 1986]), this paper looks instead at objects of lesser quality to determine their place within the climate of sculptural production on the island.

I suggest that while the high-end and low-end sculptures were part of the same iconographic tradition, in terms of production they represent very different operations. By investigating the characteristics of the soft and easily worked limestone found in abundance on the island as well as the often rough and sloppy details of

the finished sculpted products, I propose that many of these sculptors were more closely allied with what we might think of as folk artists. These craftsmen created a cottage industry, taking advantage of both a raw material that could be worked with relatively little training (akin to whittling wood) and the strong religiosity of the local and visiting populations. The objects they produced would have suited the budgets of less affluent visitors to the sanctuaries.

Both large-scale and small-scale Cypriot votive sculptures reveal a knowledge of contemporary Greek sculptural style, but while the large limestone pieces (presumably produced by trained professionals) employ techniques not dissimilar to carving marble, the "folk artists" mass-produced smaller scale objects using unique techniques, such as a series of thin, vertical concave hollows achieved by scraping the soft stone to indicate drapery folds, and simple "nicks" in the stone to indicate hands and hairstyles.

These sculptors worked with what they had to maximize output (and therefore income) with minimal investment of energy, contributing to both the religious reputation of the island and, importantly, their local economy.

SESSION 5G: Workshop
Art, Artifact, and Specimen: Approaches to the Collection, Display, and Interpretation of Ancient Objects
Sponsored by the AIA Museums and Exhibitions Committee

MODERATOR: *Kenneth Lapatin*, J. Paul Getty Museum

Workshop Overview Statement

Objects from ancient civilizations have long been collected, displayed, and interpreted by and at a variety of institutions, each with different histories, aims, and audiences. Following two very successful workshops at recent annual meetings in Philadelphia and Seattle, the AIA's Museum and Exhibitions Committee proposes to take full advantage of the location of the 2014 annual meeting in Chicago to examine, explore, and interrogate, as case studies, how three renowned local institutions—an art museum, a university museum, and a science museum—engage with the past, both individually and collaboratively. The Art Institute of Chicago, the Oriental Institute Museum (University of Chicago), and the Field Museum of Natural History were founded at different times for very different reasons. Created to serve diverse constituencies, they each nonetheless acquired—and continue to acquire—ancient objects for research, preservation, education, and display. Each has been involved, to varying degrees, in excavation projects and each has also accessioned and displayed unprovenanced objects. As their collections have grown, so, too, have their missions, interpretive practices, and reception by visitors as they serve broad audiences ranging from school children to eminent scholars. This workshop will feature a representative from each of these Chicago-based institutions who will present its history, mission, audience(s), collecting policies, and current initiatives and strategies, including changing exhibitions, educational programs, and the adoption of cutting-edge technological interfaces. These brief introductory presentations will be coordinated to emphasize both differences and

commonalities among the institutions as well as particular challenges faced by each. Collaborations between them will also be addressed. Following the comments of respondents from other institutions, ample time will be devoted to questions and what, in light of previous experience, we anticipate will be lively discussion.

PANELISTS: *Kenneth Lapatin,* J. Paul Getty Museum, *Katharine Raff,* Art Institute of Chicago, *Jack Green,* Oriental Institute of the University of Chicago, *William A. Parkinson,* Field Museum of Natural History, *Kate Cooper,* Royal Ontario Museum, and *Elizabeth Marlowe*, Colgate University

SESSION 5H
Recent Work in Anatolia

CHAIR: To Be Announced

Recent Developments from the Seyitömer Mound Excavations
A. Nejat Bilgen, Dumlupınar University, Kütahya

A new fortification wall dated to the C phase of Middle Bronze Age was discovered in 2011 during the rescue excavations at Seyitömer Mound, which started in 2006. The fortification walls, which now reached 182 m in length, were partially protected with slight changes in the gateways during different phases.

The B phase of the Early Bronze Age, which is the fifth layer of the mound, was completely excavated, and the debris was almost entirely removed. Architectural structures pertaining to this period include a palace complex, megaron (temple), houses, workshops, and storehouses. The mentioned buildings have revealed ovens, fireplaces, platforms, and benches. Important finds from the palace complex include the 10 cylindrical seals, beads, and bronze needles discovered in the main room of the palace and rythons (libation vessels) discovered inside the megaron. The workshops comprise one or more ovens, molds used in pottery production, numerous vessels, spindlewhorls, and loomweights. Considering the abundant pottery finds and large number of ovens discovered, it might be appropriate to state that the site was the oldest ceramic production center in the region. The finds from the cultural layers also suggest that Seyitömer Mound not only remained a production center but also developed very strong trade relationships with other regions.

Coins and Attic pottery discovered at the skirts of the mound demonstrate that Achaemenid and Roman settlements have dispersed over the borders of the mound.

It is planned that by the end of 2014, the cultural layers that constitute the cone of the mound will be discovered, drawn, cleaned, and removed. However, the settlement has dispersed at the skirts of the mound.

The Status of Seyitömer Mound During the Middle Bronze Age
Zeynep Bılgen, Dumlupınar University, Kütahya

As a result of the rescue excavations carried out at Seyitömer Mound, Kütahya, since 2006, five cultural layers have been identified, and it has been determined that layer IV belonged to the Middle Bronze Age. The cultural layer of the Middle Bronze Age has been organized in three phases. After archaeological assessments and through the use of the optically stimulated luminescence method, the layers were observed and dated as A: late phase (1750–1700 B.C.E.); B: middle phase (1790–1750 B.C.E.); and C: early phase (20th century to 19th century B.C.E.).

The A phase was intensely disturbed by the Achaemenid period settlement. The B and C phases underwent an earthquake resulting in burnt and destroyed buildings. Inside the buildings, we have discovered in-situ human skeletons and objects, such as weapons and ornaments, carried by those people. It was observed that in phase C the settlement had a strong defense system. The fortification wall surrounding the city reaches 182 m including the entrances and the double fortification system. The fortification wall represents one of the most important defense mechanisms known in Anatolia from this period. Settlement took place both inside and outside the fortification.

The phases of the Middle Bronze Age are almost the same in terms of architecture. The buildings were constructed using joint walls, and most of them were built on rectangular plans. Inside the buildings, one might observe ovens, compartments, and workshops. The horseshoe-shaped ovens were built in parallel to their contemporaries in central Anatolia. Boot-shaped terracotta libation vessels, a hammer-headed stamp, a lead figurine, and locally produced central Anatolian-style embossed sherds of pottery and protomes strengthen the view that the settlers of Seyitömer Mound established trade relations with central Anatolia and Mesopotamia, which were under the influence of Assyrian trade colonies.

Early Bronze Age III Ovens and Kilns at Seyitömer Mound
Nazan Unan, Dumlupinar University

Seyitömer Höyük is located in Seyitömer Lignite Company's reserve zone situated 26 km northwest of the province of Kütahya. The rescue excavations initiated in 2006 under the direction of Prof. Dr. A. Nejat still continue.

Ovens and kilns were discovered in both the A and B phases of Early Bronze Age III settlement at Seyitömer Mound. The phases have similarities in their settlement plans and architectural elements. The Early Bronze Age settlement has a regular plan. The settlement in this period is organized around a megaron-planned temple, and the buildings are also constructed over a megaron plan. Inside the buildings we have discovered ovens close to the back wall. These ovens are rectangular in shape with horn-like bulges at the tip. There is a semicircular platform before the ovens. It is thought that this platform was used for heating and cooking purposes. It is also thought that the horns did not serve a function but were related to the cult of the bull.

The kilns dated to the Early Bronze Age in the same layer were circular in plan and covered with domes, and they were plastered both inside and outside. Some of

the kilns had rectangular compartments next to them, which may have been used as ash pits. The average diameter of the kilns varies from 2.00 m to 2.50 m. Given the abundant terracotta vessels and sherds of pottery specific to Seyitömer discovered at the mound, it is thought that these kilns were used for pottery production.

It is also thought that Seyitömer was a pottery-production center during the Early Bronze Age, considering the dimensions of the kilns, special pottery-making techniques, and the abundant pottery discovered. It was further discovered that the ovens with horn-like bulges existed not only in religious buildings but also inside houses. Thus, it is deduced that these ovens served both everyday and religious functions.

Soumak and the Wavy-Line Style: The Interchange of Textile Designs and Geometric Painted Pottery in Ninth-Century Phrygia
Samuel Holzman, University of Pennsylvania

Ca. 800 B.C.E., the largest megaron on the citadel of Gordion and the luxury goods stored there burned down in a fire that partially carbonized a pile of tapestries. The preserved textile scraps from this building, Megaron 3, offer a tantalizing glimpse of the intricately woven geometric patterns produced at Gordion. Along with the miniature meander, checkerboard, and concentric diamond patterns there were many fragments of soumak weaving—a monochrome herringbone wrapped on with a much thicker thread. These fragments have previously been interpreted as selvages—a protective border of a sturdier weave applied around the edges of a textile. Renewed examination, however, reveals that these fragments were not all peripheral but in fact formed broad stripes, which structured more complex visual compositions. Putting aside the utilitarian interpretation of soumak selvages and approaching the textured zigzag as a major element of the Early Phrygian geometric repertoire leads to a surprising conclusion: Gordion's most common painted pottery style—the so-called Wavy-Line Style—appears not only to imitate the rhythmically undulating wefts of soumak with clusters of its eponymous wavy lines but also to depict complete textile compositions. This formal dialogue between ceramics and textiles provides a new and unexpected perspective on the decorative arts of Iron Age Gordion.

Alishar Höyük and Ceramic Innovation in Prehistoric Anatolia
Shannon Martino, Field Museum of Natural History

The practice of applying graphite to pottery in the Balkans is quite well known. It was used either as a slip or, later, to paint motifs on vessels since at least 5500 B.C.E. Evidence has been found of graphite sources and tool pieces, particularly in Bulgaria. Traditionally, the production of graphite wares has been described as something that requires a specialized skill set involving the application of graphite to ceramics before or after firing to obtain a black coloring or silvery sheen; depending on the firing conditions, that graphite could end up appearing simply as a white residue. My research on ceramics from Alishar Höyük in central Anatolia

indicates that this technique is present in Anatolia, shedding light on the strength of interaction between Europe and Anatolia during this early period.

The research presented in this paper not only includes the results of a formal analysis of the graphite-decorated sherds from Alishar Höyük, but also includes the results of a portable X-ray fluorescence (XRF) analysis and an inductively coupled plasma mass spectrometry (ICP-MS) analysis of those sherds. These analyses show that Alishar Höyük was part of a regional network of interaction and, at the same time, produced graphite slipped pottery that was likely contemporary with or only slightly postdated developments in southeast Europe. Such results portray central Anatolia not as an isolated backwater, despite its distance from already defined centers of cultural development in Mesopotamia and Europe, but rather as a principal actor. Even when it was not connected to other regions through exchange, it was connected to other regions through the practice of innovative techniques. These techniques, despite their obscurity, become central to eastern Anatolian ceramic traditions by the middle of the Early Bronze Age.

SESSION 5I
Cultic Spaces in Greece and Asia Minor

CHAIR: *Nancy L. Klein*, Texas A&M University

A First Approach to the Character of Cults at the Sanctuary on the Island of Despotiko Through the Examination of the Findings from Buildings Alpha and Delta

Erica Angliker, University of Zurich, *Yannos Kourayos*, 21st Ephorate of Prehistoric and Classical Antiquities, *Alexandra Alexandridou*, FNRS-Université libre de Bruxelles, and *Kornilia Daifa*, Greek Ministry of Culture

This past decade, excavations on the Cycladic island of Despotiko brought to light an extended sanctuary dedicated to Apollo and Artemis that flourished during the Archaic period. An ongoing systematic excavation has thus far revealed 11 buildings and various other structures, as well as a sufficient number of votives and other finds to permit a first reconstruction of cultic practices at the site. This paper aims to present an insight into the character of the cults held on Despotiko by examining published and unpublished materials encountered on two of the most important cultic edifices of the site: Buildings Alpha and Delta.

Although the findings from Building Alpha include a few items from distant places, such as Egypt, most materials are of Cycladic origin, indicating that the worshipers belonged mainly to this region. An examination of the votaries reveals that both men and women worshiped Apollo and Artemis as divinities that promote fertility and prophylaxis. While most of the pottery from this structure is of the type commonly encountered in sanctuaries and thus sheds no light on the character of the cult, the structure of the building itself, a banquet room, indicates the importance of communal meals in cult practice.

The Archaic findings from Building Delta replicate the character of the cult already discovered from analyses of Building Alpha. Epigraphic evidence men-

tioning the name of Apollo suggests that the building was dedicated to this god. Building Delta seems to have replaced an earlier structure, which was found at a lower level. It was in association with a large corpus of material dating to the second half of the eighth century and dominated by large open shapes, such as kraters, as well as drinking cups and kantharoi. The prevalence of these forms testifies that during this period dining seems to have been the focal activity. The analyses of buildings Alpha and Delta offer critical insight into the general character of the cults at Despotiko and show the importance of communal meals for the cult in the Geometric and Archaic periods. An examination of the material also reveals that the cult at Despotiko was practiced by people from the Cyclades, who worshiped Apollo and Artemis as divinities promoting fertility and health.

Exploring the "Limits": Greek Pedimental Corner Figures
An Jiang, Emory University

Among the several parts of a building that Greeks chose to decorate with sculpture, the triangular space of the pediment was the most dramatic in effect but also the most difficult to achieve. However, ancient Greek sculptors devoted considerable effort to creating compositions that filled the entire space, including the notoriously challenging corners. Such endeavors were consistent from the first emergence of the pedimental decoration through the Archaic and Classical periods. Modern approaches to understanding the development of pedimental sculpture have traditionally emphasized "problem solving." The technically difficult triangular space was gradually mastered as sculptors negotiated issues of scale and narrative. However, ancient conceptions of the pedimental corner offer a fresh starting point for understanding this space as a place of opportunity rather than as a disadvantage to be overcome.

Pindar and Aristophanes are among the earliest ancient authors to relate the shape of a pediment to the eagle, whose power resides in its wings. Pausanias' descriptions, although considerably later, provide further testimony for how the corners were viewed (Pausanias 2.11.8, 5.10.7). His association of pedimental corners with the notions of "limit" and "finishing" potentially brings us closer to how ancient Greeks may have conceived this critical position positively as a determining part of their pedimental composition.

The idea of "limit" or "finishing" is embodied across the production of pedimental corner figures, although it is manifested in different ways. In the most basic sense, certain corner figures served as literal limits that stationed the boundary and completed the narrative (e.g., the Old Temple of Athena on the Athenian Acropolis). Other corner figures allude to such concepts in a subtle manner by representing motifs of "dying figures" (e.g., the Temples of Artemis at Corfu, Aphaia at Aegina, and Asklepios at Epidauros). As major deities came to dominate the central space of the Greek pediment, the heroic narratives in the two corners may have been viewed as finishing the transition from the supernatural force to the human world. In the most elaborate pedimental compositions preserved at Olympia and on the Parthenon, the corner figures finish the composition by providing social, geographic, and cosmic limits. These various corner designs and the fact that the Greek pedimental corners were never left undecorated underscore that

the pedimental corner space, far from being a compositional and aesthetic problem, was conceptually essential from the perspectives of both artistic creation and viewers' engagement.

Turning Water into Stone: Ancient Architectural Practice and a New Monumental Fountain in Labraunda, Caria

Felipe Rojas, Brown University, *Linda Gosner*, Brown University, and *J. Andrew Dufton*, Brown University

Mausolus is best known, if he is known at all, for the massive tomb that he built for himself in ancient Halikarnassos. But while the mausoleum is the most famous monumental building in ancient Caria, it is not the only one. Arguably the most impressive and the best preserved pre-Hellenistic architecture in the region lies in the mountain sanctuary of Labraunda, where Mausolus and his family transformed a rocky landscape into a fascinating complex of fountains, temples, and dining halls. During the summer of 2013, the Brown University Labraunda Project excavated the remains of a previously unexplored fountain house at the eastern end of the sanctuary. This fountain house—arguably the grandest of all extant water monuments in Labraunda—is an intriguing example of Hellenizing architecture and vernacular building techniques. It has the potential to shed light not only on ancient architectural practice and process but also on cross-cultural interaction in one of the most important sanctuaries in western Turkey. In this paper, which presents the results of our inaugural field season, we use architectural details to explain how the fountain was designed and built, and we analyze how it relates to other monuments in Labraunda and the region. It should be of particular relevance to those interested in the diffusion of Greek and Roman architectural techniques and idioms in Anatolia, as well as those studying the monumentalization of extra-urban religious sanctuaries in the region.

SESSION 5J
Undergraduate Paper Session

CHAIR: *Nick Kardulias*, College of Wooster

Remodeling Minoan Defensive Structures
Luke Kaiser, University of North Carolina at Greensboro

The history of Minoan socioeconomic interpretations has relied heavily on the theory of a so-called Pax Minoica, developed by the father of Minoan archaeology, Arthur Evans. However, more recently, there has been a trend toward interpreting some Minoan structures as enclosure walls, towers, bastions, and guardhouses, which adds a more militaristic aspect to the traditionally peace-loving Minoan culture. During the Bronze Age, the eastern Mediterranean was rife with warfare. Therefore, a militarized Minoan culture lies within the scope of reason. Contrarily, to subscribe to the notion of a bellicose Minoan society in the absence of signifi-

cant evidence of a standing military or participation in a land war in the Mediterranean would be to oversimplify their development into a world power in the Aegean during the second millennium B.C.E. These two opposing theories create a dualistic model that places the Minoans into a more moderate sociopolitical pattern that avoids labeling them as either pacifists or warmongers exclusively. Additionally, this multifaceted approach, when applied to the supposed fortifications of the Minoans, provides a much deeper interpretation of their manipulation of landscape and architecture. Minoan culture did not develop the idea of fortification identically to the state-level societies in mainland Greece, Anatolia, Africa, or the Levant. To the Minoans, the threat of earthquakes, landslides, and tidal waves was just as omnipresent as the threat of invasion by outsiders. Therefore, if the Minoans were building defensive systems, it was not solely to protect themselves from foreign rivals. They may have built a significant portion of these structures to defend themselves from their surrounding landscape. This hypothesis broadens the definition of what is defensive and what is merely utilitarian, allowing a term such as "fortification," possibly better suited for a culture with distinct militaristic traits, to be applied to the Minoans. Their dualistic defensive inspiration may have developed into structures that bear traits similar to those of militaristically defensive structures in Late Bronze Age mainland Greece. The enemies of the Minoans, the shifting landscape as well as hostile opposition, were combated simultaneously with retaining walls, terraces, seawalls, and positions on stable promontories. With this in mind, it is clear that the Minoans sought to defend their settlements from assault from the landscape just as the Mycenaeans did from siege.

Split Between Two Worlds: Land and Sea Archaeological Sites and Their Implications for Past and Future Cultural Change in Chuuk Lagoon, Micronesia
Matthew R. Brousil, Evergreen State College

Despite thorough ethnographic documentation of changes to traditional and modern lifestyles as a result of colonial activity, documented archaeological work on Chuuk is scant and has occurred almost entirely post–World War II. As such, reviews of the archaeological record are, regrettably, often snapshots delineating the historical existence of Chuuk into two disparate realms of interest: (1) the distinctly indigenous-focused world of precontact Chuuk; and (2) its post-war modern self, a repository of sunken military artifacts tethered to American and Japanese wartime memories.

In this paper, I present an alternative analysis of Chuuk's archaeological history. Specifically, I consider the fluctuating role of the Chuukese in the landscape, beginning with near-settlement sites between 2350 and 1650 years ago, and including later precontact and colonial sites, culminating with the intensification of Japanese immigration and the eventual destruction and deposition of hundreds of thousands of tons of military machinery during wartime. Lastly, I review the reemphasis of Chuukese presence and cultural identity through current preservation work and discuss opportunities for future Chuukese involvement in archaeological work within Chuuk Lagoon. I argue that the Chuukese archaeological record, though incomplete, is an irreplaceable, fluid illustration of indigenous dominance and struggle in two culturally charged landscapes: land and sea. This project, by

evaluating the shifting presence of native and foreign material culture between two crucial landscapes, redefines archaeological records of Chuukese experience into a unified, diachronic account of continued livelihood in Chuuk and farther abroad in Oceania.

The Evolution of Data Collection and Management in Archaeology: Reviewing the Past to Help Plan for the Future
Ryan Baker, the University of Texas at Austin

Although it may seem intuitive, proper planning and development of an infrastructure for the preservation of evidence collected in the field should be of paramount importance to the leaders of ongoing and newly founded research projects. Projects with a long history of excavation, like the Poggio Civitate Archaeological Project in Murlo, provide a unique opportunity to track the development of the collection of evidence and archival methods over a span of almost 50 years. By assessing the transitions from analog methods to digital archival systems, one can trace the challenges faced by scholars to preserve the exact same data set over decades of excavation and can use the lessons already learned by others to plan for the longevity of new research projects. This paper evaluates the history of data collection and archival methods at Poggio Civitate and identifies the challenges faced by members of the excavation to preserve data as different options for storage and publication arose. Additionally, it considers excavation and archival techniques used more recently, including digital publication kits, cloud computing, three-dimensional photogrammetry, and aerial photography using multirotor aircraft, ultimately looking forward to new data-collection strategies and storage systems that allow for stable housing of information while simultaneously giving the public access to the archaeological evidence.

Coinage and the Communication of Power in the Reign of Nerva, 96–98 C.E.
Alexander E. Gardere, Baylor University, *Amy Welch*, Baylor University, and *Nathan T. Elkins*, Baylor University

Recent research has indicated that Roman bronze coinage was supplied to different populations within the western Roman empire in part according to the imagery that those coins bear. At Nijmegen, for example, soldiers were supplied with coins bearing martial imagery, while such themes are less common in the finds from neighboring civilian settlements and from Rome.

We are presently engaged in a project directed by Nathan T. Elkins, supported by an Undergraduate Research and Scholarly Activities grant at Baylor University, in which we are collating information on the findspots of the coins of Nerva to discern to what degree, if at all, there is evidence for audience targeting in his short, 16-month reign between September 96 C.E. and January 98 C.E. Nerva's coinage is the focus of our investigation for several reasons. First, previous research has suggested that coins with different reverse types communicating various messages were supplied to different audiences in the western empire during the reigns of the preceding and succeeding emperors. Second, Nerva's short reign allows a

comprehensive study of his iconographic program deployed on the coinage. And finally, the historical sources do not say much about Nerva apart from his adoption of the much more famous Trajan and his own poor relationship with the army.

Already we are seeing trends in our data. Denotative types communicating specific ideas relevant to an audience in Rome are found more frequently in Rome and Italy, while types that connote broader ideals or values are very common in all areas and especially the provinces. The most abundant coins are those that bear images of personifications reflecting on the positive qualities of Nerva's rule: Pax, Libertas, and Fortuna. Our study provides insight into the ideological program that this emperor's administration wished to disseminate.

Network Economics in Roman Britain
Andrew Cabaniss, University of North Carolina at Chapel Hill

The economic development of the Roman provinces has largely been explained through investment and taxation. These drivers led to market growth along the Roman transportation network. Intrinsic growth factors in spatial economics have been recently formalized and provide a means of connecting the growth of the market system with the foundation of new towns through changes in landscape organization.

The Roman road network formalizes transportation routes across the landscape, connecting urban and rural economies. The network topology favors transport through certain towns and along certain roads, making these sites favorable for further economic development. By analyzing the network topology in a spatial economic light, we can elucidate the relation between the foundation of cities in Roman Britain and the internal development of the market economy.

Following expectations from a regional market system, towns emerge during the first century C.E. where there is a high potential resource flow, while during the second century the economy transitions to a system focused on information flow and urban exchange. Regional spatial economic factors affect the foundation of cities and figure into larger discussions of economic growth in the Roman world.

