Fall 2019
Undergraduate Research Apprenticeship Positions

-AREAS/CONCENTRATIONS FOR RESEARCH-

Archaeology
Bioarchaeology
Environmental Social Science
Evolutionary Anthropology
Global Health
Hydrological and Climate Modeling
Linguistics
Museum Studies
Religious Studies
Sociocultural Anthropology

Students should be certain to review all positions as many opportunities are combined with one or more other concentrations or disciplines.

Highlighted positions can be completed remotely and by online students.
Research Project or Internship Title:
Anthropology Collections Practicum Research Apprenticeship

Academic Discipline:
Archaeology
Bioarchaeology
Museums
Anthropology
Sociocultural Anthropology

Project Description:
This hands-on internship is ideal for students who are interested in the possibility of working in museums and those who would like to gain experience with material culture collections (ethnographic, archaeological, physical anthropological, and archival). Interns will learn standard museum collections practices relating to the research, cataloging, and care of anthropological artifacts by working with the anthropology collections curated at ASU.

Most of the anthropological collections at ASU are curated by the Center for Archaeology and Society Repository and include material from the subdisciplines of archaeology, physical anthropology, and sociocultural anthropology. The majority of the collections are archaeological and were acquired in the course of systematic research at thousands of sites, primarily from Arizona and the Southwest.

Student’s Duties:
Students will be working closely with faculty, graduate, and advanced undergraduate supervisors in assisting with care and curation of Anthropology Collections. Please indicate your areas of interest on your application (you may choose more than one).

1) If students are interested in working with archaeological collections, they will gain experience with a variety of ceramics, lithics, groundstone, and ornaments recovered from archaeological excavations. These projects have associated archives including field notes, laboratory analyses, photographs, maps, and reports. The students will help to create permanent records in the catalog database. To do this they will learn how to catalog, categorize and describe artifacts, label, and photograph artifacts and objects. Transitioning artifacts to archival packing and preparing appropriate curation spaces are part of the activities.

2) If students are interested in working with physical anthropology collections*, they will gain experience with a variety of materials and will learn about these collections, the archaeological excavation collections that recovered these, and appropriate care and documentation for the collections. They will learn identification and documentation procedures while assisting with preparing and verifying the research catalog records. Transitioning collections into appropriate archival packing and storage materials will be included in these activities. *Osteology course preferred.

3) If students are interested in working with ethnographic, or archival records, they will gain experience with professional and research materials related to projects and collections. Students will learn the basic principles of sorting, inventoring, arranging, describing, preserving, and re-housing historical and archival materials.

Required Qualifications or Pre-requisites:
There are no pre-requisites for this internship. This internship is ideal for students looking for ways to gain more experience in the field of anthropology through experience with material culture collections.
We are looking for students with the following personal qualities: punctuality, ability to commit to and keep a regular schedule, attention to detail in record keeping, a sense of curiosity, and a desire to learn.

Recommended qualifications: Strong writing and research skills, experience using Excel spreadsheets, and the ability to work with a team are highly recommended. If you have some skills in photography or previous experience in a museum or museum-like setting, or data entry, record keeping, be sure to mention that in your application.

**Project/Internship Location:**
SHESC curates Anthropology collections in three different buildings. A variety of collections are curated at each location and internship opportunities provide experience with a variety of materials. > Center for Archaeology and Society Repository (Alameda Building), 734 W. Alameda, Suite 120, Tempe, AZ 85282. Free parking available. Students should allow time in their schedules to get back and forth between CASR and campus for classes.

**Hours Per Week or Days and Times Needed:**
You can receive academic credit for this internship. If you can commit to 6 hours a week you will receive 2 credits; if you can commit to 9 hours a week you can receive 3 credits. You must commit to at least 6 hours a week to qualify for this internship. Acceptance of an applicant is also based on schedule coordination. Be sure to specify your days and hours of availability in your application. [M-F, 8-5, no evening hours, no weekend hours.]

**Project Supervisor:**
Melissa Powell

**Supervising Faculty:**
Melissa S. Powell, Ph.D., Assistant Research Professor/ Curator of Collections

**Contact Information:**
[melissa.powell@asu.edu](mailto:melissa.powell@asu.edu)
480-965-6957
Center for Archaeology and Society Repository, 734 W. Alameda Drive, Suite 120, Tempe AZ 85282
Research project or internship title: Archaeology of Pilgrimage

Academic discipline:
Archaeology
Religious studies

Project description:
The History of the Archaeology of Pilgrimage around the globe.

Student's duties:
Collect published sources and bibliographies on the archaeology of pilgrimage. Assess trends in the methodologies and interpretations in pilgrimage archaeology.

Required qualifications or pre-requisites:
None

Project/internship location:
SHESC 226 or Remote

Hours per week or days and times needed:
6-12 hours per week.

Project supervisor:
Joel Palka

Supervising faculty:
Joel Palka

Contact information:
Joel.Palka@asu.edu
Research project or internship title:
ASU ADVANCE: Equity among Faculty

Project description:
ASU ADVANCE is a social science project that examines how ASU's explicitly interdisciplinary environment affects the academic life course of faculty. We are particularly interested in how diverse faculty members build their careers in this context.

