

**NATIONAL ENDOWMENT
FOR THE HUMANITIES**

SAMPLE APPLICATION NARRATIVE



Collaborative Research
Institution: University of Chicago (Schloen)

NEH Application Cover Sheet

Collaborative Research

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APPLICATION INFORMATION

Title: *Excavations at Zincirli*

Application Number: RZ-51027-09

Grant Period: From July 2009 to June 2012

Field of Project: Archaeology

Description of Project: This archaeological project explores the 40-hectare (100-acre) site of Zincirli in southeastern Turkey, near the northeastern corner of the Mediterranean Sea, on the eastern side of the Amanus Mountains. Zincirli was the site of ancient Sam'al, an important walled city of the later Iron Age (ca. 900-600 B.C.) and capital of an independent kingdom. Previous excavations have produced many impressive finds and a good picture of the Iron Age royal citadel in the center of the site. Funds are sought to expand excavations at the site, especially in the large lower town, which was not previously investigated. There are very few Iron Age sites in the Levantine region at which large horizontal exposures of coherent architectural phases has been achieved, and Zincirli is ideally suited for this, promising to provide a qualitative leap in our understanding of Iron Age urbanism as a result of the quantitative expansion of excavation to cover entire urban neighborhoods.

BUDGET

Outright Request \$
Matching Request \$
Total NEH Request \$

Cost Sharing \$
Total Budget \$

GRANT ADMINISTRATOR

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STATEMENT OF SIGNIFICANCE AND IMPACT

Project title: Excavations at Zincirli (ancient Sam'al)

The excavation and publication activities of the Zincirli Expedition of the University of Chicago focus on a number of issues of great interest to archaeologists, particularly those related to *ethnicity, social identity, and urbanism*. During the later Iron Age (ca. 900 to 600 B.C.) the 40-hectare (100-acre) site of Zincirli (ancient Sam'al) was the heavily fortified capital of a small agrarian kingdom near the northeast corner of the Mediterranean Sea. The site provides an ideal laboratory (1) for examining ethnicity in an urban population of diverse origins affected by and adapting to cross-cutting cultural influences, (2) for examining the material correlates of identity-forming and identity-maintaining social practices, and (3) for examining Iron Age urban subsistence, household and neighborhood organization, and economic specialization, both before and during incorporation into the vast Neo-Assyrian Empire in the eighth century B.C. Large-scale horizontal exposures of coherent architectural phases can be accomplished very cost-effectively at Zincirli and can be augmented by unusually precise geophysical mapping of buried architecture, providing valuable new data to address these issues. Because the urban social fabric and overall economic organization cannot be understood by studying houses in isolation, a quantitative increase in excavated area, exposing entire neighborhoods, will yield a qualitative leap in our understanding of Iron Age urbanism.

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LIST OF PARTICIPANTS: EXCAVATIONS AT ZINCIRLI

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Casana, Jesse (Assistant Professor, Anthropology Department, University of Arkansas)

Fink, Amir Sumaka'i (Ph.D. candidate, Tel Aviv University, Israel)

Kıvançer, Evren (professional conservator)

Maher, Edward (Research Associate, Field Museum of Natural History, Chicago)

Mullins, Robert (Assistant Professor, Azusa Pacific University, California)

Parker, Karen (professional illustrator—no résumé provided)

Riehl, Simone (Research Scientist, Tübingen University, Germany)

Schloen, David (Associate Professor, Oriental Institute, University of Chicago)

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NARRATIVE

1. Substance and Context

The Zincirli Expedition of the Oriental Institute of the University of Chicago is a long-term, large-scale archaeological project to explore an important Iron Age city (ca. 900 to 600 B.C.) of the ancient northern Levant (classical Syria). This city is located in a fertile valley some 60 km south of the Taurus Mountains and just east of the Amanus Mountains in the Gaziantep province of southeastern Turkey (37° 6' N; 36° 40' E; see map). It is in the middle of the arc of the “fertile crescent,” in the Mediterranean climatic zone characterized by dry summers and rainy winters, with abundant resources for rainfed cereal agriculture in the valley bottom and for sheep-goat pasturage in the nearby highlands.

The modern Turkish site name is Zincirli Höyük. Its ancient name was Sam'al, meaning “the North[city]”—obviously so designated from the perspective of the West Semitic settlers coming from the south who founded it. The well-fortified site guards a major pass over the Amanus Mountains, a steep north-south mountain range that separates the north-Syrian interior from the Mediterranean Sea to the west. It therefore controlled the caravan traffic from inland Syria and Mesopotamia that traveled toward the Cilician plain and Mediterranean coast from the Euphrates River, 105 km due east, where the Euphrates comes closest to the Mediterranean. The heavily forested Amanus Mountains were famous in antiquity for their timber resources, especially pine and cedar, and ancient texts show that the inhabitants of Zincirli produced large quantities of timber that were shipped overland to the Euphrates and downstream to treeless Mesopotamia.