SESSION 6A: Colloquium
AIA President Elizabeth Bartman's Plenary Session:
Food and Drink

ORGANIZER: *Elizabeth Bartman*, New York Society

Colloquium Overview Statement
Chili, chocolate, alcohol—these and other foodstuffs consumed in antiquity offer unparalleled perspectives on the lives of those who produced and ingested them. Whether consumed as a part of daily routines or for special feasts and rituals, food and drink document multiple facets of ancient social life—status, identity, gender, and ethnicity, among others—as well as technological knowledge,

agriculture, trade, and demography. At the intersection of nature and culture, food is both subsistence and symbol. Like its predecessors, this third and final Presidential panel considers a fundamental theme of archaeological inquiry within a variety of cultures—both New and Old World—with the aim of elucidating broad conclusions. The individual papers draw on a range of research tools, including the latest scientific advances in genetic research and chemical analysis, to generate new data. Several papers demonstrate how food archaeology can reconstruct the lives of nonelite peoples who are otherwise essentially undocumented in the material (and textual) record. Together, they confirm the old adage that "we are what we eat."

Social Dimensions of Plant Food in South America: The Role of Chile Pepper in Creating Society

Christine A. Hastorf, University of California, Berkeley

Archaeologists learn a lot about the people we study through what they themselves focused on. People paid attention to what was important to them: food resources, social networks, family life, management of landscapes, and protection. Plants' specific histories tell us about these values. Across the Americas, the speed of specific plant adoption was at times fast and at other times slow. It was not just their caloric yield or because they provided food abundance temporally or geographically that made them of value. Many plants held special meanings, linked to flavors, scents, shapes, past memories of events, family members, and places. Periodic abundance allowed for larger gatherings, exchanges, dances, celebrations, feasts, and unions, making those places and foods significant in stories, myths, and lived experiences. This social networking and friendship through food that is created in daily meals and renewed and expanded at feasts holds a special place in our hearts as it did for those in the past. Feasts are a time out of normal life, forming significant memories, of special preparations and anticipations, as well as creating a source of discussion for months afterward. It is through daily and special food and drink events that ingredients become a meaningful part of society. The choice of nurturing certain plants and using them in recipes denotes their value within the cook's society. This paper uses chile peppers (*Capsicum*) as an example of how plants can speak to social interaction and identity formation; it traces them through time with morphometric evidence, genetics, dating, and ethnography. Applying new and multiple data sets, we learn not only about locations of origin and exchange patterns but also of their social and political meanings through their place within foodways. While talking about *Capsicum*'s movements around South America, I also focus on recent data from Huaca Prieta from the coast of Peru, where I trace chile pepper usage through time (5000–1500 B.C.E.). Their diversity of different tastes allows us to think about how plants and recipes worked in society, through growing, trading, owning, and producing specific recipes.

Food, Cooking, and Society Identity: Intercultural Households in the Colonial Network of Uruk, Mesopotamia, ca. 3700 B.C.E.
Gil J. Stein, Oriental Institute, The University of Chicago

Food preferences and technological styles of food preparation and cooking can provide powerful insights into the (often unconscious) daily practices that express social identity and especially ethnic differences. For this reason, analysis of food remains and food-related material culture can be of particular value in studying the archaeology of colonial encounters in prehistoric periods or in contexts lacking textual documentation.

This paper presents a case study of food remains and associated material culture from the late prehistoric (fourth millennium B.C.E.) site of Hacınebi in the Euphrates River valley of southeast Turkey. During the Middle Uruk period, ca. 3700 B.C.E., this site saw the establishment of a trading enclave of Mesopotamian merchants inside an indigenous Anatolian community as part of the world's earliest known colonial network. A close examination of faunal remains, archaeobotanical evidence, chipped-stone tools, and ceramics shows clear differences between the colonists and the local community in food preferences and in technological styles of butchery and food preparation. These aspects of material culture show the importance of both gender and ethnicity as intersecting dimensions of social identity in this prehistoric colonial encounter. The evidence suggests that the colonists established trade relations with the local community through strategic marriage alliances to form "intercultural households" of Mesopotamian Uruk males and indigenous Anatolian women.

Explorations into the Complexity of Foodways of Nonelite Roman Urbanites
Steven Ellis, University of Cincinnati

Studies of Roman foodways have enormous potential to delineate variety and explore complexity in the standards of living for the full spectrum of the Roman social structure. And there can be no shortage of evidence. An abundance of information on Roman comestibles overflows from literature, epigraphy, art, and archaeology. Even so, studies on Roman food have arguably been limited to (albeit important and complex) issues of large-scale trade, mass production, ritualized dining, and the privileged consumption habits of the elite; healthy is our knowledge of shipwreck cargoes and granaries and of luxurious public banquets and exclusive dinner parties with recipes for flamingoes and dormice. But what did the nonelite Roman urbanites eat? And what can we know of the systems—the infrastructure, from procurement to waste—of retailing in food and drink?

The University of Cincinnati's excavations at Pompeii of a large, nonelite neighborhood (two city blocks, VIII.7 and I.1) are shedding new light on this field; here we have discovered a working-class district of modest houses, shops, workshops, and hospitality outlets. This unusual range of data—including 20 shops in total, most of which retailed food and drink, and spanning multiple periods of habitation—has yielded very detailed information for the types of commodities the shops produced, imported, and sold, the fluctuations of their economic portfolios, and their competitive or contributive relationships to their (rival) neighbors. The

excavation of their kitchens—particularly their waste pits and drains—demonstrates striking dissimilarities between one neighbor and the next in the quality and variety of food being consumed by the nonelite: for example, one restaurant retailed a patently fancier menu than the others, with a wider array of fruits, vegetables, cereals, and seafood, more and younger cuts of meat, and even delicacies (like dormice) and imported goods, including the extraordinary discovery of a butchered leg-joint of a giraffe(!). Some outcomes of this study are that the consumption habits of nonelites were of a higher standard than is often presumed and were interestingly varied between one neighbor and the next. The results help us to move beyond the banal and typically binary divisions that are so often cast between the rich and poor, as well as to demonstrate the complexity in nonelite diets and what this can contribute to our understanding of retail economies, urban infrastructures, and Roman foodways at large.

Pleasure, Health, Wealth, and Chocolate in Ancient Mesoamerica

Janine Gasco, California State University–Dominguez Hills

Ancient Mesoamericans discovered that beverages concocted with seeds from the fruit of the cacao tree were not just pleasant to drink but could induce feelings of euphoria. They found that cacao processed in multiple ways could provide certain health benefits. Cacao seeds also came to be used as a medium of exchange. In fact, cacao played many roles in ancient Mesoamerican society beyond serving as a favored drink, as a health remedy, and as money; it also was used in feasting and gift giving, in religious offerings, and in a variety of civic and religious rituals. In Mesoamerica today cacao seeds no longer serve as currency, but cacao continues to be consumed in a variety of beverages; it is still highly regarded for its medicinal properties; and it continues to play an important role in numerous social and religious contexts.

The cacao tree, *Theobroma cacao*, and all its closest relatives are widely assumed to have originated in Amazonian South America. Curiously, in spite of cacao's South American origins, humans in South America apparently had little use for it. Only in Mesoamerica did cacao take on such great importance across so many aspects of society. The processes by which cacao acquired such valuable properties in Mesoamerica had been explored in the past through a combination of archaeological, historic, and ethnographic evidence, but many questions remained unanswered. In recent years, however, new techniques, including genetic research, residue analysis, and biomedical studies, have contributed valuable new data relevant to previously unresolved issues. Genetic research has demonstrated that of the many varieties of cacao that are found in South America, only a single variety existed in Mesoamerica prior to the European invasion. Residue analysis on ancient pots has now pushed back the earliest dates for cacao consumption in Mesoamerica to almost 4,000 years ago. Biomedical research on the chemistry of cacao has determined that chocolate can be beneficial to our health under certain circumstances, confirming what ancient Mesoamericans knew long ago. In this study, I review how the evidence from these new techniques, together with more recent archaeological, historic, and ethnographic data, provides us with a much more comprehensive understanding of historical developments related to cacao use in ancient Mesoamerica.

Drinking Matters: Alcohol as Embodied Material Culture (the Archaeologist's Guide to Drinking)
Michael Dietler, The University of Chicago

Alcohol is the most widely used psychoactive agent in the world, and, as archaeologists have recently demonstrated, it has a very long history dating back at least 9,000 years. At the time of European colonial expansion, only parts of Polynesia and North America were without indigenous forms of alcohol, and peoples of those regions quickly adopted the practice of drinking. Alcohol sales constitute an important part of the modern world economy, and taxation of alcohol production and consumption has long been a significant revenue source for governments. Drinking has been a central part of social life around the world for a very long time, but it has also been a subject of controversy, religious proscription, and legislative restriction.

Ethanol, the central component of alcoholic beverages, can be produced from an impressively wide range of sugary or starchy foods by a variety of techniques, and people have been extremely creative in developing new varieties from local materials. Comprehending the social and cultural significance of drinking requires understanding alcohol as, like other foods, a form of "embodied material culture": that is, a special kind of material culture created specifically to be destroyed through the transformative process of ingestion into the human body. Hence, it has an unusually close relationship to the person and to both the inculcation and the symbolization of concepts of identity and difference in the construction of the self. Moreover, the psychotropic properties of alcohol distinguish it from other forms of food and give alcoholic beverages a heightened valuation in ritual contexts: indeed, they frequently serve as a crucial indexical sign of ritual. Consequently, the consumption of alcohol is usually enveloped by a set of cultural rules and beliefs that is even more emotionally charged than with other foods. Furthermore, because sustaining the process of alcohol consumption requires continually replenishing production through agricultural and culinary labor, this domain of material culture is one in which the intimate linkages between the domestic and political economy are especially evident. These features also assure that the consumption of alcohol constitutes a prime arena for the negotiation, projection, and contestation of power, or what I have earlier called "commensal politics."

This paper outlines a theoretical framework for understanding the sociohistorical significance of drinking and uses an archaeological case from Iron Age France to demonstrate the promise that a focus on drinking has for our understanding of society and culture in ancient contexts.

SESSION 6B: Workshop
Managing Multidisciplinary Field Research Projects: Best Practices and Problem-Solving Strategies

MODERATORS: *Mary K. Dabney*, Bryn Mawr College, and *Leslie P. Day*, Wabash College

Workshop Overview Statement

Multidisciplinary field research projects have increasingly become the norm in archaeology. Geoarchaeologists, archaeobotanists, zooarchaeologists, and bio-archaeologists, among others, are members of the field research team. On the excavation, complex sampling protocols for radiocarbon dating, organic residue analysis, phytolith analysis, and the like need to be followed. The complexity of these projects requires planning and management skills for which few archaeologists are prepared. Bringing the multifaceted results of these projects to publication in a timely fashion can be particularly challenging.

In this workshop, directors and members of multidisciplinary field research projects present and discuss best practices and problem-solving strategies and answer questions from the audience. Participants will present ways to involve specialists earlier on in project design and ways to integrate the results of that work in the main body of the publication. They will discuss a more humanistic, narrative approach to archaeological publishing that includes reconstructing complete lifeways (i.e., people and their natural, physical, biological, and cultural worlds in a more holistic, dynamic, and interactive fashion).

Best practices to be presented:
- Getting project members involved at the project planning stage in the development of fieldwork goals and methods.
- Integrating results of laboratory analyses into the main body of the publications, rather than publishing them as stand-alone reports.

Problem-solving strategies to be discussed:
- How to decide the best way of publishing the results.
- How to encourage project members to get their publications done in a timely fashion.
- When and how to reassign publication responsibilities when a project member fails to meet publication deadlines.

PANELISTS: *Leslie P. Day*, Wabash College, *Mary K. Dabney*, Bryn Mawr College, *Michael MacKinnon*, University of Winnipeg, *Jane E. Buikstra*, Arizona State University, *Donald Haggis*, University of North Carolina at Chapel Hill, *Joseph W. Shaw*, University of Toronto, *Maria Shaw*, University of Toronto, and *Rainer Czichon*, Freie Universität Berlin

SESSION 6C
Commerce in the Hellenistic World

CHAIR: *Andrea Berlin*, Boston University

Chreophylakes and *Bybliophylakes:* Contracts Registration and Administration in the Hellenistic East, Between Mediterranean and Oriental Traditions
Gaelle Coqueugniot, University of Exeter

The study of material remains associated with public offices in the Graeco-Roman world gives us a glimpse at administrative practices of the ancient states, such as the registration and conservation of public documents and private contracts, the control of transactions, and the taxation of goods. While the modalities of these practices greatly varied from one Greek city to another in the Archaic and Classical periods, the development of large kingdoms in the Hellenistic East seems accompanied by a partial standardization of the practices and an increased control of the state over private contracts and transactions.

This paper deals with the registration of land and slave property in the Seleucid kingdom and its successors. Written and archaeological testimonia from several cities in the Seleucid and Roman East, dating between the third century B.C.E. and the third century C.E., mention royal and municipal magistrates associated with these practices, the *chreophylakes* and the *bybliophylakes*. In Seleucid and Roman Asia Minor, these magistrates appear in inscriptions registering testaments and donations of land, and they seem linked to the royal and provincial fiscal administration. The same link with the royal treasury is clear in the numerous clay sealings discovered in the two Mesopotamian cities of Orchoi and Seleucia on the Tigris (Iraq), many of which bear the name of these magistrates, as well as stamps confirming the paying off of taxes (salt tax, tax over the sale of slaves, *emporion* tax). In Dura-Europos (Syria), parchments recording antichretic loans were registered with the *chreophylakes*, and the remarkable inheritance law was entitled the "law of the *chreophylakion*," an office whose remains have been uncovered in the site's agora.

These various sources have, however, been studied together only rarely, and even less in direct comparison with other documents from neighboring societies. Their combined study allows us to precisely identify the role of the *chreophylakes* and the *bybliophylakes* in the Seleucid administration and the control of the state over land and slave ownership in the Hellenistic East. Moreover, it is possible to look at these magistrates and their activities in the context of the culturally mixed culture born after Alexander's conquests. Are the Seleucid registration of contracts and control over land and slave transactions practices imported by the Graeco-Macedonian settlers, inherited from Oriental traditions (either Syro-Mesopotamian or Achaemenid ones), or the product of the new Hellenistic culture?

The Dynamic Commercial Cityscape of Late Hellenistic Delos
Mantha Zarmakoupi, National Hellenic Research Foundation, KERA

This paper explores the integration of commercial and manufacturing activities in the domestic sphere by examining the residential neighborhoods that were developed on Delos in the Late Hellenistic period. During this time, Romans placed the island under Athenian dominion and turned it into a commercial base connecting the eastern and western Mediterranean. Earlier studies have focused on the public spaces—agoras, for example—to study the Delian economy, but they have not recognized that the commercial and manufacturing activities, which were gradually integrated in the houses, were also an important part of the island's commercial cityscape. In this paper, I consider the ways in which owners adapted and transformed the organization of their houses, creating new spatial arrangements that could generate profit in the dynamic economy of the island. In doing so, my goal is to present an early example of an urban economy where shops and workshops within domestic settings complemented the public commercial infrastructures. While fourth-century B.C.E. Olynthos portrays the integrated self-sufficient economy of the household in the Classical period, and while first-century C.E. Pompeii and Herculaneum represent the diversity of the specialized economy of the Roman city, Delos provides a step in between. Recent studies have suggested that the architecture of commercial buildings on Delos corresponds to the developments taking place in Republican Italy. For example, shops and workshops were walled off from private houses, and their upper story was accessible through a separate entrance from the street and could be let separately. My analysis shows that analogous developments can be noted in private architecture. The layout of the ground floor of the houses was altered, and groups of rooms were created to accommodate shops and workshops that could be let separately. The development of Delian domestic architecture provides a parallel for the systematic creation of shops and workshops within domestic settings that we know from the well-studied examples of Pompeii and Herculaneum.

Commerce, Construction, Chronology: A New Study of the Macellum at Morgantina
Joanne M. Spurza, Hunter College CUNY, and *Henry K. Sharp*, Independent Scholar

This paper reports preliminary results of a new collaborative effort toward the final publication of the Morgantina (Sicily) macellum, long considered the earliest surviving example of its type. Located in the south center of the Hellenistic Greek city's upper agora, its well-preserved foursquare plan with central court and tholos and a dozen shops arrayed on its north and south sides, makes the structure immediately recognizable as a Roman market building. Despite these canonical elements, architectural anomalies abound. The Morgantina macellum incorporated a small, preexisting temenos; its shop stalls show abnormally tight doorways; and of particular note is the inclusion of terracotta as a building material. The macellum walls contain amphora sherds, tile fragments, and reused bricks that supplement the more usual cut-stone block and rubble technique seen throughout the major civic monuments of the agora. Such "mixed-media" construction appears in

later phases of the Hellenistic houses at Morgantina and at least one other public building outside the agora and sheds some light on the early development and use of brick in the western Greek world more generally.

Beyond a thorough clearing that revealed the building, excavations of the macellum by Princeton University in 1955–1957 also recovered some 200 small finds and 940 coins ranging in date between the fifth and first centuries B.C.E. Hitherto unstudied, the range of small finds comprises bronze and iron tools, lead weights, fragments of ceramic mortaria, grain measures, stamped amphora handles, worked bone, terracotta figurines, and glass gems; some of this material may indicate varied room use. Reexamination of the copious numismatic evidence offers opportunities to clarify the building's construction date, posit variations in room use, and explore second-century B.C.E. economic transformations in eastern Sicily.

Recent scholarship has emphasized Roman macella as prestigious urban ornaments and benefactions. This reconsideration of all aspects of this precocious macellum—emblematic of the local power shift from Syracuse to the new Roman overlords, the Hispanii—illuminates the last two centuries of Morgantina's city life.

SESSION 6D: Colloquium
Etruscan Veii: the New Discoveries

ORGANIZERS: *Orlando Cerasuolo*, Sapienza University of Rome, and *Gilda Bartoloni*, Sapienza University of Rome

Colloquium Overview Statement

From the beginning of the first millennium to the Roman conquest in 396 B.C.E., Veii was one of the most powerful and interesting Etruscan towns, at just 12 miles from Rome. This colloquium aims to present the most recent and intriguing season of discoveries at Veii. Past archaeological research revealed the main features of the Etruscan town, while in the last 15 years, archaeological excavations have highly enriched the evidence of the settlement as well as the cemeteries. Discoveries such as the agger and the ramparts of the Iron Age, the painted Tomb of the Roaring Lions, the unusual funerary hut grave, and the new roof with the terracotta statue representing a full-length dog at Piazza d'Armi throw an entirely new light on Veii.

The different papers addresses the ninth to sixth century B.C.E. evidence, discussing Veii and its Mediterranean networks, Etruscan architecture, and religion. The outcome of the Sapienza University of Rome Veii Project allows an overall view of the development of the town, revealing a new chronological sequence. "City and Landscape" focuses on new evidence for the exploitation of the territory (with fascinating data such as a very recently found and still unedited kantharos decorated with incised triremes). Important recent discoveries of a series of seventh-century B.C.E. chamber tombs include the paintings of the roaring lions and the wonderful bronze embossed tablets from the Oliveto Grande tomb group (presented for the first time at an international meeting). The material connections between Etruscans, Euboean colonists, and Near East merchants are presented in

"Veii and the Oriental World." The contribution on the earliest stone sculpture in Veii focuses on the relationship between Veii and the Etruscan world with the Near East (in particular with northern Syria). The last paper presents the rituals in various sanctuaries in Veii focusing especially on the Portonaccio temple area.

DISCUSSANT: *Jacopo Tabolli*, Narce Archaeological: Virtual Museum (Italy)

Veii: The Archaeology of an Etruscan Town. New Discoveries and Perspectives
Gilda Bartoloni, Sapienza University of Rome

Since 1996, the Veii Project held by scholars of the Department of Classical Studies at Sapienza University of Rome resulted in a season of discoveries in the Etruscan town. This paper aims to present new data from the excavations, describing the general development of the settlement into five steps:

1. At Veii, the plateau was not occupied before the First Iron Age. Surveys and excavations revealed the first occupation by small groups of huts, involving the entire area. This large movement of population would be unthinkable without political chiefs within individual village communities. The burial I found in the center of Piazza d'Armi, in a wooden funerary hut, can be attributed to one of these leaders.

2. In the mid eighth century B.C.E., changes occurred both in the organization of the various settlements and in the territory surrounding the town, for socio-economic reasons. The town was encircled by fortifications, and the division between residential sectors and artisanal spaces was reflected in the organization of late Villanovan and Orientalizing cemeteries. Piazza d'Armi hill therefore assumed the character of the privileged residence. At the beginning of the century, in a precolonial phase, Veii represented the arrival point of Greek goods, while in the second half of the eighth and the beginning of the seventh century B.C.E. well-organized exchanges progressively increased with other areas of the Mediterranean, especially the Near East.

3. During the Middle Orientalizing period, the urban space was entirely defined, and the town was articulated into rectangular blocks (from huts turning into rectangular wooden houses with multiple rooms, porches, and patios). Tomb groups revealed an exceptional richness.

4. At the end of the seventh and during the sixth century B.C.E., tiles and roof decoration appeared in public buildings as well as private houses. The beginning of the worship at the Portonaccio sanctuary consisted in this first phase in open-area cults near the Minerva altar. At the beginning of the sixth century, Veii was protected by strong walls with several gates. The cemeteries were located on the tracks toward the neighboring towns, with the earliest tumuli crowning the city.

5. Current excavations highlighted a constructions fervor at Piazza d'Armi in the second half of the sixth century with new roads and blocks. A radical restructuring of the extraurban sanctuary of Portonaccio in the final decades of the sixth century B.C.E. might be attributed to the will of a royal personage.

City and Landscape
Alessandra Piergrossi, Italian National Research Council

Veii was the political and economic reference center of a large district between the Tiber and the Arrone Rivers, an area organized for the exploitation of agricultural, pastoral, and forestry resources and structured so as to allow the control of communication roads and defense, especially from the emergent Rome.

From the Orientalizing period, more or less relevant settlements belonging to small family groups, as well as small- and medium-sized villages in strategic positions at land routes and waterways were scattered throughout the territory. This was the result of the emergence and expansion of the aristocratic classes, expressed visually with signs that indicate land possession as the economic base: on the one hand with the distribution of small settlements and on the other with the appearance of tumuli outside the necropolis and little centers in the countryside.

New discoveries around Veii, such as the necropoleis of Poggioverde on the Via Trionfale and Via d'Avack on the ancient Via Veientana, define more precisely the landscape and the management of resources in the hands of the "gentes" distributed on the territory and variously linked by ties of kinship. The gentes dominated society, had control of economic activities, and distributed land among their "clientes," the lower elements of the social structure employed by aristocracy, who, at times, were also the beneficiaries of allocations of land for the remuneration of their services and loyalty.

The scene of navigation on the kantharos from Tomb 3 at Via d'Avack, added to other scenes that have been reconsidered based on archaeological evidence, allows us to identify the role of Veii, as well as other Etruscan metropolises, in Mediterranean trading, indicating the involvement of an established aristocracy in international relations.

The Discovery of Extraordinary Tombs: A New Picture of Orientalizing Veii
Francesca Boitani, Villa Giulia Etruscan National Museum, and *Orlando Cerasuolo*, Sapienza University of Rome

In the last decade, several excavations focused on the necropoleis of Veii and a reevaluation of some of the most important tomb groups already known was promoted. The new evidence from Grotta Gramiccia, Oliveto Grande, and Chigi Tumulus, shed light on the Orientalizing period of Veii (late eighth to early sixth centuries B.C.E.). Today, our knowledge is much broader and better articulated than before.

The first chamber tombs date back to the beginning of the seventh century B.C.E. Numerous tombs were painted, anticipating the earlier paintings at Cerveteri. The Tomb of the Roaring Lions (ca. 690 B.C.E.) is the earliest painted tomb ever discovered in Italy showing iconographic links with the Attic, Boeotian, and Euboean pottery painting. The paintings of this tomb, together with the slightly later Tomb of the Ducks, recall the *pictura linearis* that Pliny considered to be the earlier style developed at the end of the eighth century B.C.E. by Greeks.

At the same time, Veii pottery production developed a peculiar painted fine ware appreciated by the ruling elites. Some of the finest vases by the well-known

Narce Painter were recently found in the princely Tomb of the Roaring Lions and in the few others graves discovered nearby. The wealthy economy of Veii lured the Crane Painter, another craftsman who previously worked at Cerveteri. Furthermore, before the mid seventh century B.C.E. at Veii, the first bucchero production appeared. It is often associated with ceremonial items, such as those in the rich Monte Michele Tomb 5.

A great progression in the funerary architecture occurred with the adoption of monumental tumuli during the second half of the seventh century B.C.E. The Monte Aguzzo tomb was excavated in 1882 but only today has the funerary context been reconsidered. Some of the finds of that tomb were local fine vases imitating the Corinthian pottery, together with the well-known Olpe Chigi, for which new textual analysis stresses the ideological and aristocratic values defined in Corinth and adopted by the Etruscans at Veii.