From 1888 to 1902, German archaeologists conducted five seasons of excavation at Zincirli and determined the basic architectural plan of the Iron Age city walls and gates, and of

several monumental buildings (palaces) on the upper mound in the center of the site. Dozens of sculpted stone pieces were recovered and are now in museums in Istanbul and Berlin, including statues of lions and sphinxes that had guarded palace or temple entrances, decorated column bases from the porticoes of royal palaces, and rows of relief-carved basalt orthostats (rectangular standing slabs) that had lined the walls of the principal gateways into the city. Several royal inscriptions carved on stone slabs or steles were also found, written in alphabetic Phoenician or Aramaic and in Akkadian (Neo-Assyrian) cuneiform. Although the nineteenth-century excavators' methods were quite good by the standards of the day, and their detailed architectural plans are a valuable resource for modern archaeologists, they excavated rapidly on a massive scale, with a staff of only a few archaeologists managing hundreds of workmen, and they had no understanding of debris-layer stratigraphy and ceramic dating methods, with the result that many details concerning the date and function of the structures they unearthed are unclear and it is impossible reliably to associate the artifacts they found with their findspots. Moreover, they focused their efforts on the monumental architecture in the center of the site, neglecting to excavate any ordinary dwellings in the large lower town.

Subsequent study of the pottery collected by the nineteenth-century excavators indicates that the site was originally settled in the mid-third millennium B.C. and existed as a small walled town (8 hectares/20 acres) during the late Early Bronze Age and the Middle Bronze Age, from ca. 2500 to 1500 B.C. Thereafter, occupation seems to have been scanty—perhaps only a small village—during the Late Bronze Age and early Iron Age, from ca. 1500 to 1000 B.C., but then the settlement was dramatically expanded and heavily fortified by a new Iron Age ruling dynasty founded by a man named Gabbar, who is mentioned in the inscriptions of his dynastic successors in the ninth and eighth centuries B.C. The original Bronze Age settlement mound was turned into

a royal citadel with its own massive gate and walls, while a circular outer wall (actually two concentric walls separated by a 7-meter gap) was constructed to encompass a large lower town with an urban area totaling 40 hectares (100 acres). The expansion and fortification of Sam'al in the tenth century B.C. is attributed by many scholars to the migration of Arameans from their putative homeland in the Euphrates River region to the southeast, since various Neo-Assyrian and West Semitic inscriptions attest that a number of Aramaic-speaking warlords established small kingdoms in Syria in this period, often at the expense of the Luwian-speaking “Neo-Hittite” rulers of Anatolian extraction who had dominated the area in the twelfth and eleventh centuries, having inherited power from the Hittite Empire that ruled the region in the thirteenth century B.C.

Cuneiform texts and local Sam'alian inscriptions show that, like the other kingdoms in the region, Sam'al was incorporated into the Neo-Assyrian Empire in the eighth century B.C. and paid annual tribute to Assyria. It was initially ruled by the Assyrians through native vassal kings, who continued the dynasty of Gabbar, but at the end of the eighth century, Sam'al was “provincialized,” with the removal of the native dynasty and the installation of an Assyrian governor, which resulted in a major architectural remodeling of the royal citadel. The site was eventually abandoned several decades later, in the latter part of the seventh century, so that in the entire lower town and in most places on the citadel mound, Iron Age remains form the terminal phase. There is a small area of subsequent occupation (ca. 600 to 300 B.C.), only a few hundred square meters, on the highest point of the citadel mound—probably a Persian-period villa or small fortress. Even there, however, no ceramic evidence was found of occupation after the Hellenistic conquest in the late fourth century B.C.

In 2006, the University of Chicago's Oriental Institute began excavating the site of Zincirli under the direction of David Schloen, who holds the excavation permit from the Republic of Turkey. The expedition intends to conduct two-month field seasons annually for ten years, from 2006 to 2015. Three field seasons (2006, 2007, 2008) have now been completed with the financial support of the Neubauer Family Foundation and the University of Chicago, resulting in the excavation of 2,200 square meters of the latest phases of occupation in seven different areas of the site. The results to date have been extremely good, with a number of significant discoveries (see appendices). Additional funding is now sought from NEH to expand excavations in the large lower town (which was completely ignored by the earlier excavators) because the recent field seasons have shown that Zincirli is unusually well suited to large horizontal exposures of well-preserved urban architecture, and a quantitative increase in the scale of excavation will produce a qualitative leap in our understanding of Iron Age urban life and culture. The urban cultural fabric and its socioeconomic organization cannot be understood from a limited sample of individual houses but requires careful study of clusters of adjoining houses spanning thousands of square meters—indeed, it is necessary to study entire neighborhoods or *insulae* bounded by streets and open spaces, and in different parts of the city, because these urban neighborhoods were coherent architectural and social units whose inhabitants interacted and cooperated in ways that actually constituted Iron Age “urbanism.” In order to grasp the economic and social structures through which the city functioned and cohered for hundreds of years as a populous and thriving settlement, we need to examine not just households (their size, layout, use of space, production and storage facilities, and faunal, botanical, and artifactual remains) but interlocking groups of households (their shared facilities, overall architectural

arrangement, and degree of isolation from other neighborhoods) whose socioeconomic relationships can be modeled on the basis of ethnohistorical analogies.