The most recent discovery shed new light on the Veii of the Late Orientalizing period. The find was a sophisticated chamber tomb of one of the Oliveto Grande monumental tumuli located nearby, in an area that has never been methodically investigated. The three bipartite chambers of the tomb were themselves exceptional as well as thrilling 24 embossed bronze sheets. The floral motifs, hunting friezes, and unique protomes may all belong to the same lavish furniture, which we consider a funerary altar like a *dokanon*.

Veii and the Oriental World

Annette Rathje, SAXO Institute, University of Copenhagen

In recent years, new material has been uncovered from Veii that has important implications for our understanding of this city. Although we are gaining a better hold on the Iron Age society there, the impact from the Orient (broadly speaking) has not been thoroughly analyzed. In this paper, I present an overview of the evidence from different contexts to place this city at the forefront of the Orientalizing phenomenon.

We can no longer leave Veii neglected in the shadow of the coastal cities like Cerveteri, Tarquinia, and Vulci. Tomb paintings, sculpture, bronzes, ceramics, and other portable objects all bear witness to communication and sociopolitical dynamics between local and foreign cultures at the site.

Social identity was constructed through the ownership and use of foreign objects, and this material documentation of social practices illuminates early connectivity and cultural exchange on par with that at the coastal cities that have thus far outshone Veii.

Early Stone Sculpture and Ancestor Cult in Veii

Iefke van Kampen, Ager Veientanus Museum

On the basis of the latest research, we may state that in the field of funerary painting, as well as in the field of monumental sculpture, Veii has been the first Etruscan town to experiment these arts – in which later the lead was taken respectively by Tarquinia and Vulci. In the present paper, we will examine evidence

for stone sculpture in Veii, not at all as famous as its counterpart from Vulci, but maybe more intriguing because of its early dating. We will focus, in particular, on the statue of a princely figure on a throne coming from the Necropolis of Veii-Picazzano, which may be compared to similar evidence in the Near East, in particular in Northern-Syria.

After a short discussion of the geographical and chronological boundaries of the term "Northern-Syria" and after examining the trade routes that passed from the latter area towards the West, it appears that we may hypothesize the existence of a small group of oriental artists, architects and sculptors, at Veii at the beginning of the seventh c. B.C.E. Giovanni Colonna postulated a similar situation for Caere, envisaging a kind of "diaspora" towards the Northern towns near the sea and towards Bologna in a second phase. One of the aspects which remains still to be better defined is the relationship between Caere and Veii in this very early phase of contacts and commitments with Oriental craftsmen.

In Veii, the presence of immigrated oriental artists has also been assumed because of the production of certain decoration work in gold with filigree and granulated decoration techniques, well-known in the East, on jewels of local shape (Von Hase), which turns up for the first time in Etruscan art in an almost "perfect" way–in Veii.

Trying to interpret the evidence both in its original Oriental context as in the Etruscan ones, we may note that there are unexpected similarities in ideology, as regard to ancestor cult.

Cults and Sanctuaries at Etruscan Veii: A New Perspective on Local and Shared Traditions
Ingrid Edlund-Berry, The University of Texas at Austin

To many of us, the Portonaccio temple with the majestic terracotta statues of Apollo and other deities represents the epitome of an Etruscan sanctuary and its lavish decoration. And, seen in the context of neighboring Rome, whose Capitoline temple was adorned with statues made by the Veientine sculptor Vulca, Veii would seem to exemplify the use of monumental temple buildings adorned with architectural terracottas.

As demonstrated by old and new discoveries at Veii, the urban and extramural sanctuaries show a complex pattern that illustrates local cults and cult places, as well as interaction with neighbors and more distant communities.

Recent and ongoing explorations of the urban sites at Piazza D'Armi and Piano di Comunità illustrate Veii's role in the local production of architectural terracottas as well as its part in a network including other sites, such as Rome and Velletri. As discussed in Bartoloni et al., *Tetti di Terracotta* (Rome 2011), the multitude of roofs documented through tiles and architectural terracottas belong to a variety of buildings, some, but not all, representing sanctuaries.

Sanctuaries located along the edge of the city hill, some urban and some extramural, illustrate continuity of cult activities through a variety of votive offerings. The Campetti area is currently studied by Cerasuolo and Di Sarcina, and some results have been presented in a poster, *Depositi votivi e attività cultuali a Campetti area S-O* (Rome 2013).

With our present knowledge of the cults and sanctuaries at Veii, it is now possible to address the question of the role Veii played in the creation and development of local cult practices in relation to the documented interaction with its neighbors, including Rome, Caere, and Tarquinia. Although historically the Temple of Juno Regina may have constituted the main urban sanctuary at Veii, the preserved archaeological documentation suggests that it was the extramural Portonaccio temple that provided the continuity and space for sacrifices, votive offerings, and rituals of passage for inhabitants as well as visitors. Considering Veii's political role in the power struggles between the Etruscan cities and Rome culminating in 396 B.C.E., the city was best protected by conducting important business in a sanctuary that was controlled by Veii, but did not involve city life proper, instead protected by the smaller urban sanctuaries along the walls and at the gates.

SESSION 6E
Island Dynamics in the Bronze Age Aegean

CHAIR: *Natalie Abell*, University of Cincinnati

The "World" in a Cup: Diachronic Perspectives on Bronze Age Interaction Networks from the Dining Practices and Ceramic Fabrics of Ayia Irini, Kea
Jill Hilditch, University of Amsterdam, and *Evi Gorogianni*, University of Akron

Much like Hong Kong or Manhattan today, Ayia Irini on Kea seems to have acted in the Bronze Age as a gateway community capitalizing on resources of the nearby mainland, as well as traffic traveling the north–south trade routes in the Aegean. The cosmopolitan character of this community is evident in nearly all Bronze Age phases of the settlement, save the Mycenaean. John L. Caskey, the director of excavations at Ayia Irini, was keen to draw attention to the ambiguous ceramic tradition that, throughout the Bronze Age, typologically and stylistically straddles the Helladic, Minoan, and Cycladic spheres. This "international spirit" can easily be traced in the appearance of specific "Anatolianizing" jug and cup shapes on the dining tables of the so-called Kastri phase or the numerous cup and goblet shapes of the Helladic ceramic tradition, along with the characteristic "Minoanizing" dining repertoire of the late Middle Bronze to early Late Bronze periods. These ceramic assemblages, composed of both local vessels and imports (which acted as the physical manifestation of the multifarious connections of the island to the rest of the Aegean world), have long provided food for thought on the nature and function of networks of exchange and interaction within which the inhabitants of Ayia Irini were participating. Yet it is only recently that analytical studies have attempted to assess systematically the degree and nature of contact with other Bronze Age communities through the lens of ceramic technology.

Using a diachronic method of investigation on ceramic fabrics from across the Bronze Age, this paper introduces some preliminary observations on the ceramic imports and technological markers of the wider Aegean found at Ayia Irini, as well as their variation over time. More specifically, this paper offers a preliminary comparison of the unpublished results of analytical studies at Ayia Irini that

have focused on the Early Bronze Age and Middle Bronze Age/Late Bronze Age ceramic assemblages. This approach allows us to consider specific types of inter- actions between Ayia Irini and other Aegean communities and compare broader "-ization" phenomena within the Bronze Age Aegean.

Establishing a Middle Ground: Social Practice and Intercultural Interaction at Bronze Age Ayia Irini, Kea, Greece
Natalie Abell, University of Cincinnati

Recent studies of interaction in the Middle and Late Bronze Age Cyclades have been primarily concerned with explaining the hows and whys of "Minoanization," the process by which Cycladic islanders adopted aspects of Cretan culture. Al- though such studies have become increasingly theoretically sophisticated, culture change in the Bronze Age Cyclades is still often viewed as the result of unilateral action or influence from Crete, while diachronic analyses that emphasize variation between Cycladic communities are rare. This paper takes a different perspective, focusing on changes in both Minoanizing and non-Minoanizing ceramic produc- tion and consumption patterns at Ayia Irini on the island of Kea.

During the Middle Bronze Age and earlier Late Bronze Age, Ayia Irini was a major exchange hub that linked culturally distinct regions—the Cyclades, Crete, and mainland Greece. An analysis of changes in ceramics in use at Ayia Irini dur- ing this period suggests a complex picture of interaction and influence. Minoaniz- ing pottery and technology were employed at Ayia Irini already in the earlier Middle Bronze Age, a period usually considered to precede Minoanization. Dur- ing the height of Minoanization, Kean potters continued to manufacture non-Mi- noanizing vessels, while both Minoanizing and non-Minoanizing ceramics were imported from the Cyclades and mainland Greece. Ultimately, the local repertoire of drinking and eating vessels, although partially Minoanized, was in no period wholly comparable to Cretan or other Cycladic assemblages. It is argued that the idiosyncrasies of the Kean ceramic repertoire were not merely an inevitable con- sequence of the geographical situation of the site at the intersection of regional exchange networks. Rather, it is suggested that Ayia Irini was a kind of middle ground, where people from different cultural backgrounds were able to join in notionally shared drinking and eating practices and, perhaps, associated values. Participation in such events would have served to reinforce social bonds and to promote trade between locals and nonlocals. The adoption at Ayia Irini of Cretan ways of doing things, when situated in this context, may be viewed not just as a reaction to growing Cretan cultural or political power but as part of active Kean strategies to promote interaction with Cycladic islanders and mainlanders as well.

Minoan Sealings from Akrotiri, Thera: Matters of Neopalatial Administrative Structure and Hierarchy
Artemis Karnava, University of Vienna

One of the seminal finds in the excavations at the prehistoric settlement of Ak- rotiri in Thera are clay sealings sent from the island of Crete to Thera sometime

before the catastrophic final volcanic eruption ca. 1600 B.C.E. These sealings are of importance for a variety of reasons: They were imported, ready-made, from Crete, a fact that poses a problem with regard to the extent of authority of Minoan Crete to its neighboring areas, such as the Cycladic Islands; they also attest to the transport of numerous types of sealings between sites, but most belong to a type of sealings known as "flat-based"/document sealings. Furthermore, they present us with a rich iconographic repertory and a variety of seal images, some of which originate in sizeable golden rings and stone seals of excellent craftsmanship. Finally, they testify to the existence and use of the same big golden ring for stamping administrative sealings with some 50–100 years of difference, an unprecedented instance in Minoan evidence.

These sealings constitute a welcome addition to the numbers of Neopalatial sealings retrieved in various Cretan sites, and they shed new light on how the Minoan Neopalatial administrative structure was organized. In this respect, the functional and iconographical analysis of the sealings is helpful not only in understanding Akrotiri but mostly in retracing Minoan bureaucracy and administrative practices. This paper aims to present the facets of administrative structure and hierarchy that emerge from their ongoing study.

The Late Minoan IA Santorini (Thera) Eruption: The End of the Low Chronology
Felix Höflmayer, Oriental Institute of the University of Chicago

For decades, the Minoan Santorini (Thera) eruption and the early Late Bronze Age were the focus of chronological debates in Aegean Bronze Age archaeology. While for a long time many archaeologists (including this author) defended a low date for the eruption—ca. 1500 B.C.E., contemporary with the Egyptian early 18th Dynasty—scientists argued that based on radiocarbon evidence for short-lived samples from the settlement of Akrotiri, for an olive tree buried by the eruption, and for a sequence of short-lived samples from the site of Aegina Kolonna, the eruption date should be raised to the late 17th century B.C.E.

Since the 2009 conference on the absolute date of the Santorini eruption initiated by Walter Friedrich and Jan Heinemeier in Denmark, more evidence has come up that may finally settle the ongoing debate. This contribution reviews recently published radiocarbon results for the Egyptian historical chronology and for the key site of Tell el-Dab'a in the eastern Nile delta, as well as archaeological evidence for synchronizing the Aegean early Late Bronze Age with the Egyptian chronology. It is contended that there are no solid arguments that would stand against a late 17th-century B.C.E. date for the Minoan Santorini eruption.

An Unmoveable Feast? Reconsidering a Late Bronze Age Deposit at Phylakopi
Jason Earle, Institute for Aegean Prehistory

One aim of the 1974–1977 excavations at Phylakopi on Melos was to securely date the partially extant city wall of the Late Bronze Age town. To do so, trenches PLa and PK, which together cut a section through the fortifications, were opened. Excavation in PK revealed an important deposit (Pit 1) immediately beneath the

city wall. PK Pit 1 contained imported Mycenaean sherds in the LH IIIB1 style, thus providing a date for the deposit and a terminus post quem for construction of the city wall. While the excavators rightly emphasized the importance of this deposit for dating purposes, no further consideration was given to its character or significance in the final publication. PK Pit 1, however, deserves greater attention than it has received, as I demonstrate in this paper. First, the deposit provides insight into the nature of the local ceramic repertoire, which until now has been poorly documented. Second, the ceramic assemblage, composed of Mycenaean imports and local products, allows for renewed consideration of Mycenaeanization at Phylakopi. Third, the contents and location of the pit provoke consideration of its function. I argue that its contents are characteristic of a drinking ceremony or feast and that its location indicates a connection with the city wall. Similar deposits from the Bronze Age Aegean, together with evidence from the ancient Near East, Egypt, and historical Greece, support my interpretation of PK Pit 1 as the intentionally interred remains of a ceremony intended to propitiate the gods, ensure the strength of the city wall, and protect the town.

Ancestors and Territory in the Funerary Landscape of the Late Bronze Age Southeast Aegean
John T. Barnes, University of Missouri

The southeast Aegean, which includes the areas of the Dodecanese and coastal Caria, presents a geography well suited to the study of funerary landscapes. The region possesses numerous excavated cemeteries, while the living landscape of the region has been populated through surveys by Hope Simpson and Lazenby (*BSA* [1962] 154–75; [1970] 47–77; [1973] 127–179), and through more recent analysis by Georgiadis (*The South-Eastern Aegean in the Mycenaean Period* [Oxford 2003]). In light of this data, it is possible to compare the relative locations of proposed settlements and cemeteries from different areas to analyze the spatial interactions of the living and the dead within the southeast Aegean. Previous work by Georgiadis and Gallou (*OpAth* [2006–2007] 171–182) has emphasized the importance of water in local funerary rituals based on the regular orientation of cemeteries toward streams and the sea; however, the significance of a cemetery's location overlooking the agricultural catchment that supported the resident population has not yet been considered.

Based on the distribution of cemeteries and settlements on the islands of Rhodes, Kos, and Karpathos, I propose that the inhabitants of the region positioned cemeteries as visual markers of the territory of a settlement. Cemeteries are often located at a distance from the settlement on hills or prominences that overlook the agricultural plain that sustained the local population. From this position, the cemetery—and, by association, the ancestors of the corresponding populace—would have been a constantly visible marker of past generations throughout the agricultural catchment. Through funerary processions and subsequent rituals to and from the cemeteries, the dead were involved in the activities of the living population within the landscape. The act of siting cemeteries to overlook the approach to the agricultural catchment of the settlement distinguished the cemeteries as territorial markers, thereby differentiating the territory of one settlement (or group of

settlements) from another based on the local geography. In this way, the cemetery and the ancestors became the visible representations within the landscape of a given territory and its inhabitants. The decision of where to locate cemeteries in the Mycenaean southeast Aegean thus reflects an active engagement between the living populations and the deceased, which depended on the local landscape, its natural resources, its agricultural potential, and the societies of the living.

SESSION 6F
The Bronze Age Greek Mainland

CHAIR: *Sharon R. Stocker*, University of Cincinnati

How to Make an Early Helladic II Tile: The Evidence from Mitrou in East Lokris
Kyle A. Jazwa, Florida State University

Ceramic roof tiles from Early Helladic (EH) II contexts were first discovered at Lerna in the Argolid. Subsequent excavations have revealed similar EH II tiles at a number of sites and demonstrated the frequent association of tiles with important buildings. Fieldwork at Mitrou recovered 180 fragments of EH IIB tiles from two excavation trenches on the northeastern and eastern edges of the islet as well as from intensive surface survey and extensive documentation of the eastern and western seascarps of the islet. The best deposits come from stratified primary and secondary depositions of the tiles within the remains of two impressive EH IIB buildings. This paper presents an overview of the tiles and a study of their fabric, form, and depositional context. A study of the finger impressions and cutting and mold marks has revealed evidence for the manufacturing of the tiles, making it possible to reconstruct the steps of production from the collection of materials to the forming and firing.

Most EH IIB tiles from Mitrou, like those from elsewhere on the mainland, are rectangular and roughly flat in form. Because all the tiles were meant to be seen from a distance, small traces of manufacturing were left unsmoothed on their surface, including finger impressions, mold marks, and manual manipulation of corners. With such evidence, it is possible to reconstruct the *chaîne opératoire* and identify attributes of the passive, isochrestic style of the tiles. As demonstrated ethnographically and archaeologically, evidence of both is possibly indicative of the social and/or learning groups of the producers. Whereas the *chaîne opératoire* describes the step-by-step production sequence unique to a distinct learning tradition, isochrestic style refers to single (often) unseen aspects of production that are acculturated within a learning group and chosen from a pool of options even if other choices may result in an equal or even better functional fitness of the final product. It is clear that Mitrou participated in the elite arena of monumentalized, tile-roofed buildings found elsewhere in EH II Greece, such as at Thebes, Lerna, and Kolonna. However, manufacturing details of the tiles demonstrate the existence of a distinctly local group of craftsmen at Mitrou who were imitating and introducing innovations to this elite form of roofing.

Central Greek and Kean Interconnections During the Middle Bronze Age: The Evidence from Mitrou, East Lokris

Christopher M. Hale, University of Melbourne, Australia

Regular scholarship—particularly from D.M. Crego and J. Overbeck—concerning the role played by Ayia Irini on the island of Kea within the wider Middle Bronze Age Aegean trade networks has led to a number of evolving theories regarding the site's relationship with Aegina to the west, the rest of the Cyclades to the east, and central Greece to the northwest. However, while the presence of central Greek pottery at Ayia Irini is well known, Kean pottery in central Greece has thus far remained elusive, and the evidence in this region for any connection with Ayia Irini itself during the Middle Helladic has been lacking.

The Middle Helladic pottery from Mitrou, a coastal site in East Lokris on the northern Euboean Gulf recently excavated by the Mitrou Archaeological Project (a *synergasia* between the University of Tennessee and the 14th Ephorate of Prehistoric and Classical Antiquities at Lamia under the auspices of the American School of Classical Studies at Athens) has revealed a detailed and complete Middle Helladic ceramic sequence of seven phases and pottery from Kea is by far the most common import from the beginning of Middle Helladic II through to the end of the Middle Helladic. The assemblage contains one of the largest concentrations of Kean pottery clearly identified on the mainland and the first evidence of its kind in central Greece for a sustained and regular economic relationship with Kea. The changing frequency and diversity of imports over time at Mitrou confirm that the initiation of interaction with Kea acted as a catalyst that significantly increased trade along the Euboean Gulf and that also acted to link the Helladic, Aeginetan, and Cycladic networks for the first time during the Middle Bronze Age, laying the foundation for centuries of interaction and trade.

Metal Consumption and Production at Mitrou: Diachronic Trends from the Early Helladic Through the Protogeometric Periods

Nicholas G. Blackwell, American School of Classical Studies at Athens, and *Kerill O'Neill*, Colby College

Five years of excavation (2004–2008) on the islet of Mitrou in East Lokris have revealed roughly 1,600 years of continuous occupation from the middle of the third to the early first millennium B.C.E. Because of its long history, the site represents an ideal environment for assessing metallurgical trends and developments during central Greece's Bronze Age and Early Iron Age. At Mitrou, more than 260 metal items (e.g., copper/bronze, lead, gold, silver, iron) and metalworking objects (e.g., crucibles, molds, slag, casting debris, tuyères) have been recovered in domestic and mortuary contexts. While the metallurgical picture that emerges indicates modest production and consumption on a localized scale, the consistency of metal use and metalworking practices at the site makes for a rich study.

The preliminary assessment of the Mitrou metals is presented here through (1) a diachronic summary of the site's metal use and metallurgical activity, (2) a focused examination of the evidence during two periods of socioeconomic transition (Early Mycenaean and Postpalatial/Early Iron Age), and (3) evaluation of the objects

made of lead, the most common metal at Mitrou. While metalworking transpired in the Early to Middle Helladic periods, inhabitants at Mitrou had greater access to wealth by Late Helladic (LH) I–II, indicated by precious metals and a spike in lead and bronze objects. After a LH IIIA–B decline, metal use and simple metalworking procedures increased; lead and iron flourished in the Protogeometric period, maintaining trends evident in the LH IIIC era. Protogeometric bronze, however, is rare, restricted primarily to simple jewelry, while iron fulfills the role of the all-purpose metal.

The defining characteristic of the Mitrou assemblage is an abundance of lead, both in finished objects and production debris. The diversity of object types (e.g., clamps for pottery mending, fishing weights, spindlewhorls, a vessel fragment, a pendant, decorative pieces, raw material) and their regularity over the site's life span are impressive. In fact, lead clamps are the most ubiquitous metallic item, with 45 examples ranging from LH I until the end of the Protogeometric era. Because of the dearth of known lead sources in central Greece, one may hypothesize that lead was obtained from Laurion via the Euboean Gulf, though scientific analysis has not yet been conducted. If this supposition were accurate, Mitrou's strategic position along this waterway—even if only regional, down-the-line trading took place— would have enhanced its ability to acquire raw metals and finished products.

Burning Down the House: Settlement Structure and Social Change in Middle Helladic Greece

Rebecca Worsham, University of North Carolina at Chapel Hill

The recent upsurge in interest in Middle Helladic Greece has moved academic discussion beyond the traditional emphasis on the end of the period and the appearance of the shaft graves into a more nuanced, diachronic understanding of the social change leading to the rise of Mycenaean palace culture. The study of settlement organization and transformation over time is particularly well suited to this approach. Indeed, it is through deliberate manipulation of the structure of houses and settlements that Middle Helladic social groups seem to have effected and navigated the significant social, cultural, and political change that characterized the period.

I propose here that large-scale reorganization of the settlement structure is evident at a number of Middle Helladic sites, including notably Malthi, Aspis-Argos, and Pefkakia, and that this reorganization represented a strategy for broadening group categories from the level of the kinship group to the level of the settlement as a whole. The reconfiguration of the settlement was methodical and integrative, generally hinging on the addition of a series of structuring ring walls into which houses and storerooms were cohesively joined. In other words, the new settlement was planned and executed as a conceptual whole. The extent of this reorganization demanded the complete dismantlement of the previous, typically more organically organized settlement; at Malthi, this earlier habitation seems to have been deliberately razed to facilitate the new building project. This shift seems to have occurred as early as the Early Helladic III/Middle Helladic I transition at Pefkakia, and at Malthi perhaps as late as the start of Late Helladic I. I further argue that the use of settlement reorganization as a means of redefining the social group was

based on a cyclical treatment of the house, particularly visible at Early Helladic III Lerna, where certain domestic units appear to have been ritually destroyed and rebuilt. This treatment probably corresponded to regulation and periodic renewal of the family or kinship group that the house represented. The restructuring of the settlement as a whole, then, particularly in its integration of individual houses into the larger architectural framework of the ring wall(s), may have been an especially effective means of expanding social definitions of inclusion to encompass the entire settlement. That is, the settlement was treated as a house, symbolically functioning to assimilate disparate groups into one social unit. This conceptual shift from house to settlement-as-house was a fundamental precondition to the development of Mycenaean palace states.

Excavations at Eleon in Eastern Boeotia, 2013

Brendan Burke, University of Victoria, *Bryan E. Burns*, Wellesley College, and *Alexandra Charami*, 9th Ephorate of Prehistoric and Classical Antiquities

The Eastern Boeotia Archaeological Project continued its investigation of ancient Eleon, in the town of Arma, with six weeks of excavation and analysis in June and July 2013. The Greek-Canadian *synergasia* further revealed occupation from the Late Helladic (LH) IIIB and IIIC periods and uncovered evidence for cult activity at the site previously unknown from the Late Archaic/Early Classical periods.

The earliest intact feature now recovered at the site is a Middle Helladic cist tomb containing the intact skeleton of a child. Cutting into Early Bronze Age strata, this simple construction of clay slabs was found below a series of floor levels ranging from the Middle Helladic through LH IIIC periods.

Excavation in two sectors has expanded the architectural context for the LH IIIC levels at Eleon. In the northwest, we have revealed further evidence for the LH IIIC Early destruction level first uncovered in 2011. In the Southwest, LH IIIC Early is followed by a wide range of LH IIIC Middle material, including figural kraters, elaborate kalathoi, and animal figurines, suggesting the site had prominence during this time. This material is significant because it demonstrates the vitality and robustness of the postdestruction Bronze Age in this part of central Greece.

Isolated material from the Archaic period was found in several contexts, as indicated by female terracotta figurines and sixth-century B.C.E. ceramics. These are followed by dramatically greater numbers of classical figurines that were uncovered in association with hundreds of miniature votive cups and drinking vessels of fifth-century types. These female figures were found in a secondary context associated with the construction of a ramped entryway on the site's eastern boundary. This entrance was incorporated with the site's polygonal wall, though it was not all built in a single phase. It is clear that the entryway was rebuilt several times over the fifth century. The ramped surface was repaved numerous times, and a broad limestone threshold was replaced by a narrower doorway. In addition, new walls were built to reframe the roadway.

The multiple phases of the entrance all make use of earlier remains that refer back to the Mycenaean period. These walls are provisionally dated by a stone surface beneath the classical ramps and by their Cyclopean style. The later builders at Eleon engage with their Bronze Age past in a remarkably impressive way.

A Late Helladic IIIC Destruction Deposit from Ancient Eleon
Trevor Van Damme, Cotsen Institute of Archaeology, University of California, Los Angeles

The Eastern Boeotia Archaeological Project, a *synergasia* of the Canadian Institute in Greece and the 9th Ephorate of Prehistoric and Classical Antiquities, is currently conducting excavations on a multiperiod site in eastern Boeotia tentatively identified with the archaic/classical *kome* of Eleon. This site is mentioned by Herodotus and Strabo and identified with the Late Bronze Age site of *e-re-o-ni* recorded in the Linear B texts from Thebes. Although the total area revealed by these excavations remains small, the finds that have already emerged highlight Eleon's role as an important node in Late Bronze Age trade networks. While some earlier Mycenaean material has been excavated, along with a significant amount of archaic and classical votive material, most of the deposits uncovered so far are datable to the LH IIIC period. The depth and extent of these deposits attest to the continued importance of ancient Eleon in the aftermath of the destruction of the palatial center situated at Thebes in the LH IIIB2 period and offer new insights into Late Bronze Age Boeotia.

It is now clear that the site of ancient Eleon experienced several phases of occupation during the LH IIIC period, with evidence for habitation extending into LH IIIC Middle and perhaps even LH IIIC Late. In this paper, however, I present the results of a preliminary study of the material from a single well-documented fire destruction that occurred at the site of Eleon in the LH IIIC Early period. Because the LH IIIC period has been poorly attested at previously published Boeotian sites, my study is largely informed by parallels from Mycenae, Perati, and especially Lefkandi. On the basis of these parallels, I suggest a relative date for this destruction in a mature stage of the LH IIIC Early period, one roughly contemporary with deposits of phase 1b at Lefkandi and the tower phase at Mycenae. In addition to the ceramics, I discuss their find context, what appears to be a large domestic space functionally associated with a kitchen/dining area. I argue that the strong parallels between the LH IIIC material from ancient Eleon and Lefkandi are indicative of increased connectivity between these regions in the aftermath of the destruction of the palatial center at Thebes, supporting a more general reorientation of trade networks toward the Euboean Gulf during this period.

Imported Objects as Evidence for Change in the Scale of International Trade After the Mycenaean Collapse: A New Accounting
Sarah C. Murray, University of Notre Dame

Among scholars of the Greek Late Bronze and Early Iron Ages, it is widely believed that the volume and intensity of trade between Greece and the broader Mediterranean decreased substantially following the collapse of the Mycenaean palaces. This view is based primarily on the general impression that there are significantly fewer imported objects known from sites that date to the post-Mycenaean (LH IIIC and Protogeometric) periods than there are from sites dating to the Mycenaean period (LH IIIA and B). In this paper, I present a new, up-to-date, and precise accounting of the total number of imports known from the periods

spanning the Bronze to Iron Age transition and interrogate the value of these data for interpreting change in the scale of trade economies over time.

I begin by presenting the raw import evidence, which demonstrates that there are about half as many imported objects known from the postpalatial periods than there are from the Palatial period. I then consider how likely these figures are to serve as a roughly accurate proxy for the size of the trade economy in the ancient past. I argue that, while imported artifacts are a valuable category of evidence that may aid in our understanding of the organization and function of ancient trade, there are major distorting factors that make import counts highly unreliable as indicators of variation in trade volume or intensity across different cultural and temporal horizons. I conclude that import quantities alone cannot stand as adequate proof that trade after the Mycenaean period suffered a dramatic collapse.

SESSION 6G
The Culture of Water in the Roman World

CHAIR: *Kathleen Lynch*, University of Cincinnati

Somma-Vesuvian Ground Movements and the Water Supply of Pompeii and the Bay of Naples
Duncan Keenan-Jones, University of Illinois at Urbana-Champaign

Pompeii's water supply and distribution system are currently the focus of considerable debate. Probably originally instituted in the late first century B.C.E, the system was altered to keep it operating, albeit with reduced supply, in the decades before the eruption of Somma-Vesuvius in 79 C.E. The problem may have been the town's aqueduct. Of the aqueduct's three possible configurations, an aqueduct from Abella should be rejected because of a lack of archaeological remains, especially around the nexus of Ponte Tirone. The remains there of the Aqua Augusta, another possible source for Pompeii, reveal the negative impact of a minimum ground uplift of about 30 cm on the northern flanks of the volcano prior to the eruption, and then to deflation after the eruption, on water supply around the Bay of Naples, possibly including Pompeii. This analysis develops and refines a new method of reconstructing past vertical ground movements by their impact on shallow gradient, gravity-powered water systems. The archaeological remains show the ancient inhabitants of the Bay of Naples acting to preserve their water supply despite the drastic landscape changes that accompanied the eruption.

Water Works: Building the Aqua Traiana
Christina Triantafillou, University of Southampton

Trajan's contribution to the aqueduct system in Rome, the Aqua Traiana, was completed after the publication of Frontinus' *De aquis urbis romae*, our main source of information on Rome's aqueducts. However, for all its facts and figures, Frontinus' text largely omits discussion of the details of aqueduct construction. This

paper seeks to fill in the gaps left by Frontinus by recreating the construction timeline of the Aqua Traiana. Using the known archaeological findspots and the topography from the source sites from Lake Bracciano to the Janiculum Hill, a reconstruction of the course of the main conduit of the Aqua Traiana is presented. An analysis of the building techniques and materials in conjunction with accounts of later historical aqueduct construction enables a reconstruction of the planning and processes involved in the building of a structure with a site that stretched over 50 km. Unlike a typical building project, the aqueduct would not be built from the ground up on all areas of the site simultaneously. Instead, teams of workers would leapfrog along the entire building site, undertaking the most labor-intensive portions of construction (e.g., tunnels and large arcades) first to ensure completion. With this type of construction comes the need for multiple materials depots along the length of the aqueduct as well as the creation of roads and housing for workers in the more remote areas. The choice of building materials affected not only the supply-transport needs for the building project but also the number and types of workers employed on-site. Such a large and expansive building project required fine-detailed planning, the employment of significant numbers of men and animals, and a fair amount of money. The economic impact on Rome and the surrounding area cannot be underestimated. Supplying Rome with water was critical, but the process of construction was also a crucial and motivating factor for the initiation of such an expansive building project.

Things are Heating Up: Wall Heating in Late Antique Baths and Houses at Ostia
Ismini A. Miliaresis, American University of Rome

The Forum Baths at Ostia, near Rome, were constructed in the Antonine period (138–192 C.E.), and refurbished multiple times. In the fourth century C.E., an unusual alteration was made to the wall-heating system of one of the tepidaria (Room 20), or warm rooms. Concurrently, similarly unusual heating systems were installed in several Ostian houses. This paper examines the possible reasons for these changes in the baths, and it investigates the innovative incorporation of this wall-heating technology into Late Antique dwelling spaces at Ostia.

Roman baths were heated by elevating floors over a hypocaust and creating hollow spaces within the walls. Hot air from furnaces traveled through these voids, radiating energy up through the pavement and out through the surface of the walls. At Ostia, the hollow spaces in the walls were created using tubuli, or box tiles, which were laid out in vertical rows to completely cover the surface of the wall. In the fourth century, a wall was reconstructed in Room 20 of the Forum Baths, which was only faced with intermittent rows of tubuli separated by brick. This alteration would have significantly reduced the amount of heat contributed to the space while still requiring substantial effort to construct and install.

Becatti (*Kosmos: Studi sul mondo classico* [Rome 1987] 679–732) describes at least 13 Ostian houses equipped with heating systems in the fourth century, including the Domus del Tempio Rotondo and the Domus della Fortuna Annonaria. Only one or two rooms in each house were heated, and most employed the intermittent method of tubuli installation. The reasons for heating these specific rooms or these particular houses is not immediately clear. While it is possible, at least

in one instance in the Domus dei Dioscuri, that these rooms were converted into bathing facilities, most houses do not contain any direct evidence to suggest such a connection. The inclusions in the fabric and the size of the tubuli used in the Late Antique houses, however, do match those of the tubuli found in Room 20 of the Forum Baths. A closer investigation of the heated spaces is presented in this paper, including an evaluation of the types of rooms heated and possible functional modifications to the houses, revealing some possible reasons for the trend and clarifying the relationship of the heated houses to the baths.

Deciphering Libanius in the Architecture of Late Antique Summer Baths
Allyson McDavid, Institute of Fine Arts, New York University

The Hadrianic Baths of Aphrodisias, an extraordinary survival of thermal architecture of the High Imperial period, were vital to an ambitious program of urban monumentalization typical of the Roman East. The complex is remarkable for having preserved significant post-Hadrianic renovations that ensured its longevity through half a millennium of use, until its abandonment in the seventh century. Archaeological evidence for such modification reveals its transformation into a "summer bath"—a little-known though celebrated Late Antique bath type that developed exclusively over the fourth to sixth centuries. As one of only five such balneae for which remains exist in the empire, the reinvented Hadrianic Summer Baths of Aphrodisias provide rare insight into the articulation of this public bathing phenomenon.

This paper investigates the architectural decisions that defined the foundation's seasonal use. Though spoliated inscriptions and contemporary authors identify 17 summer baths in the Late Roman world, only the commentary of the fourth-century orator Libanius provides clues to its infrastructure and illustrates the revitalization of public bathing in late antiquity. Using his text in conjunction with the evidence of these five surviving baths in Sbeitla (Tunisia), Thuburbo Majus (Tunisia), Madaurus (Algeria), Cornus (Sardinia), and in particular Aphrodisias (Turkey), the architecture of summer baths may be more precisely defined.

Small Bathing Complexes in Cilicia Tracheia (Southern Anatolia) and the So-Called "Little Baths" of Elaiussa Sebaste
Emanuele Casagrande Cicci, "Sapienza" University of Rome

Cilicia Tracheia, located in the southeastern part of Anatolia, is one of the less studied ancient Roman provinces. In spite of this, settlements have been discovered throughout the region, and the archaeological investigation of some of the region's cities, primarily those situated along the coast, is increasing our knowledge about broader historical, architectural, and social developments in Cilicia under Roman rule.

This paper presents the preliminary results of an ongoing study on bath complexes in Cilicia and is focused on a reassessment of a few examples of baths of small size. Starting with the analysis of a bath complex located at Elaiussa Sebaste, discovered and partially excavated in 2012 by archaeologists from the "Sapienza"

University of Rome, it is possible to reexamine similar monuments throughout Cilicia. These buildings show evidence of the architectural influence of Rome while retaining elements that reflect regional conventions. The small bathing complexes of Cilicia Tracheia generally display a simple plan with the bath block proper, service rooms, and water reservoirs. The simple row arrangement and the retrograde internal circulation is specific to the Late Republican and Early Imperial baths of Italy. This organization is most commonly seen in the Campanian region and reflects the strict relationship between Rome and the province. Specific elements of the plan, architectural apparatus, and placement of the "Little Baths" of Elaiussa Sebaste allow us to draw a number of conclusions about its chronology and different phases of use. Archaeological evidence suggests that the building was constructed during the first to second century C.E. and abandoned during the sixth to seventh century C.E.

Together with a thorough presentation of the architecture, layout, and chronology of these buildings, this paper focuses on the metrology of specific elements, including the bricks and tiles. Further, comparisons between the Little Baths of Elaiussa Sebaste and the small baths known in the region, such as those at Korykos, Anemourion, Korasion, and more widely those of the Anatolian Peninsula, highlight the peculiarities of this type of building in Cilicia Tracheia.

The Spaces In-Between: Ancient Texts and Small Finds on Roman Bathing Culture
Alissa M. Whitmore, University of Iowa

Ancient authors and bathhouse graffiti and art paint a vivid picture of life in Roman public baths, but these sources, limited by the interests and biases of their creators, provide an incomplete understanding of this important social space. Artifacts found within bathing spaces offer evidence for additional activities that are absent from other sources, but this data set is also restricted by ancient behaviors, archaeological preservation, and taphonomic processes. As a result, it is necessary to incorporate and compare all these sources to acquire the most accurate and complete understanding of ancient activities and behaviors in Roman public baths.

I begin this paper by analyzing ancient texts, graffiti, and art for activities and related material culture that these sources locate in public baths. Next, I turn to the archaeological record, focusing on artifacts from 14 baths from Italy, the United Kingdom, Portugal, Switzerland, and Germany ranging in date from the second century B.C.E. to the fourth century C.E. In an effort to isolate objects that were most likely used while the baths were open, I concentrate on small finds from rapidly abandoned baths, such as those in Pompeii and Herculaneum, and those found in bathhouse drains.

By identifying the most commonly recovered artifacts, it is possible to obtain a "typical" bathhouse finds assemblage, which reveals the activities, including eating and drinking, adornment, and bathing and grooming, most often represented in the archaeological record of baths. Other less common, but in no way isolated, finds and activities also appear, such as cloth working, warding away evil spirits, and medical procedures. Just as there are some behaviors demonstrated only by small finds, it is obvious that some artifacts and activities expected from ancient

sources rarely appear in the archaeological record. While some of these absences can be attributed to taphonomic processes and the caprices of the archaeological record, others may provide further evidence for ancient behaviors, such as recycling of broken materials, regular cleaning of the baths, and transport of metal bathing instruments from home. It is only by joining these rich but flawed data sets that we can uncover a more thorough understanding not only of Roman bathing culture, but also of the ancient behaviors and archaeological processes affecting the objects discovered in Roman public baths.

SESSION 6H
Current Approaches in Heritage Policy and Conservation

CHAIR: *Nancy Wilkie*, Carleton College

Policies of Place: Diachronic Archaeological Survey and the Politics of World Heritage Site Designation in the Marmara Lake Basin, Western Turkey
Christina Luke, Boston University

On 15 April 2013, the World Heritage Centre at UNESCO placed the "Ancient City of Sardis and the Tumuli of Bin Tepe" on the tentative list of sites for Turkey. In so doing, UNESCO accepted the Turkish Ministry of Culture and Tourism's privileging of a specific monumental and Lydian past as worthy of World Heritage Site (WHS) designation. WHS designation brings with it a host of issues relating to sustainable development that would be better served by a broader, more inclusive approach to understanding cultural and living landscapes. Nine years of archaeological survey and four years of ethnographic work in the Marmara Lake basin have demonstrated that Sardis and Bin Tepe were—and continue to be—deeply embroiled in local human and natural narratives that transcend chronological periods. A mixed designation (cultural and natural) based on the paradigm of cultural landscapes would highlight the importance of the natural wetlands of the Gediz, ancient Hermus, and Lake Marmara (the ancient Gygaean Lake). Studies of the importance of these bodies of water help us understand change over time, including the primary reason for the construction of Iron Age monuments to celebrate the conceptual, ancestral Bronze Age landscapes, the seasonal migrations of Yörük tribes, and the mainstay of Ottoman-period estates and towns. What is more, the legacies of recent development programs, notably agricultural initiatives and water-control systems, and environmental polices, such as the 2009 designation of the Lake an Important Rare Bird (IBA) (endorsed by the International Union for Conservation of Nature), continue to be negotiated by contemporary communities who confront the realities of landscape management daily. This paper explores the unprecedented value of diachronic archaeological survey and ethnographic research to understand the potential for future wise use through integrated cultural, natural, and agricultural land-use policies.

One Policy, One Thousand Mounds: A Comparison of Survey Methods in Bin Tepe, Western Turkey, Under New Turkish Collection Policies

Bradley M. Sekedat, Koç University Research Center for Anatolian Civilizations, *Christina Luke*, Boston University, and *Christopher H. Roosevelt*, Boston University

In the spring of 2013, the Turkish Ministry of Culture and Tourism issued a new policy restricting the collection of surface assemblages by archaeological survey projects. This regulation came as the Central Lydia Archaeological Survey (CLAS) planned its 2013 season, including a resampling of the well-known area of Bin Tepe (Turkish for a "Thousand Mounds"), which was earlier surveyed in the first season of the project in 2005. While many in the Turkish archaeological community consider how new collection policies will affect archaeological practice, CLAS elected to utilize the 2013 season as one of broad methodological comparison to determine how changing archaeological practice and changing collection policies affect survey results. The decision to conduct this study within Bin Tepe was in part motivated by its recent appointment to the tentative list of World Heritage Sites. Such an appointment reflects a growing trend in Turkey to identify, recognize, and promote sites of cultural significance. Our findings explore how such efforts are influenced by the new collection policy. In this paper, we present the results of the 2013 survey of Bin Tepe as they pertain to shifting survey methodologies, demonstrating that the ability to investigate a single region with multiple methodologies yields rich narratives.

The Parrhasian Heritage Park of the Peloponnese

David Gilman Romano, University of Arizona, *Mary E. Voyatzis*, University of Arizona, *Costas Cassios*, National Technical University of Athens, *Mark Davison*, Oregon State Parks, *Nick Stapp*, University of Arizona, *Ximena Valle*, Temple University, and *Nota Pantzou*, University of Patras

The first large-scale heritage park in Greece is currently being created in the Peloponnese as a result of a successful collaboration between Greek civic officials, government agencies, park planners, architects, forestry and environmental engineers, geologists, and archaeologists. Covering an area of approximately 550 km^2 in the west-central region of the Peloponnese, the park was originally proposed by the Mount Lykaion Excavation and Survey Project in 2004 to incorporate parts of western Arcadia, southeastern Elis, and northern Messenia. The goal is to preserve and protect this area of cultural significance, outstanding natural beauty, and important archaeological sites while encouraging local communities to continue living and working within the protected landscape. The name of the park, "Parrhasian," refers to a Homeric name, "Parrhasia," associated with a part of this region. This largely mountainous area of Greece also includes aspects of two important rivers, the Alpheios and the Neda. Meetings have been held in Greece over the last few years, resulting in the support of village leaders, local societies, mayors, governors, and the Ministry of Culture. Colleagues in the 39th Ephoreia of Prehistoric and Classical Antiquities in Tripolis have joined to collaborate in this initiative. Portions of three hiking trails have already been opened: the Trail of Zeus and the Trail of Pan, both near Mount Lykaion, and the Trail of Aghia

Theodora near Vastas. More trails are being planned with the goal of creating a linked network throughout the park to encourage responsible tourism and recreation. There are nine known ancient sanctuaries and five known ancient cities within the limits of the park, and one of the goals is to create a series of trails to link each one of these ancient sites with a local village or town as well as with one another. Close to the topographical center of the park is the Temple of Apollo Epikourios at Bassai, which is already a UNESCO World Heritage designated site. During the past three summers, the Parrhasian Heritage Park Field School, as a part of the Mount Lykaion Excavation and Survey Project, has taken place. Greek and American architecture, archaeology, cultural heritage management, landscape architecture, and geology students have been learning skills needed to create a European heritage park.

Modern Landscape Transformation in East Crete and Its Negative Impact on Cultural and Environmental Heritage: An Archaeological Approach with the Use of Aerial Imagery and Geospatial Data

Konstantinos Chalikias, University of Athens, and *Gianluca Cantoro*, GeoSat ReSeArch Lab—IMS/Forth

The following paper examines how the cultural landscape of the Ierapetra area, east Crete, has been massively affected by recent large-scale greenhouse agriculture. Even though the greenhouse sector contributed to the economic rise of the small coastal town of Ierapetra during the past 40 years, it had one enormous negative impact on the cultural and environmental heritage of the region. Archaeological sites and monuments came under threat when hundreds of hills and slopes were leveled for the construction of new greenhouses. Archival vertical, modern oblique, and satellite imagery (some of which is freely accessible on the web), in combination with geospatial data, were employed to map recent landscape modification in the region and to better understand land-use patterns in the coastal plain of Ierapetra. The project allowed us to extract useful data that helped us assess the vulnerability of endangered cultural sites in the area and propose solutions for their future protection.

Mudbrick Conservation Strategy in Tell Timai, Egypt

Marta Lorenzon, University of Edinburgh

The aim of this paper is to offer preliminary results of the mudbrick conservation project began in Tell Timai during the June to July 2013 season. Archaeological conservation has been considered more and more as an indispensable tool of archaeological fieldwork.

Tell Timai is a unique and outstanding example of Graeco-Roman mudbrick architecture, and it represents one of the best-preserved sites in the Egyptian Delta. Preservation of the architecture will contribute greatly to the study of Graeco-Roman-Egyptian life. The mudbrick architecture is rapidly deteriorating because of natural erosion and human encroachment.

The areas analyzed and conserved during the 2013 season included, an outstanding mudbrick building, Building 1, which has a preserved height of 12 m, and a open area officially known as Street 1. Building 1 still preserves part of a window, a spiral staircase to allow access to the second and third floors, and monumental walls that have a thickness of 7 m. Street 1 includes a collection of structures on both sides, probably residential units, whose last phase dates to the Late Roman period. Three insulae flanked the street on the south, west, and east sides, where additional street systems expand east.

The walls as analyzed in June 2013 were greatly at risk of collapse because of natural elements, human interaction, neglect, and animal interaction. The buildings showed a series of deterioration issues, such as spalling, material loss, mudbrick crumbling and fissuring, leading to a more extensive failure of parts of the structures.

The methodology employed to preserve the archaeological data is based on the use of traditional materials proved in the past to be effective in preserving mudbrick architecture. During the 2013 season, we stabilized the situation by reconstructing damaged parts of original mudbrick walls to stop the spalling and counteract the soil pressures, as well as by mortar injection and plastering with traditional mud plaster.

One of the main highlights of the conservation project was the ability to create our own mudbricks to support the old wall. In doing so, we had the opportunity to experiment with the same mudbrick chain of production used in the last four millennia in Egypt, testing the difficulties in creating the right sedimental composition and then researching the best construction technique. The ability to preserve the standing mudbrick architecture is essential for the scientific data and also for touristic and educational purposes.

Conservation of the Ancient Egyptian Monuments: Managing Environmental Impact and Human Misuse

Khaled Aly Abdelhady, Benha University in Cairo

For thousands of years, the Egyptian monuments stood challenging time; in the last few decades, deterioration of many ancient Egyptian monuments has increased; such unsafe conditions are threatening entire monuments or at least significant parts of them. The environmental impact, the rise of shallow groundwater level, and human misuse are considered to be the factors that contribute to the deterioration of ancient Egyptian monuments. Most of the important ancient Egyptian monuments are now on the top of the list of endangered monuments.

The Saqqara step pyramid is considered one of the oldest stone structures and the first royal tomb in history; now it is suffering from the collapse of some internal and external parts. In Karnak and Luxor, the most important temples of ancient Egypt, numerous inscriptions left by visitors damage the monuments, and increasingly damp conditions are deteriorating the wall painting.

In this paper, we document some aspects of the deterioration of ancient Egyptian monuments and present a survey of facts and studies behind it. We also suggest a new site-management system. The new system uses nontraditional analysis of routine procedures carried out by local authorities to conserve and save Egyptian

monuments at risk; documenting, monitoring, and controlling the sites and some items used in the smart buildings are the main elements of the suggested site-management system, which gives early indication of endangerment and human misuse.