More specifically, the University of Chicago's Zincirli Expedition will focus on the following research issues:

1. Settlement Chronology and Context

Although a very basic settlement chronology was established by the old German excavations, a much more refined stratigraphic sequence is needed to determine the phases of occupation at the site and to isolate the architecture and the artifactual assemblages associated with each phase. After three years of excavation, the Zincirli expedition has explored only the final phase of the Iron Age occupation in the seventh century B.C. In future seasons, a step-trench in Area 3 ("Southern Citadel") on the southern slope of the royal citadel will be enlarged and deepened to obtain a complete sequence from the Early Bronze Age to the end of the Iron Age, when the site was largely abandoned. Another step-trench will be opened on the summit of the upper mound, in Area 2 ("Eastern Citadel"), where there is a sequence of Persian-period occupation. Enough material has been collected to show that the pottery of the site, although broadly similar to the pottery of other north-Levantine sites, is highly local in character, with many idiosyncrasies and very few imported wares. This is in keeping with Zincirli's relatively isolated geographical position in a narrow valley hemmed in by mountain ranges. The total quantity of pottery and the range of forms are actually quite limited, at least in the latest Iron Age phase, suggesting that metal and wooden vessels may have played a larger-than-normal role at this site. Radiocarbon samples are being taken from every phase in order to establish an absolute chronology for the architectural phases and the local ceramic sequence. Occasional imported wares also provide a means to link the local sequence to ceramic sequences elsewhere.

This aspect of the research, although fundamentally descriptive, is essential for understanding the site within its wider context, as well as for making temporal correlations from one excavation area to another within the site. Not only will it provide an essential framework for future archaeologists who excavate in the Zincirli valley, but it is essential for the regional survey project of the Zincirli Expedition (a related project not included in this proposal), in order to date the periods of occupation of the ca. 100 settlement sites in the Zincirli valley and neighboring uplands. The Expedition will use the Zincirli ceramic sequence to understand the settlement history of the region, comparing the Zincirli material with surface artifacts collected from surveyed sites identified on the ground and via satellite imagery. A chronologically refined settlement history will be of great value for understanding the economic and political functioning of the kingdom of Sam'al in the Iron Age, and of earlier polities in the region, by indicating how many and what kind of settlements existed in the Zincirli region in a given period. With a sufficiently precise chronology, the wider settlement history, and the architectural changes at Zincirli itself, can be related to broader political and cultural changes of the Bronze and Iron Ages, such as textually attested imperial conquests and population migrations.

2. Population Composition and Cultural Influences

Zincirli is located in a border region between the ancient Anatolian and Syrian cultural zones. Bounded on the north and west by the towering Taurus and Amanus mountain ranges, it is in the most northwesterly region of habitation of Semitic-language speakers and in many periods had cultural ties with Syrian population centers to the south and east. But within the royal dynasty of Iron Age Sam'al were kings who bore non-Semitic Luwian (Indo-European) names—themselves often the sons or fathers of kings with West Semitic names—reflecting the powerful political and cultural influence of Luwian-speakers of Anatolian extraction who had migrated

southward into the region centuries earlier from across the Taurus Mountains under the aegis of the Hittite Empire (ca. 1400 to 1200 B.C.) based in central Anatolia. After the collapse of the Hittite Empire, various “Neo-Hittite” rump kingdoms emerged that were ruled by Luwian-speaking elites—in particular, Carchemish on the Euphrates River (125 km east of Zincirli), formerly the seat of the Hittite viceroy who ruled Syria on behalf of the empire, became in the early Iron Age (ca. 1200 to 900 B.C.) the capital of a powerful local kingdom with a Luwian-speaking dynasty. The presence of Luwian hieroglyphic inscriptions at various sites in the Zincirli region (but not at Zincirli itself) suggests that the Zincirli region was initially part of the Luwian-dominated Carchemish kingdom, or at least was controlled by a local Luwian-speaking Neo-Hittite elite, until a West Semitic-speaking “Aramean” dynasty took over in (probably) the tenth century B.C. and chose the old Bronze Age mound of Zincirli (Sam'al = “North”) as the capital of their kingdom. But the new dynasty promptly adopted Neo-Hittite iconography and decorative styles similar to those of Luwian-ruled Carchemish, as shown by the basalt orthostat reliefs lining the newly built gates of their city, indicating the continuing prestige of that cultural tradition. In 2008, another large relief-carved orthostat, very similar in style to those of Iron Age Carchemish, was found by the University of Chicago expedition.

But the placename Sam'al for Zincirli appears much earlier in an Old Assyrian text from the Middle Bronze Age, indicating that there was already a West Semitic population in the area long before the Hittite period and the Luwian domination, a fact confirmed by the artifacts and architecture of the Middle Bronze Age “Amorite” (West Semitic) royal capital, with strong links to inland Syria, excavated at the nearby site of Tilmen Höyük, and by similar artifacts found at Zincirli itself. Clearly, over the course of the Late Bronze Age and Iron Age there was some form of coexistence and mutual cultural adaptation of Luwian and West Semitic populations,

with Luwian elites politically dominant for several generations early in the Iron Age and West Semitic elites dominant thereafter. Moreover, despite a long period of coexistence (and perhaps even intermarriage, as has been suggested to explain the intermingling within the Sam'alian royal dynasty), the original ethnolinguistic identities were not forgotten and could surface in various forms—a phenomenon that is widely attested in other historical periods, including the modern Middle East. A striking example of this was found in the summer of 2008, when the University of Chicago expedition unearthed a late eighth-century B.C. funerary stele in the outer part of the lower town, a stele on which was carved an Aramaic alphabetic inscription containing many typical West Semitic features that was authored by “Kuttamuwa servant of Panamuwa,” a Sam'alian high official with a Luwian name in the service of a Sam'alian king with a Luwian name (a king who is known from other inscriptions to have had close relatives with West Semitic names). Kuttamuwa, who is depicted on the stele seated in front of a table laden with food, enjoins upon his descendants the duty of bringing him food offerings in a manner that is very familiar in traditional West Semitic culture. But Kuttamuwa refers to both Semitic and Anatolian gods and he was clearly not buried in a communal tomb to which the offerings were brought, as in traditional West Semitic culture, but was most likely cremated (based on parallels at other contemporary sites)—an Indo-European practice abhorrent in the West Semitic world (e.g., in ancient Israel and early Judaism). It seems that Anatolian names and Anatolian gods were still favored, even at this late date, along with distinctive Anatolian mortuary practices and beliefs about the afterlife. Perhaps these names and practices were adopted even by people of non-Anatolian extraction for some political or social reason, just as people today will adopt “foreign” names and identities to enhance their social standing.

The archaeological question is whether these enduring social identities held by intermingled ethnic groups, and the cultural influences exerted by these groups on one another, can be detected in their material remains. The University of Chicago expedition will approach this question through the careful analysis of spatial and temporal patterns of architecture, artistic styles and iconography, cuisine (detected via pottery and botanical and faunal remains), mortuary customs, and other social practices revealed by extensive exposures of the residential lower town. The goal is not to identify specific households or individuals in reductive terms as permanent members of this or that monolithic, crudely reified “ethnic group,” but to study processes of group identity-formation and identity-maintenance from the point of view of the nonverbal social practices and habits that in every society accomplish the socialization of individuals into communities. A man like Kuttamuwa no doubt had multiple identities—as a royal official who patronized certain artistic and literary forms, as can be seen in his stele; as an Aramaic-speaker, who was intimately familiar with the cultural traditions and assumptions transmitted in that language; as patriarch of his household, who established his funerary cult in a domestic area that seems to be an annex of his own house; and as a “Luwian,” who was conscious of his heritage (real or imagined) in the archaic political and religious elite who once dominated the region.

3. Socioeconomic Organization of the Iron Age Lower Town

The Iron Age population and cultural interactions at Zincirli can be studied on a scale and at a level of detail that is unusual in Near Eastern archaeology because of the large quantity of Iron Age urban architecture that is readily accessible just under the modern surface. A modern village has grown up over the western part of the citadel mound and lower town, but at least 20 hectares are available for excavation and for geophysical remote sensing. A geomagnetic survey

in 2007 conducted by Jesse Casana and Jason Herrmann of the University of Arkansas has produced a remarkably vivid picture of the buried streets and wall foundations of the city. A complementary ground-penetrating radar survey was done in 2008 in the northern lower town (the magnetic gradiometer detects the iron-rich basalt used ubiquitously in wall foundations, while the radar detects compacted floor and street surfaces revealed by their differential densities). Using the geophysical map as a guide, excavation of the northern lower town commenced in the summer of 2008 with an initial exposure of 650 square meters in two different areas (Areas 5 and 6). In most places in the lower town there is about 1.5 meters of accumulation, representing two architectural phases (remnants of mudbrick structures on stone foundations). A given area can be excavated down to virgin soil in one or two field seasons, depending on the complexity of the stratigraphy. Over the next seven years, the Zincirli Expedition intends to excavate at least 4,000 square meters in various parts of the lower town, providing a sample of architecture and artifacts large enough to permit meaningful conclusions about the social and economic organization of the city.