Pompeii: Restoration History and Future

Albrecht Matthaei, Roma Tre University/M4Human-Marie Curie, and *Ralf Kilian*, Fraunhofer IBP

No other archaeological site has figured in newspapers headlines as often as Pompeii has in the past few years. The declining state of many buildings, endangered by neglect and environmental conditions, has prompted calls for urgent restoration.

However, to proceed in an efficient and effective manner, we need a history of Pompeii's restoration for the past two centuries. It is essential to know what methods have worked and which ones have not. A group of European research institutions (Fraunhofer Gesellschaft, Technische Universität of Munich, Ludwig Maximilians Universität of Munich, Deutsches Archaeologisches Institut in Rome, Università di Pisa, together with the Soprintendenza Speciale per i Beni archeologici di Napoli e Pompei and the International Centre for the Study of the Preservation and Restoration of Cultural Property tied to UNESCO) are currently collaborating to set up a new conservation project, the Pompeii Sustainable Preservation Project (PSPP). This project employs an interdisciplinary approach by combining work in archaeology, restoration, and the development of new materials for sustainable conservation while also taking into account the history of the architecture.

In this paper, we discuss the history of restoration in Pompeii, which is essential for those who want to help restore this site as well as for any multidisciplinary project. Moreover, we intend to present the plan and structure of the project, for which we are currently conducting a fundraising campaign, and to illustrate our methodology and general aims. The idea behind the PSPP is to help preserve Pompeii by completely restoring one of its insulae, to be chosen with the Soprintendenza through the development and the application of new methods and materials for long-term, sustainable conservation. This "holistic" approach to restoration allows us to consider every detail, from the smallest finding to the most beautiful fresco, with attention to the postexcavation history of the buildings. These objectives will be combined with the training of top students in restoration and archaeology, thus giving another long-lasting contribution to these fields and the preservation of world cultural heritage.

SESSION 6I
Cult Ritual and Sacrifice in the Greek World

CHAIR: *Michael Laughy*, Washington & Lee University

Investigating the Twice-Wrapped Fat of Ancient Greek Sacrifice
Jacob Morton, University of Pennsylvania

This paper discusses my research through experimental archaeology into what kind of fat was used to wrap the thighbones in Homeric and classical sacrifice.

An important element of the ritual of sacrifice in Homer is the burning of thighbones twice wrapped in fat (*Il*. 1.460–61, 2.423–24; *Od*. 3.457–58, 12.361–62). We know from later texts (Aeschylus, Sophocles, Aristophanes, Middle and New Comic poets) that this practice continued in the Classical period. That thighbones were burned on altars is archaeologically attested in excavations of sanctuaries and altars (e.g., the ash altar on Mount Lykaion and the altar of Aphrodite Ourania in Athens); however, we know very little about the "twice-wrapped fat" around these thighbones. To know which fat was used to wrap the thighbones for sacrifice is important for our understanding of the realia of sacrifice, including ancient butchery practices and the sensory experience for direct participants, such as the priests and butchers.

There is a limited body of textual and iconographic evidence for this fat, and scholars have interpreted it to mean the layer of fat hanging below the stomach, called the omentum. However, this conclusion is based heavily on one corrupted fragment of a text by Euboulos, a fourth century Athenian comic poet, and ambiguous vase imagery. Believing that this evidence is less conclusive than it has been taken to be up to this point, I approached this question in a new way. I used experimental archaeology to explore two possibilities: first, following the current scholarly consensus, that the fat was the omentum; second, exploring my own hypothesis, that the layer of fat from the top of the thigh itself was used to wrap the thighbone.

I removed the thigh bones from whole lamb legs, wrapped them in either omentum, thigh fat, or both, and then burned them over a wood fire imitating the altars pictured in vase paintings. I examined and compared the behavior of the omentum and the fat cap of the thigh during each of these stages.

Based on a data set of 25 fat-wrapped thighbones, I conclude that the omentum should still be included as a possibility for the fat in question—however, for different reasons than have previously been cited. More importantly, I argue that the evidence indicates that the fat cap of the thigh should be included as a possibility for the fat twice-wrapped around the thighbones in ancient sacrifice.

Tracing Identity Through Diet and Sacrifice: The Case of the Graeco-Punic Cult of Demeter at Selinunte
Andrew Farinholt Ward, Institute of Fine Arts, New York University

While the intersection of dietary habits and ritual in the ancient Mediterranean has been a popular topic at a theoretical level, the resultant paradigm that what is

sacrificed is also eaten, and can thus be found in the osteological record, has yet to be applied sufficiently to specific archaeological questions. Such a question arises in the history of the Sicilian site of Selinunte, a colony of Megara and Megara Hyblaea founded in the seventh century B.C.E. and conquered by the Carthaginians in 409 B.C.E. Scholarship is divided on the nature of the city following this catastrophic event: was the city entirely Punic, or was the post-409 B.C.E. population more heterogeneous?

One unexamined avenue of interpretation arises from the intersection of diet and ritual and how ritual can be understood as an indicator of cultural identity. Writers such as Porphyry of Tyre as well as epigraphic evidence describe an abstention from pork in Phoenicia, and the practice was not abandoned in the west by the Carthaginians. Although the suggestion that the Carthaginians abstained entirely from pork has been disproved through archaeological study, a preponderance of evidence suggests that the animal was considered unclean and rarely sacrificed.

At Selinunte after 409 B.C.E., there were two active sanctuaries associated with Demeter, a key cult for both Greeks and Punics alike. One is at the shrine of Demeter Malophoros, the other at "Temple B" on the acropolis. Temple B is problematic for those considering the site to be entirely Punic: it is a thoroughly Greek prostyle temple built on a supposedly Punic site. Excavations at Temple B conducted by New York University have revealed that the main sacrificial victims are piglets, sacrificed in keeping with a uniquely Greek cult.

By contrast, during the excavation of the sanctuary of Demeter Malophoros, a high proportion of burned goat and sheep bones were found, especially in the later levels, with little evidence of the sacrifice of pigs. While this anomaly has been associated with the *epiklesis* of the goddess, it is instead possible to see the sanctuary as a cult of Demeter catering to a Punic-Phoenician populace, in tandem with the cult of Temple B. In this way, the question of the nature of Hellenistic Selinunte can be answered by using traditional interpretive frameworks, such as building technique, while also considering a practice at the core of ancient life: sacrifice and the diet that is expressed through it.

The Mechanics of Religious Appropriation: Attic Healing Cults
Jessica Lamont, Johns Hopkins University

The late fifth century B.C.E. witnessed a flurry of activity within the Athenian religious sphere. Particularly striking is the appearance of divinities concerned with health, best exemplified by the Attic healing cults of Asklepios and Amphiaraos. This study addresses the questions of when and how these healers were absorbed into the Attic pantheon, focusing on two understudied sanctuaries: the Asklepieion near Zea Harbor in the Piraeus and the Amphiareion at Oropos.

First, I propose new dating criteria for the foundation of both sanctuaries. A unique votive relief from the Piraeus Asklepieion, now housed in Copenhagen (NCG#1430), interpreted together with the text and iconography of the famous Telemachos monument (*IG* 2^2 4960), suggests that the Piraeus Asklepieion was established prior to the city Asklepieion, in 421 B.C.E. Furthermore, a reexamination of Petrakos' work at Oropos suggests that the Amphiareion's

earliest architectural features—two small altars, the so-called theater of the altar, and the small temple—developed soon after, and likely in response to, the new Attic Asklepieia (Ὁ Ὠροπὸς καὶ τὸ Ἱερὸν τοῦ Ἀμφιαράου [Athens 1968] 67–8.)

Both sanctuaries also illuminate the ways in which new, foreign healing cults were absorbed into the Athenian religious matrix. By examining sanctuary architecture and material culture from early excavation reports, I reconstruct two methods by which these deities were made accessible to Athenian worshipers. First, Asklepios and Amphiaraos, newcomers lacking mythological ties to Athens, were situated alongside older, long-worshiped Attic deities in their Piraeus and Oropos sanctuaries, respectively. Worshipers were required to make multiple sacrifices, both to the new healers and to older Athenian divinities on the same, communal altar (*IG* 2² 47, 4962; Paus. 1.34.3; K. von Eickstedt, *Das Asklepieion im Piraeus* [Athens 2001]) By sacrificing to the non-Attic healers along with older Athenian deities such as Athena, Artemis, Hestia, and Apollo—*sunnaoi theoi*—worshipers were ritualistically integrating the new cults into the Attic pantheon. Another method by which these cults gained popularity was through their employment of personifications of health and hygiene. Their veritable entourage featured Hygieia, Iaso, and Panacea, embodiments of the healing benefits offered by the new cults. These female personifications, "healing," "remedy," and "cure-all," appear along with Asklepios at Piraeus and Amphiaraos at Oropos in freestanding sculpture, votive reliefs, altars, medical instruments, and even sanctuary admission tokens. Taken together with shared sacrifices, the methods by which non-Attic deities gained popularity in Athens emerge, shedding light on the murky mechanisms of cult appropriation.

The Use-Life of the Anatomical Votives from the Asklepieion at Corinth

Ioulia Tzonou-Herbst, American School of Classical Studies at Athens

More than 900 terracotta anatomical votives were excavated in seven distinct accumulations within the temenos of the sanctuary of Asklepios in Corinth. The votives include life-sized body parts, such as heads, torsos, limbs, genitalia, and other anatomical representations. Associated pottery, lamps, and coins published in 1951 place the deposition between the last quarter of the fifth and the end of the fourth century B.C.E. My renewed investigation into the excavation notebooks reconsiders the chronology of this deposition and questions the change in cult practices at the sanctuary. The deposits contain materials that can be dated into the third and even the second century B.C.E. Consequently, I address whether the change in cult was indeed effected in the Hellenistic period or whether it was introduced by the Romans.

Also investigated is the manner of deposition of the votives. Evaluation of certain criteria leads to the conclusion that the deposits run the gamut from ritual burial to random discard and intentional reuse. The collection of the votives in groups and their deposition within the sacred boundaries of the temenos certainly indicate awareness of the sanctity of the objects. Other materials deposited with them, miniature votive pottery and pottery inscribed with Asklepios' and Podalirios' names, corroborate that the groups originated from sacred assemblages. Additionally, their differential preservation, from intact specimens to very small

fragments, indicates disparity in their depositional histories. Inclusion in leveling fills and packing fills against foundations can be seen as reuse of the votives as purely useful building materials. Last but not least, votives randomly excavated throughout the site may indicate discard by the original owners or disturbance by subsequent uses of the space.

Identification and recontextualization of the votive assemblages suggest a use-life in which the votives were transformed from objects imbued with sacredness to those discarded in trash. They were significant enough to be buried within the sacred limits of the temenos, but their burial does not always signify reverence, since some seem to have been dumped in convenient holes with no sacred connotations.

Displacing the Gods: Household Ritual in Tetrarchic Corinth
Reema R. Habib, Florida State University

A previously unpublished deposit found north of the Nezi Field in Corinth can help elucidate provincial Roman household religion during the Tetrarchic period in Greece. The deposit, datable to the late third through early fourth centuries C.E., was situated next to a threshold within a Roman domus just south of the forum, and it contained a number of fine colorless glass tablewares, fragments of painted plaster, an iron knife handle, a figured terracotta mold, a few pieces of Late Roman pottery, and a small marble bust of a young male consistent with depictions of lares. All the objects within the deposit display evidence of fire damage, which is most notably seen on the marble bust, and it seems that the burning occurred as a part of the ritual depository act. The Tetrarchic period is not often detected stratigraphically within Greece, although a few notable deposits of that date have been found at Corinth and the Athenian Agora. This deposit thus offers additional information about Roman household ritual in the eastern provinces during a crucial period of religious and societal transition.

The deposit appears to represent the ritualized deconsecration of sacred household objects associated with the worship of the lares. The marble head served as the focus of the ritual of sacred disposal, and its relatively early stylistic date (the first century C.E.) implies that the sculpture and its contemporaneous glasswares remained in use until at least the third century C.E., when they ceased to be relevant to the owner of the domus. The stratigraphy of the ritual indicates that both familiar and unusual elements were observed in the burial of the lar, the latter of which may be seen most clearly in the selection of only colorless glass vessels for inclusion in the deposit. Certain aspects of Roman votive tradition were also maintained, as, with the exception of the marble lar, primarily incomplete objects were chosen for deposition. The later burial of the stylistically earlier lar is also consistent with the provincial patterns of use in Germanic and Gaulish lararia detected by Kaufmann-Heinimann in *Götter und Lararien aus Augusta Raurica* (Augst 1998). This act of deposition possibly reflects changes in local religion and society, perhaps in response to the onset of early Christian influence from the east.

SESSION 7A: Colloquium
Protecting Archaeology in Conflict Zones

ORGANIZER: *Laura A. Childs*, Cultural Heritage by AIA-Military Panel

Colloquium Overview Statement

The purpose of this colloquium is to discuss the problems, techniques, and opportunities for protecting and conserving archaeological sites and artifacts endangered by warfare and revolutions. The last decade of conflict that has spread across southwest Asia, the Middle East, and North Africa has endangered many sites, museums, and archives. However, preservation of such sites and materials is sometimes possible. Site directors, curators, and archaeologists who work on heritage preservation discuss their methods and means of saving archaeology. Other papers describe their capacity-building programs and how they can help site directors, museums, and courageous local citizens prepare for site protection. Audience members will take away a better understanding of how to protect a dig or museum in such a situation and know which organizations are available to help.

DISCUSSANTS: *C. Brian Rose*, University Museum of Archaeology and Anthropology, University of Pennsylvania, and *Fredrik Hiebert*, National Geographic

Planning for Cultural Property Protection in Conflict Zones: A View from Fort Drum
Laurie Rush, Cultural Resources Manager at Fort Drum, New York

An archaeologist who works in support of one of the most deployed divisions in the United States Army has an opportunity to develop a unique perspective on the protection of archaeological sites and cultural property in conflict zones. Protection of archaeology and completion of a successful military mission are not mutually exclusive undertakings. In fact, experienced military leaders recognize that the ability to identify and respect cultural features in the landscape is often a critical asset for working successfully with members of host-nation populations. These military personnel rely on archaeological expertise for mapping of cultural property for operations planning, for education and awareness, and for development of behavioral and engineering solutions that will enable military personnel to avoid damage to and perhaps even offer protection for an archaeological site placed at risk during the course of complex and prolonged conflicts.

Cultural Property Protection Training and the U.S. Military: Recent Initiatives of the Combatant Command Cultural Heritage Action Group (CCHAG)
James A. Zeidler, Colorado State University

The Combatant Command Cultural Heritage Action Group (CCHAG) is a group of military personnel, cultural-property experts, and archaeologists that work closely with the U.S. Combatant Commands to provide advice and support

on cultural-property protection issues within the regions and countries where the Combatant Command deploys. While the CCHAG has been primarily supporting Central Command (Near East and southwest Asia), it has recently begun to support Southern Command and Pacific Command. Types of support include training programs for military personnel about the protection of cultural heritage, development of a variety of cultural-heritage awareness products (e.g., playing cards, Soldier Field Cards, posters, country profiles, and an informational web portal [www.cchag.org]), development of maps and remote sensing imagery pinpointing the location of sensitive cultural properties, and advice to senior commanders about working with host nations. The CCHAG is also spearheading a program of CPP curriculum for ROTC units nationwide and is collaborating with the AIA, the SAA, and the SHA in the development of Subject Matter Expert (SME) lectures on archaeology for ROTC units.

Lessons Learned from Libya
Susan Kane, Oberlin College

The Libyan conflict caused significant damage to cultural property, but the damage would have been much worse if the national and international organizations had not worked together to protect that heritage. The lessons learned during and after the conflict provide valuable guidance to the efforts to protect cultural property in other conflicts.

Monitoring Damage to Archaeological Sites, Monuments, and Museums in the Wake of the Syrian Civil War
Jesse Casana, University of Arkansas

Since the outset of Syria's current civil war in 2011, the many archaeological projects that once flourished in the country have come to a complete halt. Scattered reports from journalists and social media suggest that looting is now widespread and that many of Syria's monuments and museums are suffering damage as a result of ongoing armed conflict. Yet the inaccessibility of nearly all of Syria to both archaeologists and antiquities officials makes assessment of the situation all but impossible. This paper presents an overview of what is known and suspected regarding the Syrian civil war's impact on cultural heritage, as well as the results of an effort to monitor site destruction and looting using satellite remote sensing.

Smithsonian Institution's Disaster Response for Culture Programs
Corine Wegener, Smithsonian Institution

The Smithsonian's Disaster Response for Culture programs offer support for countries whose culture is in danger as a result of humanitarian crises, war, and natural disasters. This critical program is described and some examples are given of the Smithsonian's efforts to preserve cultural heritage endangered in war zones.

Timbuktu's Historical Traditions of Cultural Preservation
Douglas P. Park, Rice University

This paper presents an overview of how Timbuktu's local populations have protected their cultural patrimony over the past several centuries. It begins with the looting of Timbuktu by Moroccan troops in 1591. It then covers several periods of conflict since, culminating with the recent takeover by al-Qaeda link groups and their subsequent displacement by French and Malian forces. The goal is to show how local systems of preservation successfully manage cultural heritage in times of conflict. It also presents ideas on how to enhance those local preservation systems with outside support.

SESSION 7B
Recent Excavations on Crete

CHAIR: *R. Angus K. Smith*, Brock University

The "Magasins Dessenne" at Malia (Crete) Reconsidered
Maud Devolder, Université Catholique de Louvain

During cleaning operations of the southern limits of the West Court of the palace at Malia in 1960, the northeastern corner of a large, well-built Protopalatial complex was discovered and subsequently cleared by André Dessenne. Destroyed by a violent fire during the Middle Minoan IIB period, the building surprised by the presence of a regular plan, pillars, plastered rooms, a large number of pithoi, and ashlar walls. The premature death of the excavator, however, prevented a fuller exploration of this complex, henceforth called "Magasins Dessenne." Moreover, the discovery, a few years later, of the similarly dated but even better preserved Quartier Mu resulted in the near oblivion of the Dessenne storage building apart from some studies that discussed its potential organization. Since 2012, the French School at Athens has been reinvestigating the building. A detailed architectural study now allows the recognition of a new architectural sequence and a better understanding of the functional organization of the complex, implying, for example, the rather late transformation of part of the rooms in storage areas. The paper discusses these changes and reassesses the role and importance of the complex within the Protopalatial urban landscape of Malia.

A Neopalatial Court-Centered Building at Sissi (Northeastern Crete)?
Simon Jusseret, Université Catholique de Louvain

Since 2007, the Belgian School at Athens has brought to light the remains of a Minoan settlement and associated cemetery at Sissi, northeastern Crete. The site, located only 4 km to the east of the palatial center of Malia, occupies a low coastal hill locally known as the Kephali. The strategic location of Kephali Hill, at the crossroads of important Minoan communication routes, as well as its proximity

to Malia, offers a unique opportunity to study the relationship between a major palatial center and its immediate hinterland. Excavations on Kephali Hill hence allowed us to suggest that Sissi was probably the second most important settlement after Malia from 2600 to 1450 B.C.E. and the most important center of the Malia Plain from 1450 to 1200 B.C.E.

Our understanding of the interactions between Sissi and Malia took a major turn in 2011 when excavations on the southern slope of Kephali Hill revealed extensive Neopalatial (ca. 1700–1450 B.C.E.) architectural remains suggesting the presence of a small court-centered building. The east wing of the building—the only one excavated thus far—was apparently built on top of Protopalatial (ca. 1900–1700 B.C.E.) structures showing a series of long, parallel spaces. Unfortunately, extensive Postpalatial (Late Minoan IIIA2/B, ca. 1370–1200 B.C.E.) occupation of the sector led to the loss of most original contexts.

Nevertheless, localized soundings allowed us to identify a large rectangular pebble court (9.7 x at least 20 m) forming the core of the Neopalatial complex. The court is oriented 16.5° to the east of north and aligns with the top of the nearby mountains. An approximately 19 m long limestone plinth or euthynteria faces the court to the east. To the west, a sandstone ashlar wall running parallel to the euthynteria may represent another facade lining the pebble court. Although the function(s) of the court remain unclear, a large kernos and a bench made of limestone slabs with hollowed-out depressions suggest ritual activities.

If confirmed by future investigations, the presence of a small Neopalatial court-centered building at Sissi may invite reconsideration of the role of this settlement in the political geography of the assumed Malia state. Interestingly, the close distance between Sissi and Malia parallels situations encountered elsewhere on Crete, such as between Knossos and Archanes or between Phaistos and Hagia Triada.

A Late Minoan III Communal Building at Sissi (Crete)

Florence Gaignerot-Driessen, Université Paris-Sorbonne, and *Quentin Letesson*, Université Catholique de Louvain

Excavated between 2007 and 2011 within the Sissi Archaeological Project of the Belgian School at Athens, Building CD is one of the most impressive Postpalatial structures found to date. It was erected on top of Buffo Hill, 4 km to the east of the palace of Malia, partly over Neopalatial walls, and covers about 370 m², with about 20 rooms. Its size, its distinctive architectural layout, and the archaeological material it produced all point toward a major building with a specific role in the Late Minoan (LM) III local community.

This paper gives a general overview of the building. It focuses on a description of the building's most significant archaeological contexts and architectural settings and proposes a preliminary functional evaluation and a first assessment of its importance for the local community of Sissi.

During LM IIIB, Building CD was divided in three main sectors, respectively devoted to ritual, social gatherings/communal dinning, and industrial activities. Two of these sectors were centered on a large hall with two vertical supports that opened, through a porch, onto the east and south "courts," respectively. Apart from their monumental central room, these sectors comprise annexes mostly devoted

to storage, small craft industry, and food processing. A small shrine containing snake tubes with horns of consecration, kalathoi, triton shells, a bench, and a possible altar, but no goddesses with upraised arms, was identified in the very core of the building. To the southwest of Building CD, a small square room opened only onto the south open area and contained storage vessels, lithic tools related to grinding activities, and a very singular cooking feature and its associated refuse pit. The area also yielded a vast number of limpets and sea urchins, undoubtedly the remnants of a meal prepared in the room. This cook shed was most certainly used in close connection with the south court, where communal ceremonies and feasting activities may have taken place. The third sector, essentially consisting of service areas, was articulated around a central corridor and provided a spatial connection between the two less mundane parts of the building. It bore traces of various practices, such as storage in large containers, textile production, cooking, and food processing, as well as other domestic and industrial activities.

An earthquake could possibly explain some early LM IIIB destructions, but the reason for the final abandonment of Building CD in LM IIIB (advanced) has not been identified yet. Except for the shrine, where ritual artifacts were recovered in situ, as well as the cook shed, most of the rooms were found almost empty in their last occupation phase, suggesting a planned abandonment of the building.

Excavations (2012–2013) at Gournia, Crete: New Discoveries
Livingston V. Watrous, University at Buffalo, SUNY

Since our last report to the AIA (2012), the Gournia Project (American School of Classical Studies/Greek Ministry permit) has excavated 49 new trenches within the settlement. This report describes and discusses the implications of our 2012–2013 findings—in and under the Minoan palace, in the central court, and at four separate areas along the north edge of the settlement.

On the acropolis of Gournia, excavation revealed two rooms of a large Middle Minoan (MM) IB structure under Room 18 of the Minoan palace. Not part of a domestic building, the rooms are characterized by pebble floors and low benches. This structure was set on a pebble bedding over a large cobbled MM IB courtyard constructed over Early Minoan (EM) IIB levels. In the southwest part of the Minoan palace, excavations confirmed the Late Minoan (LM) IB date of the ashlar southwest wing and produced evidence that the palace was initially built in MM IIIA (not LM I, as previously believed). At the southwest corner, next to the stone baetyl, a MM IIIA–LM IB cult deposit of approximately 700 cups, pumice, ash, and food remains was revealed. Within the LM IB Room 16 of the palace, excavation produced an inscribed Linear A tablet, the first from Gournia; inscribed roundels; stamped noduli; and a metals cache of about 70 pieces of copper, tin, and iron. Room 17 of the palace contained a MM IIIA fill deposit consisting of many fine cups and incense burners, evidence of a banquet ceremony.