There are very few if any Iron Age sites in the entire north-Levantine region (indeed, in the entire Middle East) at which large-scale exposures of residential urban districts have been achieved. The Zincirli excavations, profiting from easy access to relevant and well-preserved Iron Age strata of both the Assyrian and pre-Assyrian periods, will provide entirely new kinds of evidence for the organization and use of urban space, answering questions about population density, subsistence practices and food storage, craft production and economic specialization, livestock stabling, household size and composition, and neighborhood relations (as shown by multi-house architectural arrangements in relation to shared courtyard spaces and other shared facilities). At Zincirli, geophysical surveying methods (especially magnetometry and ground-

penetrating radar) have been shown to produce an unusually clear picture of buried structures in the lower town, at least for the latest architectural phases (late eighth and seventh centuries B.C.), augmenting the data obtained from excavated areas, which in turn can be used to interpret the geophysical maps of unexcavated areas.

A key question has to do with the existence (or not) of kin-based or quasi-kin modes of social organization. In other words, were there “urban clans” or patron-client household groupings governed by politically powerful patriarchs, forming economically autonomous (and mainly agrarian) subcommunities within the larger city, on the model of traditional Islamic cities or medieval Mediterranean cities in Italy and elsewhere (see Schloen 2001)? In contrast to this model of urban farming clans (agrarian extended-family groups) that had moved within the city walls but had retained their traditional mode of life and their kin-based (fictive or not) patrilineal and patrilocal social organization, was there instead a more bureaucratic mode of organization, with economically specialized urban households interacting and competing as individual units and integrated by means of some form of market economy or by a top-down “command” economy? A careful study, not just of individual houses, but of groupings of houses will provide an answer to this question.

Zincirli also provides the opportunity to examine changes in socioeconomic organization over time. The lower town was in existence for about 300 years and witnessed three political stages, from independence under the rule of a local king, to vassal status within the Assyrian empire, to the removal of the local political elite and direct rule as an Assyrian province with an Assyrian governor (and possibly also some measure of deportation and population replacement, although this is not textually documented for Sam'al, as it is for other Levantine kingdoms). Did these major political shifts, from independence to provincialization, leave a visible mark on

ordinary urban districts, reflecting the reorganization of urban elites and economic production in line with the demands (or incentives) created by the empire? Was there an upsurge in interregional trade as a result of the *pax Assyriaca*, causing a restructuring of the Sam'alian economy with ripple effects at the household level? Or was daily life and the use of space in the lower town largely unaffected, even though the royal citadel (and the members of the royal court) undoubtedly experienced drastic changes?

The Zincirli excavation project therefore intersects with a number of issues of great interest to archaeologists, especially those related to ethnicity, social identity, and urbanism. The site of Zincirli provides an ideal laboratory (1) for examining ethnicity in an urban population of diverse origins affected by and adapting to cross-cutting cultural influences, (2) for examining the material correlates of identity-forming and identity-maintaining social practices, and (3) for examining Iron Age urban subsistence, household and neighborhood organization, and economic specialization, both before and during incorporation into the vast Assyrian Empire. Large-scale horizontal exposures of coherent architectural phases, which can be accomplished very cost-effectively at Zincirli and can be augmented by unusually precise geophysical mapping of buried architecture, will provide valuable new data to address these issues.

2. History and Duration of the Project

The University of Chicago's Zincirli Expedition began in 2006 and has conducted three field seasons, each lasting two months, in the summers of 2006, 2007, and 2008. It is financially supported by the University of Chicago's Oriental Institute and by gifts from the Neubauer Family Foundation. A total of 2,200 square meters have been excavated in seven different areas (see map in appendix). Five of these areas are in the lower town (Areas 1, 4, 5, 6, and 7) and

require only one more season of excavation to be completely excavated down to virgin soil, after which the areas will be expanded horizontally (and new areas opened) to enlarge the sample of lower-town architecture. The other two areas (Areas 2 and 3) are on the deeply stratified upper mound (the Iron Age royal citadel) and will be excavated for the duration of the project, ultimately reaching Early Bronze levels. The project will continue for at least seven more annual field seasons, from 2009 to 2015, and possibly for a number of years thereafter.

NEH funding is sought for the next three years, from 2009 to 2011, in order to enlarge the lower-town excavation areas for the purpose of answering the research questions outlined above. After that, the project will continue with ongoing private funding from the Neubauer Family Foundation, augmented by additional public or private grants.

The nineteenth-century German excavations at Zincirli were published in five large volumes and there have been a number of secondary studies since then (see bibliography in appendix). The University of Chicago expedition will publish a series of final report volumes on its work in the "Oriental Institute Publications" (OIP) series, of which the first volume is currently in preparation and will be published in 2010.

The Oriental Institute provides office space and salaries for research assistants in Chicago. The expedition is also in the process of constructing a permanent dig house near Zincirli in Turkey. The expedition has full access to the library, GIS lab, publications office, and other research facilities of the Oriental Institute, a leading institution devoted to Near Eastern archaeology and philology.

3. Staff

The director of the Zincirli Expedition is Dr. David Schloen, who is Associate Professor of Syro-Palestinian Archaeology in the Oriental Institute and the Department of Near Eastern Languages and Civilizations of the University of Chicago. He holds a Ph.D. from Harvard University and has 20 years of excavation experience at deeply stratified Bronze and Iron Age sites in Israel and Turkey. He has taught at the University of Chicago since 1994. He holds the Zincirli excavation permit from the Turkish Ministry of Culture and has overall responsibility for the fieldwork, analysis, and publications of the project. In addition to the two months each year spent at the site, he devotes 20% of his time to the project in the remainder of the year; thus one-third of his faculty salary (100% for 2 months plus 20% for 10 months = 33% overall) is designated in the University of Chicago's cost-share in the proposal budget.

The associate director of the project is Amir Fink, a Ph.D. candidate in archaeology at Tel Aviv University (Ph.D. expected in early 2009). He also has extensive excavation experience at sites in both Israel and Turkey. He assists the director in supervising field operations, determining excavation strategy and staffing, and in writing and editing the excavation reports. He also serves as an area supervisor during the field seasons, in charge of the Area 3 stratigraphic step-trench on the southern slope of the citadel mound. In addition to the two-month field season, he devotes several weeks of his time each year to the project (not included in the proposal budget).

In addition to the director and associate director, the Zincirli Expedition's core staff of 10 people includes the following additional 8 persons:

- Dr. Jesse Casana is an Assistant Professor in the Anthropology Department of the University of Arkansas. He is an expert in geophysical and remote-sensing techniques

and in landscape archaeology. He and his students have conducted geophysical surveys at Zincirli in 2007 and 2008. He will continue the geophysical mapping of the site in future seasons, not only to delineate buried structures in the lower town as described above, but also to investigate extramural areas by: (1) checking for the existence of a water-filled moat around the city wall (for which there are preliminary indications in soil sections); (2) investigating the roads that led into the city (where the magnetic survey has revealed what appears to be a walled processional way lined by orthostats leading into the main south gate); and (3) prospecting for subterranean Bronze Age tomb chambers in a limestone hill 700 meters west of the site, where such a tomb was discovered (and looted) by local villagers in 2007. In a related project (not part of this proposal), Dr. Casana will conduct a regional site survey in the area around Zincirli, investigating highland-lowland interactions in a region that is ideally suited for this.

- Dr. Edward Maher, a Research Associate at the Field Museum in Chicago, serves as the expedition's faunal specialist. His research has focused on the animal economy of Iron Age urban sites.
- Dr. Robert Mullins is an Assistant Professor at Azusa Pacific University in California. He has 30 years of excavation and publication experience at many different Bronze and Iron Age sites in Israel and Turkey. He serves as an area supervisor and roving stratigraphic consultant during the field seasons and will contribute to the stratigraphic analyses published in the excavation report series.
- Dr. Simone Riehl is a Research Scientist at the Institute for Prehistory and Quaternary Ecology of Tübingen University. She serves as the expedition's botanical specialist. In addition to subsistence crops and what they reveal about the Iron Age economy, she has a

particular interest in weed species (e.g., from weed seeds mixed with harvested grain) that are sensitive to temperature and moisture and so provide information about ancient climate and the local ecology.

- Sebastiano Soldi is a Ph.D. candidate in Near Eastern Archaeology at the University of Pisa. He is a specialist in the pottery of Iron Age Syria and serves as the Zincirli Expedition's pottery specialist.
- Benjamin Arubas is a Senior Research Associate at the Institute of Archaeology of the Hebrew University in Jerusalem. He is an architectural surveyor with extensive experience at many sites in Israel and Turkey. In each field season at Zincirli, he and his team of assistants draw all of the stone architectural features unearthed during the season.
- Karen Parker is a professional illustrator with 30 years of experience in a variety of contexts. She draws all of the artifacts for which illustrations will be published. (Potsherd profiles are drawn by an automated scanning system, and a 3D laser scanner is used for some artifacts that do not require manual illustration.)
- Evren Kıvançer is a professional conservator with extensive field experience at a number of archaeological sites in Turkey. She is responsible for the conservation and restoration of all artifacts excavated by the Zincirli Expedition. The recent excavations have unearthed a large number of bronze and iron artifacts, in particular, for which expert conservation is required.