Along the north edge of the LM I town, excavation revealed an area of intense industrial activities. West of House Ea, a metallurgical workshop, a pit furnace, and crucibles of LM IA date were recovered. North of House Ea, a MM I–LM IB structure yielded a lined pit, layers of clay, a potter's disc and ribs, wasters, and vats, identifying it as a ceramic workshop. Excavations north of the Pit House

revealed its Middle Minoan cyclopean facade—which faced onto a Protopalatial street paved with specially chosen blue cobbles—and a large cistern. Along the northeast edge of the town, an industrial complex consisting of rubble built rooms, work areas with potters' pivots, settling basins, and drains was set along a Protopalatial cobbled street. Finally, our investigations suggest that Gournia should be regarded as the primary production center for the widely exported Vasiliki and Mirabello Wares.

Gournia Excavation Project: Architectural Survey and Mapping

D. Matthew Buell, University at Buffalo, SUNY, and *John C. McEnroe*, Hamilton College

For more than a century, the plan of Gournia published by Harriet Boyd Hawes in 1908 has been one of the emblematic representations of a town in Bronze Age Crete. However, when the Gournia Excavation Project under the direction of L. Vance Watrous launched new excavations at the site in 2010, we quickly realized that the early plan would not be sufficient for our current needs and that we would have to make a new one.

In part 1 of this paper, we present the new plan of the site and describe some of the important information it provides. For example, entire buildings omitted from the 1908 plan have been added, and each house now appears more complex than in the regularized drawings of the 1908 plan.

While the new plan marks a significant improvement over the existing plan, we also decided that in dealing with a complicated hilltop site in which each room of a house may be built on a different level, no two-dimensional plan could adequately record the complexity of the architecture.

In part 2 of this paper, we describe the ongoing process of building three-dimensional models of the individual houses, blocks, and, eventually, the entire town. These models are providing us with a more accurate spatial understanding of the town and will serve as the basis for a more nuanced study of the architecture than has been previously possible.

As a result of this ambitious surveying and drafting project, Gournia, one of the most familiar Minoan towns, is becoming essentially a new site.

2013 Excavations at Palaikastro, East Crete

Carl Knappett, University of Toronto, *Tim Cunningham*, Université Catholique de Louvain, *Quentin Letesson*, University of Toronto, *Alexandra Livarda*, University of Nottingham, *Nicoletta Momigliano*, University of Bristol, and *Hector Orengo*, University of Nottingham

In the second year of the Palace and Landscape at Palaikastro (PALAP) project, we focused our efforts on exploring a new area of the settlement, the so-called palace fields. This area was named after a 2001 geophysical survey indicated possible buried features of a scale and alignment consistent with a palatial building. Further geophysical work in 2012 appeared to confirm that this area would be of interest and we chose our excavation zones accordingly. However, the geophysical

results proved to be misleading, and in the areas of most promise we found little but deep, gradual accumulations of colluvium. The sporadic finds in these levels are generally of mixed date, though with increasing depth they do become gradually earlier, from Late Minoan (LM) III through LM I to the early Middle Minoan period. These deposits were probably created by a gully carrying water down the steep slopes of Petsophas, perhaps in flash-flood events. It would have been logical to conclude that this gully then marked the edge of the settlement, but trenches opened up a little farther to the east, away from the town, immediately beneath the topsoil produced both architecture and finds from the LM III and LM IB periods. These discoveries indicate that the settlement was indeed more extensive than previously imagined, though further excavation will be needed to establish whether we are dealing with an area that is the eastern edge of town or a less peripheral area with possible civic buildings. We present in this paper the principal finds and contexts, which include a group of LM IIIA2 material that could be interpreted as a shrine, the collapsed upper levels of a LM IB destruction, and an enigmatic circular feature probably dating to the Protopalatial period.

Palaikastro Period XVI: The Settlement and Its Ceramics in Late Minoan IIIB
Tim Cunningham, Université Catholique de Louvain

The completion of study on reoccupation contexts from Building 1 at Palaikastro has clarified our understanding of period XVI (Late Minoan [LM] IIIB) habitation and ceramics. These were previously obscured by the transient and ephemeral nature of the phase, because they were seen against and amid the massive quantities of earlier material. Defined as coincident with LM IIIB, period XVI lasts 100 years, but nowhere do we have a building or area that is continuously inhabited for this stretch of time. In fact, period XVI begins with a hiatus of settlement, at least at the town site of Roussolakkos, which suffers a rapid to sudden abandonment at the end of the preceding period. The town in LM IIIB was thus of very different character than its LM IIIA2 predecessor.

In LM IIIB, we see a scattering of contemporary artifacts, and scant indications of new forms of cultural behavior set against a ruined and decayed urban environment. These occasional deposits of nonlocal ceramics reflect new habits amid signs of scavenging and limited reuse. We see a very different pattern of settlement that seems to be pulling back from the maritime plain and that leaves far fewer archaeological traces of itself than either the preceding LM IIIA2/B (early) or even the subsequent Kastri settlement in early LM IIIC. Indications of similar and/or related patterns from elsewhere in east Crete, particularly Sissi and Malia, are also discussed in light of the evidence from Palaikastro. Recent studies have shown that people often "opt out" of the spiral of increasing social organization, withdrawing physically from "civilization" to more remote hilltops and high valleys while choosing more self-sufficient and less visible subsistence regimes; something like this may be happening here, at the far eastern end of Crete in the 13th century.

The Neopalatial Period in the Ierapetra Area: New Discoveries from the Minoan Building at Anatoli, Crete
Yiannis Papadatos, University of Athens, and *Konstantinos Chalikias*, University of Athens

Excavation in 2012 at the Minoan site of Gaidourofas in Anatoli, Crete, exposed the extensive remains of a large, rural, Neopalatial two-story building located at 900 masl. The excavation and study of the building complex is essential for our better understanding of the settlement history of the Ierapetra area and the exploitation of mountain landscapes by the Minoans. In the summer of 2013, excavation at the site uncovered four more rooms and exposed the layout of the building, which now measures approximately 220 m² on the ground floor. This year's excavations produced substantial evidence for the architectural design of the building, including two more rooms with a central pillar and the use of wooden reinforcement in wall construction, features well known from important, palatial-style buildings elsewhere in Crete. Finally, the study of last year's finds enhanced our knowledge regarding everyday life at the building during the Neopalatial period. Although the project is at an early stage, the recent findings are already starting to shed new light on the settlement history of the Ierapetra region during the Bronze Age, a period that is relatively underrepresented in the scholarship of the area.

SESSION 7C
Greek Ship Monuments

CHAIR: *Catherine Keesling*, Georgetown University

Warships for the Gods: Proposed Settings for the Ship Dedications of the Persian Wars
Kristian Lorenzo, Monmouth College

In commemoration of their victory in the Battle of Salamis, according to Herodotus (8.121–22), the allied Greeks in 479 B.C.E. dedicated three captured enemy warships as thank offerings, one each at Isthmia, Sounion, and Salamis. Precisely where at these sites the ships were set up is nowhere recorded, and no archaeological evidence of the dedications is preserved. Earlier scholars have proposed, in very general terms, either seaside locations or intrasanctuary settings, but without a discussion of the feasibility of transporting a trireme over land or suggestions for specific intrasanctuary settings. In this paper, I both argue for the feasibility of overland transport and offer specific intrasanctuary locations for the dedicated Phoenician warships.

The dedication of whole ships in any setting was an extremely rare occurrence in the Greek world. In the late seventh century, at least one 15-ton ship, and perhaps a second, was dedicated in the Heraion of Samos about 170 m north of the modern shoreline. By the end of the Persian Wars, the Greeks had many years of firsthand experience hauling approximately 25-ton triremes onto beaches either for protective purposes (e.g., to escape a storm) or for vital maintenance (e.g., to

guard against shipworm infestation). They also had many years of practical ex-
perience in moving loads of 26 or more tons as many as 25 km overland. The
overland transport of the Phoenician triremes was well within the limits of the
engineering and heavy transport capacities of the Greeks. Such expensive dedi-
cations were also part of Greek sacred practices, with these warships acting as
especially potent signifiers of Greek superiority.

My discussion seeks to resituate these long-lost monuments in their original set-
tings as important parts of a dynamic past, in which military victory dedications
were integral components of Greek sanctuaries. Once dedicated, the warships
both became the sacred property of the resident divinity and assumed the aspect
of monumental wooden sculpture. In the case of the trireme at Sounion, this as-
pect would have been especially striking, as a complete captured enemy warship
rested amid the impious destruction the Persians had so recently wrought at the
site. In my discussion of these dedications, I bring to the forefront broader issues
of how the reintegration of such vanished monuments can help us recapture the
appearance of sanctuaries at important moments in their lifespan.

Current Research on the Nike Precinct in the Sanctuary of the Great Gods on Samothrace
Bonna D. Wescoat, Emory University

To mark the 150th anniversary of the discovery of the Winged Victory and in
conjunction with the Musée du Louvre's program of conservation for the statue,
we have renewed investigations in the Nike precinct in the Sanctuary of the Great
Gods on Samothrace. A stunning personification of triumph and an icon of world
art, the Nike took pride of place at the highest point in the sanctuary. While her
brilliance as a statue remains uncontested, the design of the precinct in which she
stood has not been clearly understood, nor has her visual and physical relation-
ship to neighboring monuments. Our team is working to resolve these issues.

Although the Nike monument is no longer thought to be a fountain, a satisfac-
tory alternate reconstruction—whether naiskos or open peribolos—has yet to be
offered. The lack of ordered elements, even among more than 500 broken blocks of
calcareous pebbly sandstone from the monument that served as spolia in a Byzan-
tine building north of the stoa, argues against a naiskos. However, the fragments
of decorative plaster, including lion-head waterspouts, a cavetto, an ovolo, and
traces of blue and white plaster imitating drafted margin masonry, the last gener-
ally indicative of interior space, must be accommodated. Two design options are
offered. With respect to the position of the monument, modeling demonstrates the
visibility of the statue across the sanctuary and helps fix its pivotal relationship to
the adjacent theater and stoa.

For the statue, several fragments of the Lartian marble prow on which the statue
stood, recovered between 1950 and 2013, offer new insights into the design of the
marble warship, especially the ram. They demonstrate the transition from the keel
to the ram and show that the fins of the ram formed the shape of a trident. Sculp-
tured parallels for this design are well known (Cyrene, Rhodes). However, the
recent underwater discovery of several bronze rams connected with the Battle of
the Egadi Islands near Sicily in 241 B.C.E. provides welcome confirmation that the

Samothracian monument faithfully reflects the contemporary design of the actual naval device. Three-dimensional scanning of Lartian marble fragments of the ram and Parian marble fragments belonging to joint surfaces of the statue allows for a closer comparison with the fragments now in Paris, to determine possible joins, to help reconstruct the size of the ram, and possibly to add to the plinth of the statue.

The Nike of Samothrace: The Case for the Artist's Signature
Patricia Butz, Savannah College of Art and Design

The 150th anniversary of the discovery of the Nike of Samothrace in the Sanctuary of the Great Gods on Samothrace was widely celebrated in 2013, culminating in the great statue being taken off display in the Louvre for purposes of conservation and restoration. Highly anticipated is the new realignment of the statue according to cuttings on the central block of the ship's base. Although the block is still located on Samothrace, digital technology makes the realignment possible. Of equal importance to art historians and epigraphists is the fragmentary inscription *IG* 12 8 239, the subject of this paper.

The small fragment was discovered in 1891, 28 years after the statue but in the immediate vicinity of the installation. It is believed to be of Lartian marble from Rhodes and hence to match the ship base, and it has long been the subject of debate because of its possible association with the name of the sculptor and the identification of the Hellenistic school that produced the masterpiece in the second century B.C.E. The question of attribution is worth revisiting at this time, although prevailing opinion, as demonstrated by the official Louvre website, largely discounts any association of the fragment with the Nike monument.

This paper offers a new examination of the fragment, the paleography and disposition of the text as it survives, the arguments for and against the restoration of the artist's name as Pythokritos Timarcharios Rhodios, and suggestions for the placement of either an artist's signature or a dedicatory inscription on this form of monument. In addition to Rhodian comparanda for the inscription, the Sperlonga cycle of statuary from the Grotto of Tiberius is included in the discussion for the manner of its epigraphical evidence pertaining to signatures of the great Rhodian trio: Athenadoros, Hagesandros, and Polydoros.

SESSION 7D
Fieldwork in Italy

CHAIR: *Ingrid Edlund-Berry*, The University of Texas at Austin

Celts, Veneti, and Romans: Exploring Identity Through Material Culture in a Forgotten Corner of the Veneto
Luana Toniolo, University Ca' Foscari of Venice

The University of Kentucky's Tezze Project has highlighted the existence of a new Roman town near Tezze di Arzignano in the lower Agno River valley to the northwest of Vicenza, in Italy's Veneto region. Epigraphic and archaeological data

recovered in the last two centuries already pointed to an extensive Roman oc-
cupation of this area. The project, integrating archival research, analysis of the
archaeological record, and remote sensing, aims to detect the patterns of settle-
ment and urbanization of the valley in antiquity. This paper presents the results
of the analysis of the cultural materials salvaged during fieldwork and discusses
their contribution to an understanding of the identity of the local population in
relation to the pre-Roman Venetic tradition and its openness to trade. The pottery
allows reconstruction of a chronological range of occupation for the site from the
Late Iron Age to the third century C.E., with a peak during the first/beginning of
the second century C.E.

The ceramics datable to the Romanization period allow clear identification of
a local tradition that characterizes this foothill area from Montebello to Trissino,
blending elements belonging to different cultural traditions. Textual evidence
indicates that the Dripsinates, a subalpine people, occupied the Agno River val-
ley before the arrival of the Romans. The morphology and decoration of cooking
wares highlight this strong Celtic substratum and the links with the alpine tradi-
tion. This piedmont area, in fact, and the site of Trissino in particular, functioned
as a node for economic exchanges among different pre-Roman inhabitants in this
corner of the Veneto. Conversely, the presence of local productions of "gray ware"
clearly attests to contacts with the Venetic centers of the plain, such as Padua and
Este. During the Early Imperial period, the area seems to have adopted the Roman
typological repertoire, but the pre-Roman tradition is still apparent and survives
through the technological features. This period is characterized by a lively regional
trade oriented toward Cisalpine Gaul rather than the alpine area, with fine wares
and amphoras produced from the Po Valley to Istria. The latest ceramic evidence
from the site is datable to the third century C.E. By this time the settlement seems
to have been firmly tied to the trade routes used in Italy's Regio X, with links to
new markets such as Tunisia and Cyrenaica. The historical causes of the destruc-
tion of the Roman town near Tezze in late antiquity are still being investigated.

Sixth Season of Excavation at the Vicus ad Martis Tudertium
John Muccigrosso, Drew University, and *Sarah Harvey*, Kent State University

Excavation at the Umbrian site of the Vicus ad Martis Tudertium along the Via
Flaminia returned this season to the large apsidal building that had been explored
for the first time last year. The existence of the 24 x 15 m structure was indicated by
the presence of crop marks in the dry summer of 2008 and strong signals in geo-
magnetic survey. Last year's trenches were expanded to explore the area outside
the apse, where several signs pointed to the presence of structures related to the
removal or maintenance of water in and around the building. In addition, the long
side wall of the structure was fully exposed, along with the space between it and the
ancient road surface, to explore the relationship between the structure and the road.

Consistent with the findings from previous seasons, a number of features point
toward a significant reworking of the site and the building itself in antiquity, per-
haps in an effort to mitigate an abundance of water (a feature of the site strongly
attested from the Medieval period until today). In particular, one interior portion
of the building appears to have been deliberately filled with a thick layer of clay,

while some wall construction associated with the earlier phases of the site was abandoned and covered over. Of particular interest was the discovery of a wall or cistern opening, which appears to have been maintained through several phases of the site's history. Filled with soil and water from the present-day water table, the interior of this feature was left mostly unexplored.

Last year's work showed that the apse itself had been built over a preexisting floor, and this year we were able to show that in fact this entire end of the structure was added to a preexisting building to its west, which exhibits a clearly different style of construction.

In the area surrounding the exterior of the apse, several burials were uncovered, likely from the very latest phases of the area's ancient use. These join the other, similar burial discovered in another area of the site in previous seasons, and they strongly suggest that the site finished in use as a cemetery for the local population, surely after the abandonment of the settlement. It may be that this population should also be associated with the catacombs of San Faustino located some 2 km south, also along the via Flaminia.

The Upper Sabina Tiberina Project: Second Excavation Season at Vacone

Dylan Bloy, Brooklyn College, *Gary Farney*, Rutgers University, *Tyler Franconi*, Oxford University, *Matt Notarian*, Tulane University, and *Candace Rice*, University of Edinburgh

The Roman villa at Vacone in Sabina, long known by its concrete cryptoporticoes, is now a focus of archaeological investigation under the auspices of Rutgers University with the support of the La Soprintendenza per i Beni Archaeologici del Lazio. The 2013 summer season of excavation, the second of a projected five seasons of initial excavation, clarified several aspects of the site while raising a host of new questions.

Excavations continued in Rooms III, IV, and VII, which face onto the front portico of the villa. Room IV, probably a large reception room, was excavated completely, and its mosaics and wall paintings were conserved in situ. In Room III, where a child burial was excavated last year, we discovered three adult skeletons in secondary burial above the threshold leading from the back of the room to a hallway. In Room VII, a newly discovered opening to the side of the room revealed a descending vaulted passageway leading down to the lower cryptoportico. Excavation of several early modern agricultural trenches in Rooms VII and VIII revealed evidence of an earlier floor phase some 20–30 cm below the mosaics, including a well-preserved decorative *opus signinum* floor with inlaid colored marbles. These floor styles, in conjunction with ceramic data, suggest a date of ca. 100 B.C.E. for this first phase.

Elsewhere on site, we investigated the relationship of the upper "cryptoportico" to the villa terrace. We discovered that the central "window" of the structure was recently cut, which, in conjunction with the discovery of its *cocciopesto* floor and waterproof wall lining inside, suggests that the structure was a cistern. The villa incorporated the outer wall of the cistern into the construction of its interior rooms, as seen in the newly discovered Room X, where the cistern wall was covered with painted plaster.

Finally, we investigated the area adjacent to the cistern where an *opus spicatum* pressing area (with a torcular, arbores, and channels leading to three large masonry vats) and a domed structure had previously been discovered by the Soprintendenza. New excavation revealed the existence of a second torcular and further channels. One of these channels is unrelated to either press bed and continues into an as yet unexcavated section to the northeast. We also excavated the vats and revealed their relationship to the cistern. Beside the domed structure, an apparent robbing trench beneath the press floor traces an arc that may reflect the original circular shape of the structure.

The 2013 Archaeological Season Results at Alberese (Grosseto)
Alessandro Sebastiani, University of Sheffield

This paper presents the results of the 2013 archaeological season at Alberese (Grosseto) in south Tuscany. The excavations led by the Department of Archaeology of the University of Sheffield have brought back to the light the manufacturing district of the river port of Rusellae, on the last bend of the Ombrone River.

The settlement presents a first-century C.E. complex divided into 13 rooms, dedicated to metal, bone, and glassworking. These ateliers were in use from the first century up to the late fifth century C.E., when the site experienced the presence of a necropolis. Soon after the beginning of the sixth century, the site was converted into an agricultural field, before being completely sealed by more than 2 m of alluvial clay, the result of floods of the nearby river.

During the 2013 season, the excavation team was also involved in the discovery of a new site—first visible thanks to crop mark evidence—which can be interpreted as a Roman villa. This villa is situated on the shores of the ancient seacoast line, between the Temple Area of Diana Umbronensis (Scoglietto) and the river port, with its associated manufacturing district. Its strategic location is fundamental to better comprehending the economical relationships elapsed in this part of south coastal Tuscany.

Moreover, the presence of a series of stamped tiles belonging to urban *figlinae* of both the Domitii Ahenobarbi and the Gobati families strongly links the presence of these settlements to high-status, senatorial families whose estates extend far beyond what was previously supposed.

Finally, the possibility of linking different data sets (excavation data, material culture, geoarchaeological data, and settlement patterns) resulted in the construction of a new economic model for this territory throughout the Imperial period up to Late Antiquity, one that stands in stark contrast with previous hypotheses, based only on substantial agricultural exploitation of the area.

A Late Antique Kiln at Coriglia
Eric Thienes, University of Missouri

During excavations from 2010–2013 at Coriglia, a Late Antique kiln was discovered to the north of the site. Coriglia is located on a series of artificial terraces on a hillslope overlooking the Paglia River, approximately 15 km northwest of Orvieto.

It is primarily Etruscan and Roman, and it has several structures associated with water, including a system of fountains, channels, and a bath.

The kiln was built into a series of walls adjacent to a Roman imperial bath building. It is rectangular, measuring approximately 3.8 m long x 2.3 m wide. The exterior walls of the kiln are constructed out of reused tiles and packed clay. The structure had a center support between two exterior walls built entirely out of packed clay hardened during firings. The perforated floor of the kiln no longer exists, but fragments of hardened clay were found collapsed into the channels between the walls and the center support. Several roof tiles were found in the collapse over the firing chamber; they were used as the structure covering the kiln. Much like the outer walls, the top of the kiln was also built out of reused tiles.

This kiln represents a later reuse phase of the site after the bath building was no longer in use. It was built next to the north wall of the bath building and along the northern entrance and floor of the bath building. The use of the tiles to form the structure of the kiln suggests that the materials for construction were gathered from the nearby buildings. Several small bronze coins were found near the kiln. Unfortunately, the condition of the coins precluded identification, but judging from their size and weight, they appear to be late. This discovery is significant because it represents a change in the use of the site from a water and bathing site to an industrial one. There are a number of parallel shifts in other parts of the site, from evidence of vitrification to the slagging of lime from marble. This is not only important to the history of Coriglia but it is also significant because it is an example of a larger trend of a cultural change in late antiquity. The paper concludes with a brief discussion of the relationship of this kiln to the development of the post-Classical ceramic industry in central Italy, for which this region was known in antiquity and is still known today.

Report on the Basentello Valley Archaeological Research Project's Regional Field Survey

Adam Hyatt, Saint Mary's University, Halifax, and *Myles McCallum*, Saint Mary's University, Halifax

The Basentello Valley Archaeological Research Project (BVARP), working under the auspices of the Soprintendenza di Basilicata, began its regional field survey in the summer of 2012. With two seasons of fieldwork now completed, BVARP has begun to formulate a new picture of ancient settlement in the Basentello Valley. The survey zone is approximately 240 km^2, located in southern Italy in the territories of Genzano di Lucania, Banzi, and Irsina. The fundamental goals of the archaeological survey are to characterize the change in settlement patterns from the Iron Age through the Late Antique period, to identify potential demographic changes, and to place BVARP's excavations of the imperial estate at San Felice and the Roman necropolis at Vagnari (both located near Gravina in Puglia) into a regional context. Particular attention is being paid to continuity from the pre-Roman to the Roman period to address potential cultural disruption related to the Roman conquest, the Hannibalic War, the Social Wars, and other similar events. The Basentello Valley is perfectly situated to address these research questions. This river valley was a liminal zone among several Italic peoples, including the Daunians, Lucanians, and

Peucetians. Moreover, this region would have been affected directly by Roman expansion given its close proximity to Venusia, Rome's first major colony in southern Italy, and the Via Appia. The cultural division marked by this river may be seen in the creation of the Augustan regions of Apulia to the east of the Basentello River and Lucania to the west. As such, one might expect to see a marked difference in settlement patterns, site types, and material culture on either side of the river prior to the arrival of the Romans and the creation of different local hybridized cultures after the Roman conquest.

During the summers of 2012 and 2013, BVARP identified more than 115 sites dating from the Paleolithic through Medieval periods. The scatters at prehistoric and ancient sites range in size from less than 0.10 to 16 ha and are located on all types of terrain. Many of these sites were occupied during or across different prehistoric and historical periods. This paper provides an overview of our methodology and results, focusing on survey data from the Iron Age to the Late Antique periods and paying particular attention to site relationships and continuity/change across historical periods.