A collaborative staff of this kind, representing a variety of archaeological specialties, is necessary to achieve the goals of the project. Of these staff members, the faunal specialist (Maher), botanical specialist (Riehl), and pottery specialist (Soldi) are paid \$2,000 for each two-month field season (see budget). The architects (Arubas + assistants), conservator (Kıvançer),

and illustrator (Parker) spend varying lengths of time at the site during each season and are paid \$4,000, \$3,000, and \$1,500 per year, respectively. In addition to the time spent at the site during the field season, the faunal, botanical, and pottery specialists spend several weeks each year writing up their results for publication in the excavation report. The other unpaid staff members (Casana and Mullins) have full-time faculty appointments at their respective institutions; they spend similar amounts of time on the project but are not included in the proposal budget.

In addition to these 10 core staff members, the expedition employs a full-time Turkish site guard who lives on the site and is paid a salary mandated by the Turkish Ministry of Culture (\$7,000 per year). In each field season, various groups of graduate and undergraduate students (not listed individually) participate in the excavation. Most of them obtain their own travel grants to fund their participation in the project (e.g., the University of Chicago gives its Ph.D. students \$3,000 per year for summer research). The Zincirli Expedition typically pays travel expenses for 2 students, however, in addition to the 10 core staff members. The proposal budget thus allows for 12 roundtrip airfares to Turkey per year (\$2,000 per person, based on current fares), plus \$500 per person for local travel (bus fares, vehicle rental, fuel), plus \$500 per person for food and accommodation. Travel, food, and accommodation expenses for 6 persons ($6 \times \$3,000$ per person = \$18,000) would be paid by NEH and for the other 6 by the University of Chicago on a 50:50 cost-sharing basis.

In addition to the academic staff (including students), who numbered 30–40 during the 2007 and 2008 field seasons and will be roughly the same size in future seasons, the expedition plans to employ 50 local workmen for seven weeks of excavation each summer (5 days per week = 35 digging days) during the three field seasons covered by the proposal, from 2009–2011. (The academic staff is on site for a full two months or more, to allow time for drawing plans and

sections and writing their reports after excavation has been completed.) The cost per worker is \$25 per day, according to the minimum wages and social security benefits mandated by the Turkish Ministry of Culture. The proposal budget requests funding for half of the workforce (25 men \times \$25/day \times 35 days = \$21,875 per year) from NEH and the other half paid for by the University of Chicago as its cost-share. NEH funding would permit a larger workforce and a consequent expansion in the total excavated area, which is essential for addressing the research questions outlined above.

Some expenses of the Zincirli Expedition stem from related activities not covered in this proposal. These include the costs of the regional site survey, architectural restoration at Zincirli for tourism and educational purposes, the expedition's dig house, publication production costs, and salary expenses for David Schloen's research assistants, which are paid by the Oriental Institute of the University of Chicago and do not appear in the proposal budget.

4. Methods

The basic excavation unit of the Zincirli Expedition is the 10 \times 10-meter square (with one-meter balks left unexcavated between squares to provide vertical section profiles, resulting in an actual excavated area of 9 \times 9 meters. Debris layers and architectural features are recorded and excavated as separate stratigraphic units (representing distinct episodes of construction, deposition, or destruction) in a relatively fine-grained manner, so that in a seven-week excavation period a given 10 \times 10-meter square may produce a hundred or more stratigraphic units. Most individual artifacts are pinpointed on plans and, in addition, all floors, streets, and other surfaces on which there are artifacts or occupational debris in primary context are excavated according to a 1 \times 1-meter fine grid with dry-sieving of all of the soil (i.e., botanical

remains, bones, pottery, and other artifacts are collected and recorded to the nearest square meter). Water flotation of soil samples is done systematically for each 1-meter fine-grid square and opportunistically elsewhere, wherever concentrations of charred botanical remains are observed, in order to retrieve the botanical light fraction for archaeobotanical analysis and the heavy fraction (e.g., ceramic and lithic flakes, microfauna, etc.) for activity-area analysis. An efficient pump-driven three-tank recycling flotation apparatus was custom-built for the expedition in 2007. Secondary and tertiary deposits (e.g., fill layers) are not normally fine-gridded and are sieved at a 1:5 ratio (one bucket of soil in five).

Each 10 × 10-meter square is supervised and recorded by a “square supervisor” (usually a Ph.D. student) assisted by a “square assistant” (usually an undergraduate student), with 4 or 5 workmen to do most of the digging. The square supervisors report to an “area supervisor” (usually an advanced Ph.D. student or a Ph.D. archaeologist) who is in charge of a contiguous excavated area consisting of 2–5 squares (i.e., 200–500 square meters). At present, there are seven excavation areas at Zincirli. With 50 workmen, the Zincirli Expedition would excavate 10–12 squares (1,000–1,200 square meters) per season, distributed among the various excavation areas. The workmen dig for five days per week. On the sixth day there are no workmen and the supervisors update their plans, section drawings, and notebooks and finish washing and sorting the finds. The registrar, photographer, illustrator, and conservator work every day to record and store the finds, which are then studied by the various specialists.