Preliminary Findings from the Salapia Exploration Project (Cerignola, Italy): Revealing the Roman Port Town of Salapia

Darian M. Totten, Davidson College, *Giovanni de Venuto*, University of Foggia, and *Roberto Goffredo*, University of Foggia

Archaeological work in the Roman province of Apulia has experienced a significant uptick in recent years. Once seen as a place recovering from a devastating war with Hannibal and later thought to have suffered a profound decline in the late empire, Apulia has been reconceptualized as a vibrant, economically prosperous province. With this research, concentrated primarily in the interior, advancing apace, one major hole remains: the role and development of its coastal port towns. In this paper, we present the preliminary results and interpretations from the 2013 field survey along the Lago di Salpi, a project designed to locate and study Roman Salapia both as an urban settlement and as a port. Although long known from historical sources, the site of Salapia has not been conclusively identified. The pre-Roman cemetery of Salapia Vetus, located farther inland, has been studied in depth, while asystematic investigations on the Monte di Salpi, not far from the coast, have tentatively identified a medieval settlement. To fill this chronological and spatial gap, we conducted a systematic, intensive field survey of this hilltop and the coastal plain surrounding it, covering 16 continuous hectares up to the edge of the Lago di Salpi itself. We have thus far identified two distinct zones of settlement. On the hilltop, a medieval occupation is dated from the 11th to 14th centuries. Along the coastal plain, there is strong evidence of Late Antique occupation and indications of a Roman imperial phase as well, represented by dense scatters of ceramics, tiles, and worked stone stretching over approximately 10 ha—and continuing beyond our area of investigation. From the spatial distribution of finds, we have early indications of the urban layout below the surface. For instance, imported amphoras appear concentrated most heavily near the coast, along with iron slag, speaking perhaps to an area dedicated to trade and artisinal production; domestic life is evident elsewhere, in scatters with painted plaster, mosaics, and

imported and common ware ceramics. We therefore have compelling evidence that this is the site of Salapia. It is emerging both as an example of Roman and Late Antique urban settlement and as a space strongly connected to the Mediterranean trading system; some eastern and North African amphoras, for instance, are little represented at interior sites in Apulia. Salapia, then, offers a crucial perspective of economic and social life on the Apulian coast quite different from what has been explored elsewhere in the province.

SESSION 7E: Colloquium
Composing Unity and Subverting Sovereignty in Iron Age and Roman Dacia

ORGANIZERS: *Alvaro Ibarra*, College of Charleston, and *Andre Gonciar*, ArchaeoTek–Canada

Colloquium Overview Statement

Iron Age and Roman Dacia remains poorly understood. In particular, the Transylvanian Plateau—the heartland of Dacia—witnessed centuries of dramatic developments: unification and expansion under King Burebista in the early first century B.C.E., wars with Rome in the first and early second century C.E., and an insurgency against Roman occupation in the second and third centuries. Recent archaeological findings, increased international collaborations, and greater access to technology are finally helping flesh out the image of a powerful Dacian nation, a vision once dismissed as the product of modern nationalistic fervor in Romania.

Certainly, ancient and modern biases continue to influence our notions of Dacia. Negative views are still perpetuated by ancient Greek and Latin texts, for example. Ovid's bleak visions of Greek Tomis still influence our opinion of the region. By comparison, Strabo's account of a Dacia that rivaled Hellenistic powers is met with suspicion. The Roman-era narratives of Trajan's Dacian Wars (101–-102 and 105–106) by Cassius Dio and Tacitus portray an overwhelming, tragic defeat for the Dacians. These accounts inspire the belief that the Dacians became Roman.

Archaeologists that anticipated a backward Iron Age culture or privileged Romanness often excluded native artifacts and data that contradicted their expectations. The aim of the participants of this colloquium session is to present findings that showcase the success of Dacian society in the Iron Age, explore the complex political relations of the Geto-Dacian tribes during the Dacian Wars, and further our understanding of postwar dynamics between Rome and Dacia.

Current research reveals a powerful kingdom unified by two savvy Dacian monarchs during the Iron Age, a unity expressed in the cumulative survey of native-style hill forts, walls, weapons, and pottery. Such Dacian material production did not cease after the Roman conquest, suggesting that many communities around the Transylvanian Plateau continued to identify themselves as non-Roman. Tellingly, heavily fortified Roman marching camps along the southern Olt were designed to continuously combat nearby threats rather than simply function as way stations in the postwar era. It would appear that subverting the sovereignty of the Dacian state was a much harder endeavor than Roman accounts suggest.

The Evolution of Roman Encampments in Southern Dacia: An Analysis of Roman Operations and Military Fortifications Along the Upper Olt River Valley
Alvaro Ibarra, College of Charleston, and *Jeremy C. Miller*, College of Charleston

This lecture presents a recent geospatial analysis of five Roman marching camps along the Olt River, near the present-day villages of Boiţa, Feldioara, Cinşor, Hoghiz, and Homorod. The initial data regarding this system of defense reveals the castra were not designed to protect or police the interior of the province of Dacia to the north. Instead, the chain of camps faces the Carpathian Mountains to the south.

This information challenges the belief that the Dacian population was eradicated or assimilated after the Dacian Wars. The need for a permanent line of defense suggests the Dacians thrived in the rugged Carpathians throughout the Roman occupation (106–271 C.E.). Roman settlers may have lived in a more hotly contested and hostile environment than traditionally understood. Our findings point to the presence of a long-term insurgency in Dacia, evidenced through the evolution of strategies developed by Romans over time.

The earliest camp, Boiţa, was constructed sometime during the first Dacian War to hold the Carpathian pass to the south. From Boiţa, the Romans built the line of camps to the east a decade after the end of the Second Dacian War, implying renewed conflict. From west to east, Boiţa, Feldioara, and Cinşor all feature prominent sight lines to the south. Clearly, these soldiers anticipated a conventional army. Their buffer zone gave them plenty of time to see a large force and react accordingly. This strategy is applied along many other Roman *limes*, such as at Hadrian's Wall.

However, the strategy changes at Hoghiz and Homorod farther east along the Olt. These two camps likely date to the Antonine period. There is less of an emphasis on large fields of visibility and more of an emphasis on establishing "choke points" that restrict the movement of smaller forces. The forts here are smaller, closer to one another, and not aligned in linear patterns. The Romans probably implemented shorter patrols and abandoned long marches.

It is the kind of approach needed to fight guerrilla wars, tactics recently revisited to fight the current war in Afghanistan. We have every conviction that this part of Dacia became the site of an insurgency, the kind of unconventional war Romans were not adept at fighting. The notion of a long-term insurgency in Dacia requires that we change more than just our view on tactics; it may ultimately challenge our perception of Rome's cultural primacy in the entire province.

Reassessing Hegemonies in Late Iron Age Transylvania
Andre Gonciar, ArchaeoTek–Canada

During the Late Iron Age (Late La Tène, first century B.C.E. to first century C.E.), the interaction between the inhabitants of modern-day Transylvania and Wallachia and the Romans (and Greeks) was based on a complex interwoven pattern of aggression, economic and cultural exchange, and various forms of protectionist policies on both sides. Prior to the Roman conquest of 106 C.E., a series of recorded political events affected the Dacian political landscape. Toward the end of the first

half of the second century B.C.E., Burebista rose to kingship and united all Dacian tribes. This political and military entity of mixed ethnicities conquered the Greek colonies along the Black Sea and annexed Celtic and German territories to the west and northwest of the Carpathians. At this moment in history, Burebista's expanded kingdom constituted a counterpower and purported threat to the Roman republic in the Balkans.

Burebista was assassinated shortly after 44 B.C.E. However, his kingdom did not revert back to its preexisting geographical configuration. Instead, it split into four or five separate kingdoms with an apparent primacy given to Sarmizegetusa Regia, the long-time royal capital. In 85 C.E., Diurpanaeus (later known as King Decebalus) reunited the region and led an army into Roman Moesia, thus starting the Domitianic Dacian Wars. This conflict ended in 88 in favor of the Dacians. Despite the advantages reaped from the treaty of 88 C.E., Decebalus attacked Roman territories yet again in 101 C.E.. After an initial victory, he eventually lost this second war in 102. In the aftermath, Emperor Trajan kept Decebalus in power and even provided him with substantial support to create a powerful buffer state north of the Danube. Astonishingly, Decebalus was forced by his followers into a third war against Rome in 105, which he eventually lost in 106. At this point, Dacia became a Roman province.

Following Celtic and Germanic templates, Late Iron Age scholars have interpreted these well-known events as discrete phenomena, instantiating the dialectic opposition between centralization and heterarchical currents apparent throughout Iron Age Europe. However, that assumption needs to be questioned. I argue that in the case of Dacia the above series of events are the result of a single, relatively stable and coherent political construct in which strong and permanent central powers are fundamentally interwoven with similar local heterarchical powers, both of which can exist only in a context of active integration.

Power, Fear, and Identity: The Role of "Place" in Dacian-Roman Interactions
Alexander Brown, University at Buffalo, SUNY, and *Andre Gonciar*, ArchaeoTek–Canada

The Dacians of Late Iron Age Transylvania have a mottled social history reflective of a turbulent political history. The Dacians are treated as one people by Roman historiography, and modern scholarship's dependence on the Roman historical record concerning Romanian prehistory brings us in to that same conceit. While there is little doubt that Burebista's massive campaign of political and social consolidation created a unified empire, its subsequent collapse and further fracturing, even under the reunification of Decebalus, supports the theory that the Dacians were a network of different peoples that prized their independence and acted on their individual or immediate tribal concerns.

Work at two Dacian hill-fort sites, at Tilişca and Piatra Detunata, illustrates the pronounced individual character of settlement that mediated interactions between Roman military forces and Dacians. The two sites show marked differences in the way that they prepared for and met Trajan's incursions. These differences are indicative not only of strategy and circumstance but also of the relationship between the individual settlements and their inhabitants. This paper explores the

affordances of the two hill forts, their sources of power, that provide the physical and emotional context within which the inhabitants negotiated their relationship to and self-image against the invading Romans.

Such evidence may suggest the subversion of political authority and resistance to such overarching power grabs as a recurrent theme in the convoluted Dacian system of governance. It is possible that, on the local level, Dacian communities struggled as much against ambitious monarchs like Burebista or Decebalus as they did against the Romans. Rome merely prompts the most radical example of tribal maneuvering in Dacia in the historical record.

Romans. . . A Dacian Perspective!

Florea Costea, Braşov County History Museum, Romania, *Angelica Balos*, DJC-CPCN Hunedoara, Romania, and *Andre Gonciar*, ArchaeoTek–Canada

One of the most challenging tasks of the archaeologist is to critically negotiate the dynamics between archaeological realties, historical facts, and written sources. The Late Iron Age in the Carpathian region illustrates these academic tensions quite conclusively. The protohistorical context of this region/period, the Geto-Dacian world, is further complicated by the scarcity and the highly one-sided (if not biased) nature of the preserved records. However scattered, fragmented, or even trifling these sources might appear, they imply a highly elaborate system of exchange as well as very complex social, cultural, and political relations between the Roman republic/empire, the Hellenistic world, and the Geto-Dacian tribes and kingdoms.

Even more so, the Transylvanian Dacians, the power core of the Geto-Dacian political, economic, and military construct, had a very substantial if not fundamental impact on these relations and events. In this context, we assess the degree of veracity and/or validity of some of the historical sources as they relate to the actual, factual, and material reality uncovered by recent archaeological excavations in southeast Transylvania, more specifically the area around the Olt River canyons of the Persani Mountains. We hope this will allow us to determine to what extent historical theoretical approaches can be implemented in this type of protohistorical textual and contextual environment.

SESSION 7F
3D Archaeology

CHAIR: *John Wallrodt*, University of Cincinnati

A New Paradigm for Archaeological Publication: Born-Digital E-Book, Three-Dimensional Navigation, Linked Databases
John R. Clarke, The University of Texas at Austin

From its inception in 2006, the Oplontis Project set the goal of marrying traditional archaeological practices to cutting-edge instruments for recording and dissemination. These instruments include born-digital publication and a fully-navigable three-dimensional model, both linked to the project database.

In partnership with the American Council of Learned Societies (ACLS), the Oplontis Project is producing the definitive publication of the archaeological site of Villa A ("of Poppaea") at Torre Annunziata, Italy. The advantages of the e-book far outweigh those of paper publication. There are no limitations on either the quantity or quality of text and visual media. The born-digital book allows for hyperlinks; we are using these to access the vast project database, which is hosted by the Texas Advanced Computing Center.

Although three-dimensional modeling is not new to archaeological study, the fully navigable interface uses an advanced, "first-person shooter" gaming engine that allows unprecedented access to scholarly information and virtual experience of the site. Not only does the model document the actual state of Villa A, including trenches, but it permits the user to query any feature within the site so that he or she can access the full database entry for it. Reconstructions of decorative ensembles including paintings, sculptures, and landscape and garden features that are no longer visible are integrated into the model. Researchers interested in specific aspects such as the ancient topography, changes in lighting, and variations in viewsheds may investigate these variables with a touch of a button. They can choose to "drill down" to the detailed information in the database.

This database consists of descriptive catalogues of paintings, pavements, sculptures, ceramics, and other materials. It also includes high-resolution drawings and photographs, archival data with historical photographs, and the original fieldbooks (with searchable transcripts of handwritten documents). Also available is an array of scientific data, including results of ground-penetrating radar and electrical resistivity tomography surveys, excavation reports, isotopic analysis of stones, and chemical analysis of pigments. The linkage of the three-dimensional model and the e-book to the database allows for different kinds of research strategies for scholars and students at all levels. Thanks to the ACLS, the publication of Villa A will be open access.

In this presentation, I shall demonstrate the model and the database and introduce the e-book: *Oplontis Villa A ("of Poppaea") at Torre Annunziata, Italy*. Vol. 1, *The Ancient Setting and Modern Rediscovery*.

Playing in the "Digital Sandbox": The Use of Three-Dimensional Visualization Tools to Interpret the Urban Landscape of Ammaia (Alto Alentejo, Portugal)
Paul Johnson, University of Nottingham, and *Michael Klein*, 7Reasons Medien GmbH

Many Roman urban sites are known only through nonintrusive methods of remote sensing and geophysical prospection. The data obtained through the application of these methods present a number of interpretative problems, largely relating to the necessity of formulating a three-dimensional understanding of the archaeological remains from the predominantly two-dimensional plots and images of the data set.

This paper demonstrates the successful application of a methodology enabling three-dimensional visualizations of urban space to be created and manipulated easily, quickly, and, most importantly, through a simple interface by all persons involved in the interpretative process. This technique and technology, which

adhere to standards for Digital Heritage and Digital Archaeology (the 2009 London Charter and 2011 Seville Principles), were developed through work undertaken at the Roman city of Ammaia (Portugal) as part of the European Union Industry-Academia Partnerships and Pathways Fp7 "Radio-Past" project. This paper discusses the process in relation to the development of interpretations for this site.

The software platform on which this methodology is based provides a highly intuitive, specialized, and user-friendly three-dimensional environment, or "digital sandbox." Within this environment, multiple data sets can be incorporated, including (but not limited to) terrain models, aerial photographs, cartographic data, geophysical survey data, and their vectorized interpretive plans. The methodology builds on these base maps using an iterative process of increasing detail in the representation of three-dimensional volumes, which can be used to rapidly populate the digital version of the urban area with structures and allow them to be visualized, modified, and queried in three dimensions and in real time. The methodology offers the possibility to produce a sequence of visualizations, each of which can easily be assessed, modified, and, if necessary, discarded without any great outlay of time or resources and without the need for all members of the team to be familiar with complex three-dimensional rendering software. The primary benefit of the methodology is to facilitate dissemination and collaboration between members of research teams and for ideas to be validated within a malleable three-dimensional environment. While engaging and aesthetically pleasing outputs are a by-product of this process, its essential value lies in the ability to rapidly conceptualize space in three dimensions and to enhance the interpretative process.

Archaeological Implications of Reflectance Transformation Imaging: A Case Study at Tell Timai, Egypt

Sarah Chapman, University of Birmingham

Tell Timai (ancient Thmuis) is located in the northeast Egyptian delta. Ancient Thmuis flourished as an urban metropolis from 450 B.C.E. to 900 C.E., during which time it also served as the administrative capital of the Mendesian nome. Reflectance transformation imaging (RTI) was implemented during the 2013 summer field season as part of a larger program of digital imaging employed at Tell Timai. RTI is a digital-imaging method that produces a file that includes both color and shape data and can be relit from many directions, allowing for a more detailed examination of the surface of artifacts. In the past six seasons of excavation, numerous artifact types highly suited to RTI have been uncovered. These include coins, carved stone and bone, stamped amphora handles, decorated ceramic sherds, and terracotta figurines. Methods of image capture for artifacts included the use of a full-frame DSLR camera equipped with a 100 mm lens and handheld flash tethered to a computer for remote triggering. Every artifact was photographed a minimum of 32 times, and every photograph had a different lighting position. The image set was then processed using RTI building software, which combined the image set to create the final RTI file. The use of RTI in field archaeology has widespread benefits, which are evidenced from the successful implementation of this technology at Tell Timai. The ability to examine an artifact's surface through

manipulation of shadows and highlights in an RTI file make it a superior method of study, even over an examination of the artifact itself. RTI is especially useful in preparation for conservation, as detailed examination of the surface detail helps better evaluate the condition of the artifacts and understand each individual artifact's conservation needs. Both organic and inorganic materials from the Egyptian delta region are extremely susceptible to degradation and therefore must be carefully monitored and maintained regularly. Use of RTI files allows for detailed and long-term analysis of artifacts that may otherwise be inaccessible after the conclusion of a field season. RTI permits collaborative research efforts from a large international community of scholars in a way never before possible.

New Applications for Computational Photography in the Documentation of Archaeological Materials
Anna Serotta, Metropolitan Museum of Art, and *Ashira Loike*, Metropolitan Museum of Art

In this paper, we present various case studies illustrating our use of highlight-based reflectance transformation imaging (H-RTI), which the Metropolitan Museum of Art has adopted to facilitate analysis of objects from archeological contexts. H-RTI is a type of computational photography, which is a term that refers to the generation of new digital representations based on data extracted from a sequence of digital photographs. Conservators at the Metropolitan Museum rely on this technique to interactively visualize precise surface information with great flexibility that is difficult to match with other available imaging techniques. H-RTI has proved useful for exploring and recording complex surfaces of ancient objects ranging from nearly microscopic to monumental in scale and made from a variety of materials, including stone, bone, ivory, ceramic, metal, and wood. Working with archaeologists and art historians, conservators at the Metropolitan Museum have used H-RTI to document and analyze tool marks and other evidence of manufacturing processes, to document the condition of objects, and to visually render obscured detail.

H-RTI is highly portable, and it is not dependent on a particular set of equipment or proprietary software. This flexibility makes the technique accessible to a wide variety of professionals, many of whom have engineered creative applications of H-RTI geared toward their particular research concerns. In this paper, we draw on examples of such applications and demonstrate how we use them to inform our approach to this imaging technique. As we discuss our work, which is carried out in the conservation lab, museum galleries, and the field, we also give attention to the issues we face during both data capture and processing and present our solutions. Furthermore, we show how the adaptability of H-RTI allows us to modify our capture methods based on the requirements of the object, limitations of the object's location, and the particular questions we are addressing. In addition to its value as a documentary and investigative tool for conservation, H-RTI has also been an effective tool for communicating our findings to other colleagues, improving our ability to work collaboratively within our institution and with colleagues at outside institutions.

Finding the Individual: GIS and Osteological Landmarks Analysis of Chalcolithic to Early Bronze Age Collective Burials at Bolores, near Torres Vedras, Portugal
Joe Alan Artz, University of Iowa, *Jennifer Mack*, University of Iowa, and *Katina Lillios*, University of Iowa

During the Chalcolithic period (3000–2200 cal B.C.E.) in Iberia, a complex society emerged, one characterized by fortified settlements, intensive agriculture, long-distance trade, and craft specialization. The collapse of this society coincided with the beginning of the Early Bronze Age. Understanding the cause of the collapse requires multiple lines of evidence, including human osteology. AMS dating, isotope chemistry, and skeletal analysis reveal information about the diet, homeland, and health of individual Chalcolithic and Early Bronze Age people. Identifying individual bodies in Chalcolithic burials, however, is difficult. The dead were extensively processed and often dismembered prior to interment, then buried in collective tombs that were reused for generations. The archaeological record, therefore, is one of fragmented, commingled bone beds rather than individual graves.

Bolores is a small rock-cut tomb where at least 38 individuals were interred between 2800–1800 cal B.C.E. No completely articulated individuals, and few articulated body parts, were found. The commingled bone bed, 35–45 cm thick, is capped by a layer of roof-fall boulders overlain by colluvium that filled the tomb to the roof. During 14 weeks of NSF-funded fieldwork between 2007 and 2012, about 6,000 bone and tooth specimens were excavated from the site, 70% of which were piece plotted using a total station. In 2013, bioarchaeologists compiled detailed data on the human remains, identifying not only the element but also the presence/absence of element-specific osteological landmarks that more precisely identify the part of the bone represented by each fragment.

GIS analysis, funded by the AIA Archaeology of Portugal fellowship of the lead author, had two goals. First, a three-dimensional model of the site was created using total station points on the cave interior, roof–fall boulders, and large stones composing three internal partitions. The model is useful for visualizing the physical space within which mortuary rituals were enacted. Second, geospatial analysis focused on identifying patterned groupings of skeletal finds by age group and body parts that might indicate derivation from a single individual. For example, four leg elements with mild periostitis, identified in the lab, were found to be proximal to one another, with the left elements stratigraphically below the right, suggesting placement or stacking of the elements in correct anatomical position during a single burial event. Our research develops a methodology that contributes to understanding the burial practices in late prehistoric Portugal and to the study of collective burials in general.

SESSION 7G: Colloquium
Food and Fuel: New Approaches to Environmental Exploitation in the Ancient Roman Economy

ORGANIZERS: *Robyn J. Veal*, McDonald Institute for Archaeological Research, University of Cambridge, and *Girolamo F. de Simone*, University of Oxford

Colloquium Overview Statement

The study of dietary resources and the ceramic vessels made and used to transport, cook, and serve foodstuffs has been used in the examination of the *chaîne opératoire* of food economics and trade in the ancient world. In relation to food production and consumption, however, fuel has rarely been considered. Wood and wood charcoal were the most common fuels in the ancient Mediterranean, however, ceramic vessels were being produced in environments where wood and wood charcoal would not have been available locally. In these cases various types of agricultural waste served as fuel. These "alternate fuels," especially olive pressings ("pomace"), were important in wood-poor areas, but they were also used in wood-abundant areas. Food was procured and produced on a domestic, and also an industrial basis in a range of environments. Fuel was a critical aspect of this process from start to finish. Recent research has helped illuminate the strong connectivity between the production and consumption of fuel within a regional economy, and in particular the role of food consumed as fuel and the fuel required in food production. This session aims to examine the importance of fuel in this "production-to-consumption" chain by introducing new areas of research relating to land exploitation and inter- and intra-regional dependencies for food and fuel supplies.

DISCUSSANT: *Elizabeth Fentress*, president of the International Association for Classical Archaeology, scientific director of FASTI Online

Fuel in Food Production and Consumption in the Roman Economy
Robyn J. Veal, University of Cambridge

Fuel is a little-considered part of the ancient economy, and fuel burnt in the production and consumption of food constituted one of its major uses in the Roman world. It was required on an industrial scale in bakeries, temples, and probably bars (*cauponae*) in the high Imperial period; it was also required daily in people's homes, mostly for cooking food (in the kitchen and in the triclinium) but also for sacrificing to the Lares, for other personal sacrifices to the gods, and for heating. Wood and wood charcoal were the main fuels in the Roman world, but nonwood fuels, including agricultural waste (esp. olive pressings), were also consumed. This paper reviews the types of fuel used in the preparation of food, both industrially and domestically, with special reference to examples from Pompeii. The relative heat values of different fuels are presented, together with an overview of cooking and baking technologies that consumed fuel at differing levels of efficiency. The aim of this paper is to move toward quantifying the amounts of fuel used in food preparation and consumption in the Roman period.

Clay-Creation-Carriage-Consumption: The *Chaîne Opératoire* in the Eastern Marmarica (Northwest Egypt): A Case Study

Heike Möller, University of Cologne, and *Anna-Katharina Rieger*, University of Halle-Wittenberg

In this paper, we take a closer look at arid regions in the Roman world that are poorly understood and characterized by scarcity of resources (esp. fuel) and low population density. Despite the apparent depleted environment in these areas, economic activity, including pottery production and the exchange of goods, is attested in many regions below the agronomic dry limit. With a case study from the eastern Marmarica (northwest Egypt), we show how, in a resource-poor environment, agricultural production, production of pottery, and transport on a regional and inter-regional scale worked in Graeco-Roman antiquity. A dry-farming system produced an unexpected economic surplus: products such as barley, wine, and figs (and their derivatives as preservative agents) suited the local and regional market and were packed and traded in amphoras. The latter were produced in high quantity all along the eastern Marmarican coast, using clay, water and fuel from nearby. To clarify the regional and transregional interactions, we focus on the ancient desert routes by analyzing the cistern sites as perfect markers of economic interchange for the region. The eastern Marmarica therefore was not only a producer and consumer but also a supplier and mediator from north to south, west to east, providing all resources needed from clay and fuel to foodstuffs and transport containers, even though the arid conditions made it unlikely.

Food as Fuel: The Scale of Artificial Light Consumption at Pompeii

David Griffiths, University of Leicester

The Roman period witnessed significant levels of urbanization and economic growth, consuming artificial light on a scale never seen before. Nocturnal activities are structured by access to artificial light; it modifies human interactions with one another and the urban environment and has a direct influence on architectural proportions, decoration, and the organization and use of space. The use of lighting equipment is closely related to a Roman, Mediterranean urban lifestyle.

The decision to burn food as light fuel is a significant one. It highlights a desire or necessity to extend the day, suggesting sufficient disposable wealth enabling the consumption of foodstuffs for nondietary requirements. In the ancient world, the cost of food (for the majority) as a relative proportion of personal expenditure was substantial. While olive oil was the predominant fuel for lamps in the Roman period, other fuels and additives, such as a range of animal fats and vegetable and nut oils, were consumed.

In this paper, I present the analysis of lighting equipment from the unique archaeological deposits at Pompeii to provide estimates for the scale of olive oil consumption in the provision of artificial light in a Roman urban setting. A variety of consumer groups are considered: domestic, commercial, religious, and leisure. This research forms part of a broader project testing the hypothesis that a reliable and affordable supply of fuel and lighting equipment was a major constituent in Roman urban living.

Food and Fuel in the *Villae* of Vesuvius: Scales of Production and Interdependent Economies in Roman Campania
Girolamo F. De Simone, University of Oxford

This paper aims to provide some insights into the role played by the Roman *villae* in the provision of food and fuel for the cities around Vesuvius. In particular, it argues that the *villae* on the slopes of the volcano were almost entirely devoted to the production of wine, while other foodstuffs and most of the fuel necessary for the cities around Vesuvius were provided by other territories within and beyond ancient Campania.

Calculation of the percentage of each estate's land area devoted to cultivation of grapevines, vs. that left for wood, is made using a Thiessen polygon approach. Calculation of the quantity of wine produced is assessed from the known capacity of the wine cellars. The high-resolution data buried by Vesuvius provides further evidence of complex land exploitation: extant remains of plowing furrows, trees in quincunx formation, and piles of olive pomace. Current estimates for the population then provide a springboard to assess whether the food and fuel produced was sufficient for the cities and their territories.

Finally, the paper proposes an economic model that hypothesizes an interregional system in which the communities of the plains of Campania and those of the Apennine Mountains were interdependent. This model challenges the traditional concepts of self-sufficiency as previously proposed for both the Roman country villa and the territories of individual cities.

SESSION 7H
City of Rome

CHAIR: *Lynne Lancaster*, Ohio University

A New Digital Reconstruction of the Roman Forum During the Empire: The Example of the Temple of Vesta
James E. Packer, Northwestern University (Emeritus)

Over the past eight years, my colleague (professor/architect/artist/digital renderer Gilbert Gorski) and I have assembled new reconstructions of the central plaza of the Roman Forum and the buildings around it. Officially approved by the Soprintendenza Speciale per i Beni Archeologici di Roma, our project is based on two and a half centuries of archaeological reports and monographs, unpublished materials, and on-site study/photography. For each of the 18 major buildings around the central forum, we have a short historical essay with accounts of the building's archaeology and structure, a new plan, and reconstructed elevations and views. We provide also elevations of the sides of the forum and general aerial and ground-level perspectives.

As a preliminary report on our conclusions and reconstructions, I discuss our findings on the Temple of Vesta.

King Numa (715–678 B.C.E.) was traditionally credited with the initial construction of this venerable shrine. Circular like an ancient hut, it housed the sacred fire tended by the six priestesses of Vesta, Rome's goddess of the hearth. Destroyed several times by fire, the temple was last rebuilt in the early third century C.E. by Julia Domna, wife of the emperor Septimius Severus. Giacomo Boni, director of the forum in the early 20th century, established an accurate plan for the Severan building, and from surviving fragments, graphically restored the facade as a Corinthian colonnade on a high, decorated podium. In the 1930s, Alfonso Bartoli, Boni's successor, rebuilt a section of Boni's facade, but Bartoli's existing reconstruction does not provide any information on three important problems: (1) What was the design of the original entrance? How did it relate to the external colonnade? (2) Were there decorative screens between the columns? (3) How does the Bartoli section provide evidence for the structure of the roof? Our answers to these questions provide the basis for an elegant—and relatively accurate—reconstruction.

As shown by this brief look at our investigation of the Temple of Vesta, the research underlying our reconstructions is complex but exciting. From our conclusions we digitally rebuild the forum's architecture, and, with our final publication, we hope that future visitors to the forum will find the site more comprehensible—and, we trust, far more rewarding—than has previously been the case.

The Creation of the Forum Romanum: Three-Dimensional Mapping and Rome's Flood-Prone Valley
Steve Burges, Boston University

The aim of this paper is to present accurate, three-dimensional maps of the Roman Forum valley during its earliest occupation. These provide instructive insights into the placement of the early principal structures in relation to the environmental factors that plagued Rome. In the last quarter of the seventh century B.C.E., the inhabitants of Rome's hills undertook a massive project to raise the floor of the swampy valley between the Capitoline and Palatine, creating an extensive public space there. Although scholars have produced countless maps of the forum, very few of these attempt to reconstruct the physical topography, especially at the time of the forum's initial construction. The models that this paper presents use geographic information systems (GIS) software to create the first forum reconstructions that exploit a light detection and ranging (LiDAR) survey—a set of laser-measured, modern elevation data. Alluvial and anthropic strata were subtracted from this LiDAR data on the basis of findings about their thickness together with hundreds of elevation points from excavation reports and geological studies. Almost all this research has been published within the last 20 years, but little of it has been used by mapmakers. Now georeferenced, digitally plotted in one projection, and entered into a single database for the first time, these data are available for investigators to manipulate the models in the light of future information or arguments. Processing of this data resulted in two three-dimensional digital terrain models (DTMs) of the Roman Forum area, one at the time of the first occupation of Rome's hills (ca. 1000–750 B.C.E.), and the other ca. 600 B.C.E. after the filling and paving of the valley. The DTMs also incorporate two-dimensional footprints of the known buildings, monuments, and infrastructure. The DTMs in

turn now make it possible to draw flood maps for the early city. These demonstrate the severe restrictions on city planning caused by frequent flooding and by the drainage from the surrounding hills into the valleys. The reconstructions also clarify the necessity of a massive earth-moving project at such an early stage in the city's formation. The paper closes with informed estimates of the quantity of fill required, the source of this material, and the labor involved. Altogether, these models of the Roman Forum enhance our appreciation of the planning of the city in its earliest years.

What Happened to Caesar's Building Projects after 44 B.C.E.?

Connie Rodriguez, Loyola University

Traditionally, Caesar's proposed monumental program at Rome should have been the prerogative of his successor—namely, Octavian. However, Antony was anxious to be identified as Caesar's successor as well. No doubt discounting the youth as a competitor for control of Caesar's partisans and building projects, Antony quickly began to pick up where Caesar had left off with Rome's embellishment in order to garner support. It would have been easy for Antony to seize the responsibility for Caesar's projects, since Octavian would have been occupied in trying to establish and coalesce a base of support, support that Antony already had because of his age and long association with Caesar.

This paper examines the partisans (11 men total) of Antony and Octavian and their building operations from the period between Caesar's death in 44 B.C.E. and the Battle of Actium in 31 B.C.E. It reveals that the partisans of Antony undertook operations involving projects planned by Caesar. It seems that their affiliation with Caesar prior to giving their support to Antony influenced their assignment of monuments, since, with the exception of Octavian himself, no one else undertook Caesar's projects.

Octavian kept his share of Caesar's projects to himself. Since he had only two, the Forum Iulium and Basilica Iulia, there was really nothing for him to assign to his partisans if he wished to take part in completing Caesar's program and compete with Antony. Therefore, Octavian assigned his partisans building projects that included several temples, though none of their projects was connected in any way to Julius Caesar.

This examination concludes with a comparison of the monuments undertaken by the partisans before 31 B.C.E. Octavian appears to have been given only a small share of Caesar's planned projects for Rome and had little, if any, influence over how the remaining projects were assigned. It was Antony who managed to gain the upper hand and keep most of Caesar's projects to himself.

Mercury on the Esquiline: A Reconsideration of a Local Shrine Restored by Augustus

Harriet I. Flower, Princeton University, and *Margaret M. Andrews*, University of Pennsylvania

Based on a reexamination of a small shrine to Mercury preserved in situ in the basement of an apartment on the Esquiline Hill in Rome, we present a number of

new insights about the character, chronological development, and historical importance of this local shrine in the popular Subura district, in both its republican and Augustan phases. We include detailed new photographs and scale drawings of the site, as well as reconstructions of its two attested phases of development. The hasty original publication did not give an accurate description either of the remains of the monument itself or of its surroundings within the topographical context of the ancient city.

First, we analyze the date and appearance of the republican shrine. The monumental travertine statue base originally held an over-life-sized statue of Mercury datable to the late second or early first century B.C.E. We then consider the extensive and expensive changes that were made when Augustus restored the site. The monument was apparently in disrepair, with its simple dedicatory inscription already removed. Augustus provided a new marble statue base and large podium, but this new monument was never completed. Augustus funded the renovations with money donated to him by the ordinary people of Rome on 1 January 10 B.C.E. These donations were part of an annual gift-giving ritual (*stips*) that expressed the affection and loyalty of the city's population for their princeps. Augustus used these funds every year to restore sacred sites dedicated to various gods across the city. The shrines are attested by literary sources and four extant inscriptions.

Our new analysis and rephasing of the archaeological and epigraphic evidence for this particular shrine, considered within the broader context of Augustus' initiatives paid for with New Year's monies, clearly demonstrates that the original interpretation of the monument is not tenable. The monument is not a shrine dedicated to the Lares Compitales, as thought at the time of excavation in the late 19th century. Rather, it is the only complete extant example of an Augustan New Year's shrine in the city. We highlight its unique aspects to provide a better-informed understanding of the monument itself, the circumstances of its construction and imperial renovation, and, ultimately, the relatively understudied but important series of Augustus' New Year's dedications as a whole.

The Porticus Absidata and Rabirius: A New Reconstruction and Interpretation of Traffic Management in the Forum Transitorium in Rome
Daira Nocera, University of Pennsylvania

Leading from the Subura into the Forum Transitorium, the Porticus Absidata is a horseshoe-shaped portico that is an integral part of the forum begun by Domitian in 85–86 C.E. While the constrictions of the entire area presented planning challenges, the entrance to the Forum Transitorium from the Subura was particularly problematic because of the position of the Temple of Minerva and the northeastern exedra of the Forum of Augustus. This paper analyzes the Porticus Absidata's shape in light of its attribution to the architect Rabirius, proposes a new reconstruction of its elevation, and analyzes its shape and elevation with regard to the Porticus Absidata's function as a passage between the Subura and the imperial forums.

The article published by Bauer ("Porticus Absidata," *Römische Mitteilungen* 90 [1983] 111–84) provided a thorough description of the remains but lacked a detailed interpretation of the structure. This paper offers a new reconstruction of the

elevation as a hypaethral structure with a two-story facade. This reconstruction answers the need to mask the outer wall of the exedra of the Forum of Augustus while concealing the off-center position of the portico.

The attribution of the Forum Transitorium to Rabirius, postulated by several scholars, is bolstered if one compares the plan of the forum with that of the stadium in the Flavian palace on the Palatine. While the design of the forum was constrained by the available space, the Palatine allowed for more freedom in planning. Therefore, the similarity of the plans should be considered deliberate and should be viewed against the background of the larger Domitianic building program.

Rabirian approaches to traffic regulation can be identified in the use of oblique passages and visual axes, which characterize the Porticus Absidata. Straight and oblique entrances are also employed in the Flavian palace, where they are used in accordance with different space functions and degrees of traffic. A comparison with the adjacent Forum of Augustus highlights the difference in traffic management between the Subura and the forums; traffic is directed along straight passageways in the Augustan forum rather than by the narrower diagonal passages in Rabirius' design.

The new reconstruction and analysis of the Porticus Absidata as a Rabirian design allow us to add new layers of interpretation not only to the monument itself but also to the larger building program controlled by Domitian.

Impact of Accumulation: Deified Emperors in the Roman Imperial Cityscape
Susan L. Blevins, Emory University

The built environment of deification in Imperial Rome provides fertile ground to explore the implications of monument prototypes and their later iterations for the construction of meaning. Complementing scholars who justifiably focus on monuments when constructed, I explore the transformative process that occurs when a monument unique at its inception is gradually subsumed within a group of monuments similar in conception and ideology. At least 11 temples or precincts to deified rulers, or *divi*, enlivened imperial Rome: the first to Divus Julius in 29 B.C.E., the second to Divus Augustus in 37 C.E., and the latest to Divus Marcus Aurelius after 181 C.E. A brief analysis of the topography, architectural form, and pedimental iconography of the Temples of Divus Augustus and Divus Julius, the theological and memorial models for later *divi*, reveals their dynastic significance at the time of construction as well as the suppression of the deceased's biography and personal history in favor of the sacred history and universalizing *aeternitas* of the *divus*.

Yet the cumulative nature of Roman deification in which new temples to deified emperors steadily augmented earlier temples to *divi* over the course of 200 years, visually and ideologically incorporated the individual gods into a group. From a late second-century perspective, I examine this assemblage of dynamic cult structures in the city of Rome, which together minimized dynastic associations by emphasizing a similarity among historical emperors not present in monuments commemorating the emperors' lifetime achievements. The conflation of the historical emperors into a single category of eternal state gods was furthered by the passage of time, as firsthand knowledge of earlier emperors faded while their

temples remained. Moreover, a Rome in which one temple to a *divus* marked the urban landscape presented a very different visual and mental image than a city dominated by 11 such spectacular buildings. I conclude that the accumulation of temples to *divi* in the city of Rome through the second century C.E. dramatically shifted the understanding of temples to individual gods, which together served not only as an index of the strength and endurance of the Roman empire but also as a selective, synchronic history of the imperial past crystallized in the Roman cityscape.

SESSION 7I
New Kingdom and Ptolemaic Egypt

CHAIR: *Duane Roller*, Ohio State University

Fracture Traces, Preservation of Tombs and Identified Risks in the Valley of the Kings
Katarin A. Parizek, The Pennsylvania State University

During my first trip to the Valley of the Kings, Egypt, in 1987, I became aware that tomb builders used fractures and fracture zones to excavate tombs. I informally field checked and photo documented fractures in the field in 1993. The Supreme Council of Antiquities granted permission to conduct formal field studies that began in 2002 with a general overall survey of the Valley of the Kings, Valley of the Queens, and Valley of the Nobles.

As my team's fieldwork regarding fracture traces progressed, we started to document and map rock falls, rock stability, rock failures, the interconnections between tombs, and evidence of flooding. We determined that it was not only necessary to divert floodwaters away from the entrances of the tombs but it was also necessary to divert floodwaters away from these fractures' intersections.

It is both essential to seal the ceilings and very important to seal the fractured land surface above tombs with chemically compatible grouts, grouts that will not damage the remaining decorations. This will protect the tombs from future water seepage, rock falls, and rock instability.

During our five official field seasons, we completely mapped and photographed the interiors of 11 tombs—KV-1 (Ramses VII), KV-6 (Ramses IX), KV- 8 (Merenptah), KV-10 (Amenmeses), KV-13 (Bay), KV-14 (Tausert and Setnakht), KV-32 (Tia'a), KV-34 (Thutmes III), KV-47 (Septah), KV-55 (Cache), and KV-62 (Tutankhamen)—and mapped portions of KV-9 (Ramses V and Ramses VI) and KV-11 (Ramses III), in an effort to help archaeologists and others identify risks. This was done to help with the preservation of the tombs and to make now closed and quite dangerous tombs visually accessible for future study.

This paper explores some of my team's findings and the importance of the need to continue our fieldwork as we interlink and piece this three-dimensional jigsaw puzzle together.

Egyptian Offering Scenes and Social Relationships
Vanessa Davies, University of California, Berkeley

Representations of the living presenting items of food and drink to deities and to the dead are ubiquitous in Egyptian temples and elite tombs. The conventional interpretation of the offering scene in funerary contexts is that the images of food and drink sustained the *ka* (life force) of the deceased, who was able to magically partake of the items' nourishment. This argument takes the depiction at face value and does not attribute any symbolic or representative meaning to the artistic motif. A new interpretation of the offering scene, one that goes beyond the literal and magical, is needed. As Angenot explains, Egyptian art uses concrete objects to represent intangible ideas ("A Method for Ancient Egyptian Hermeneutics (with Application to the Small Golden Shrine of Tutankhamun)," in *Methodik und Didaktik in der Ägyptologie* [Munich 2011] 262). I argue that the intangible idea that underlies the offering scene is the social relationship between the donor and the recipient.

I interpret the offering scene in light of the Egyptian concept of *hetep* ("offering" but also "rest," "contentment" in interpersonal affairs, and political "peace"). Building on Davies' argument (*The Dynamics of Hetep in Ancient Egypt* [Chicago 2010]) that *hetep* is the result of action in accord with *maat* (truth, justice, right order), I argue that images of the presentation of offerings (*hetep*) to the dead are symbolic of a relationship based on the proper (*maat*) action of the living that causes the deceased to be content or rest (*hetep*). The livings' ability to provide *hetep* for the deceased is symbolized by the passage of *hetep* (offerings) from the living to the deceased.

Written in the voice of the deceased, texts that request the living to give offerings (*hetep*) require that the living think about, remember, and interact with the deceased. These acts bring the deceased into a social relationship with the living and provide the contentment or rest (*hetep*) that the deceased desires. Accordingly, scenes that depict the presentation of the food and drink that sustain living humans are visual representations of the social relationship that serves to keep the deceased alive in the memory of the living. This interpretation can be applied also to images of the king giving offerings to deities. Such images are representative of the fact that the king maintains the religious cults and keeps alive the relationship between king and deity.

A Pharaoh, a King, and a Coin: Examining Power and Politics in Judaea in Light of an Archaeological Discovery at Bethsaida
Sarah K. Yeomans, University of Southern California

In 2012, archaeological excavations at Bethsaida in northern Israel revealed a very rare coin bearing the profile of Cleopatra from the Ptolemais-Akko mint. Produced in 35/4 B.C.E., the coin was minted during a period of heightened political tensions in the region as the fraught dynamics between Herod, Cleopatra, and Marc Antony played out on an international scale. The discovery of such a tribute to Cleopatra in a region that was part of Herod's kingdom invites an examination of the relationship between Cleopatra and Herod, specifically in the context of her bid for his kingdom as well as the delicate political balance Herod was obliged to

maintain to protect his territory, kingship, and politically crucial relationship with Marc Antony. Using historical sources and archaeological evidence, this paper situates this recent discovery in its historico-political context and investigates the possible motives for its production by the Ptolemais-Akko mint. It also examines this coin type's implications for our understanding of the complex relationship and power struggle between Queen Cleopatra VII of Egypt and King Herod of Judaea.

The Terracotta Figurines from Tell Atrib

Aleksandra Hallmann, The Polish Centre of Mediterranean Archaeology of the University of Warsaw

Egyptian terracottas are found in almost every Egyptian museum collection. Rarely, however, do they constitute a coherent corpus from a single place, which can be analyzed within a closed archaeological context. The Polish-Egyptian rescue excavations at Tell Atrib (suburban district of Benha in the Nile Delta) conducted in 1985–1995 and then in 1998–1999 yielded an abundance of this material. Because of its well-documented and secure provenance, as well as the undisturbed stratigraphy on many parts of the site, the material from Tell Atrib is an indispensable tool for comparative studies of coroplastic art derived from antiquities markets and spread among museums around the world.

The collection serves as a representative example of Lower Egyptian local art of the Hellenistic period and readily lends itself to a number of useful lines of inquiry. Since many of the pieces come from local workshops, it contributed to a better understanding of the industry of coroplastic material in Graeco-Roman Egypt, the remains of which were uncovered on the site.

This paper presents the results of a preliminary study of the terracotta figurines from the 1992–1995 and 1998–1999 campaigns, as the previous campaigns were already published (Hanna Szymańska, *Terres cuites d'Athribis*. Monographies reine Elisabeth 12 [Brepols 2005]).

The Microcontextual Analysis of the Foundation Deposits at Tell el-Ruba, Mendes, Egypt: Organic Preservation Within the Ancient Egyptian Delta

DeeAnne Wymer, Bloomsburg University

I present information on the continuing research into the remarkable preservation of organic and paleoethnobotanical materials from the Mendes site, Tell el-Ruba, Egypt. Mendes has been the focus of intense excavations over the past several decades and figures prominently in the archaeological literature and research into the growth and development of urban life in the delta as well as the role that Mendes played in the bureaucracy and trade network of pharaonic Egypt. Old Kingdom and Predynastic levels are preserved at Mendes above the water table, a rarity in the delta area, and excavations have focused on 1st Dynasty through Middle Kingdom levels, and have continued into levels documenting the eventual abandonment of the city in the Early Roman period. I have focused on the analysis of carbonized and uncarbonized plant and organic materials identification since

joining the project, under the direction of Donald B. Redford, in 2004. To date, the site has produced a copious and diverse paleoethnobotanical assemblage at all site levels, revealing important information on diet amd environmental and landscape shifts and insights into the sociocultural behavior of the site's ancient population.

This paper concentrates, however, on recent discoveries and assessment of unusual materials from ritual foundation deposits recovered in the 2010 and 2012 field seasons. Recent excavations have targeted stone foundations in the central precinct of the city that appeared to possibly represent traces of a temple dedicated to the Mothers of the Sacred Rams. Ritual foundation deposits were documented lying below two exposed corners of the building and a number of the deposits' artifacts were inscribed with the nomen and praenomen of Amasis (569–526 B.C.E.) of the 26th Dynasty. I introduced a set of specific field techniques to excavate the deposits and initiated laboratory procedures that resulted in the recovery of unusual organic materials preserved in a unique microclimate, including waxes and oils, textiles, traces of plant food offerings, paints/pigments, and other contents from the interiors of ritual vessels. This material, and the pattern of placement of objects within vessels and within the overall deposit, illuminates the nature of the rituals surrounding such special deposits.

The Ascendance of Thmuis: Geopolitics and Hellenism in Ptolemaic Egypt

Robert J. Littman, University of Hawaii at Manoa, *Jay Silverstein*, University of Hawaii at Manoa, and *Mohamed Kenawi*, Alexandria Center for Hellenistic Studies

Beginning in the fifth century B.C.E. and accelerating through the Ptolemaic period, power and wealth shifted from Mendes to Thmuis, 500 m to the south. Mendes dominated its nome politically and religiously for 2,000 years. Mendes led the resistance against Persian rule and was the capital of Egypt during the 29th Dynasty. Two factors dominate any discussion of this transition of power between Mendes and Thmuis: (1) the meandering of the Mendesian branch of the Nile, and (2) the influence of Hellenization on the organization of Egypt. The transition of power largely has been attributed to shifting Nile watercourses and the transition of the best available harbor from Mendes to Thmuis, in conjunction with the economic development and demographic growth of Thmuis under Hellenism. Based on our 2009–2013 excavations at Thmuis, we suggest a third factor: the destruction associated with the Great Rebellion in the early second century B.C.E. The archaeological remains at Mendes and Thmuis indicate that, until the reign of Ptolemy V, Mendes retained dominance as the religious and political center of the nome of Mendes. However, in the early second century B.C.E. there was at Thmuis an episode of destruction followed by an episode of redesign and growth. While premature for conclusions of theoretical primacy, it is apparent that Graeco-Egyptian sociopolitical relations associated with Hellenism should be considered in any model of the transition of power within the Mendesian nome.