These collection and recording methods are geared towards the collection of material that is very precisely differentiated, both spatially and temporally, in order to answer the research questions outlined above. Although the gross architectural layout of the site would go some distance towards answering questions about socioeconomic organization, a more detailed room-

by-room analysis of activity areas, floor-debris buildup and resurfacing, and architectural remodeling is necessary in order to detect more subtle patterns of activity, and changes in those patterns over time. Understanding Iron Age urban subsistence strategies and practices of production, distribution, and consumption both within and between households requires not just the mapping of visible artifacts but the careful collection and analysis of faunal, botanical, lithic, and ceramic material scattered in the soil—and it requires extensive horizontal exposures in order to provide a large enough sample of houses, streets, and neighborhoods from which to draw conclusions.

In addition to excavation, the Zincirli Expedition will conduct ongoing geophysical surveys of the site and its surroundings, as discussed above. The existing geomagnetic map reveals the latest architectural phase in striking detail, while ground-penetrating radar holds some promise for detecting more deeply buried structures. Comparison of excavated areas with the geophysical maps will provide data for interpreting those maps, i.e., for understanding what a particular magnetic or radar signature represents architecturally.

All of the data from the Zincirli Expedition, including plans and photographs, is being entered into an innovative online database system called OCHRE (Online Cultural Heritage Research Environment; <http://ochre.lib.uchicago.edu>). OCHRE was developed by expedition director David Schloen and his wife Sandra Schloen to meet the particular needs of archaeologists and philologists. It is designed to handle spatially organized hierarchies of observations of the kind that are common in archaeology, while permitting a highly flexible yet structured (and thus easily searchable) description of individual items. It is a multi-project, multi-user, password-protected system that is accessible from anywhere on the Internet (it uses a Java client program on the user's computer to access a high-end centralized XML database server

managed by the Digital Library Development Center of the University of Chicago Library). OCHRE is currently being used by several different projects at the Oriental Institute and elsewhere. At Zincirli, as in most places in Turkey, even in rural regions, high-speed DSL service is available; thus the expedition staff logs into OCHRE from the dig house on a daily basis to enter data and search the database. The data being entered is instantly stored in the database server in Chicago, where it is backed up and secured by a professional system administrator.

5. Final Product and Dissemination

The Zincirli Expedition will publish its results in a series of peer-reviewed final report volumes in the “Oriental Institute Publications” (OIP) series. The first volume is currently in preparation and is to be published in 2010. These volumes will provide a comprehensive description and discussion of the Zincirli architecture, stratigraphy, and small finds, phase by phase, according to a traditional format. Because of space limitations in the printed volumes, many of the photographs, plans, and detailed descriptions will be published only online, via the OCHRE database system. The online publication will be freely accessible and will provide access (via browsing and querying) to all of the data collected by the expedition, including the narrative portions and catalogues of the printed report volumes as they appear. OCHRE has been designed to allow a seamless transition from password-protected data visible only to authorized staff members during the initial period of data recording, analysis, and editing, to publicly visible data that anyone can see (via a simplified user interface), i.e., the portion of the project’s data that has been designated as visible to the public at large. The online database data can therefore be released in stages, coordinated with the final report volumes.

Expedition staff members (including the director and associate director) will, from time to time, also publish interpretive journal articles concerning one aspect or another of the site and the finds (e.g., an article on the inscribed “Kuttamuwa Stele” found in 2008 will be published in 2009 in the *Bulletin of the American Schools of Oriental Research*). All of the primary descriptive data will, however, be collected in a coherent and comprehensive series of multi-authored final report volumes to be published at regular intervals (one every three years).

6. Work Plan

NEH funding is sought for the fourth, fifth, and sixth of ten planned field seasons at Zincirli, i.e., for the 2009–2011 seasons in a long-term excavation project spanning the years 2006–2015. The work plan is very simple and is basically the same each year: (1) in July and August, seven weeks of excavation and geophysical surveying at the site followed by a week or two to finish processing the finds and write reports; (2) in October and November, fund-raising and planning for the next summer season by the director and associate director; and (3) from September to June, entry and editing of data (including GIS maps and photographs) in the online database, data analysis by various specialists, and the writing of contributions to the final report volumes (and individual journal articles) by the core staff and their assistants.

Contributions to the first final report volume are due in October 2009, after which they will be edited by the director and associate director, who will submit the volume to the press in March 2010. A similar schedule will be followed for subsequent volumes at three-year intervals, i.e., contributions to the second report volume will be due in October 2012, with publication in 2013.