Student’s duties:
• Assisting research associate with transcribing recorded faculty interviews on the interaction of interdisciplinarity and intersectionality in their careers.
• Assisting research associate with collecting and entering data about faculty, using the academic curriculum vitae in particular.
• Attending and contributing to research design meetings to ensure program goals are being met

Required qualifications or pre-requisites:
• Familiarity with Microsoft Suite, especially Word and Excel
• Ability to work with minimal supervision
• Working knowledge of Google Drive

Project/internship location:
Matthews Center, 203WF, flexible

Hours per week or days and times needed:
Flexible; most work can occur on your own time.

Project supervisor:
J. Nalubega Ross

Supervising faculty:
Monica Gaughan

Contact information:
Dr. Monica Gaughan
School of Human Evolution and Social Change (SHESC)
Mail Code: 2402
Phone: 480-727-9973
Research Project or Internship Title:
Ceramic Metatypology of Northwest Mexico

Academic Discipline:
Archaeology

Project Description:
This project involves the development of a regional ceramic metatypology for the northern frontier of Mesoamerica. By metatypology, we mean a method of identifying the common terms in which wares, types, and variants are described, and that also includes a generalized characterization of the production sequence of ceramic types. The application of such a classification system to localized datasets will result in the creation of integrated regional-scale datasets that can be used to establish a regional chronology and to investigate social phenomenon at the intraregional scale. In frontier settings archaeological research often focuses on interregional interaction or, for the northern frontier in particular, concentrates on understanding localized dynamics. Therefore, this project will advance frontier research by allowing us to address how complex societies developed in Northwest Mexico, as well as the role intraregional interaction may have played in this process.

This research will result in the creation of a ceramic metatypology and corresponding “digital-ceramoteca” that will be published and publicly available on both a project website and the Digital Archaeological Record (tDAR.org). The metatypology will then be applied to site assemblages across Northwest Mexico using tDAR to create integrated ceramic datasets, which can then be used to analyze the timing and adoption of regional ceramic traditions and interpret the chronological patterns of those traditions. The adoption of a production sequence approach to ceramic analysis has made it possible to identify and define the variables associated with each step in the production sequence, as well as the attributes that characterize each variable. We are seeking assistance in moving the metatypology from paper to digital format with: (1) the creation of a project website that will house the visual guide to the ceramic types included in the metatypology, and (2) the construction of an ontological framework within tDAR that will be used for data integration. If you are interested in ceramics and/or cyber-archaeology, then this is the project for you!

Student’s Duties:
- Assist in the creation of a project website that will house an online guide to ceramic types included in the metatypology that will accompany a project and datasets accessible through tDAR
- Upload photos, enter text and data, and create links between webpages using the Weebly website builder
- Create excel files of ceramic attributes to be uploaded to tDAR as ontologies that will be used to upload and integrate datasets
- Upload ceramic data from the La Quemada-Malpaso Valley Archaeological Project and possibly other projects into the metatypology framework
- Meet weekly with supervisor and possibly attend additional meetings with other project participants

Required Qualifications or Pre-requisites:
- ASB 222 (required) and ASB 337 (desired)
- Spanish fluency is desired, but not required
Experience in website design and development is a plus

**Project/Internship Location:**
SHESC 110

**Hours Per Week or Days and Times Needed:**
3-9 Hours/Week

**Project Supervisor:**
Dr. Andrea Torvinen

**Supervising Faculty:**
Dr. Andrea Torvinen

**Contact Information:**
atorvine@asu.edu
Research Project or Internship Title:
Citizen Sociolinguistics: Piloting a novel methodology for capturing naturally occurring instances of small talk

Academic discipline:
Sociocultural Anthropology
Linguistics/Linguistic Anthropology

Project description:
Data Collection
We are testing a language data collection method that requires students to document natural instances of conversation that they overhear in public settings. Students will be assigned short language phrases (or words) to collect over a 4-6 week period of time.

First, students will need to do CITI (Human Subjects) training and receive their certificate (the class will provide all materials for this).

Second, students will do background reading on this particular method of data collection. Third, students will do background reading on the particular kinds of language/phrases we are targeting. Fourth, students will collect data for the majority of the semester/session, doing data entry and checks along the way.

Required qualifications or pre-requisites:
Current ASU student.
Access to a smart device (e.g., cell phone or tablet) for data entry.
Access to a computer for course materials.

Project/internship location:
Online students

Hours per week or days and times needed:
Depending on units requested.

Project supervisor:
Cindi SturtzSreetharan

Supervising faculty:
Cindi SturtzSreetharan

Contact information:
csturtzs@asu.edu
Research Project or Internship Title:
Communications Undergraduate Intern

Project Description:
Under the supervision of the Marketing and Communications manager, this position will provide professional-level support for the School of Human Evolution and Social Change, with a primary focus on generating student (perspective, current and alumni) content across school social media accounts, email and editorial channels.

Major Areas of Responsibility:
- Social media (Instagram, Facebook, Twitter, YouTube)
- News articles and student/alumni profiles
- Email content
- Possible opportunities for blogs/vlogs
- General marketing support

Essential Duties:
- Interfaces with staff, faculty and students to develop student and alumni stories (of various styles and mediums) and content.
- Pitches, researches and creates consistent content and photography (and/or videography) for social media (multiple posts per channel, per week), including a focus on student experience photos on Instagram.
- Helps create and organize content for the school newsletter.
- Assists with additional marketing communications projects as assigned, including research, event support, etc.

Desired Qualifications:
Skilled in effective verbal and written communication.
Skilled in social media platforms, trends, best practices.
Evidence of previous professional work in these channels.
Able to handle changing priorities and multiple, tight deadlines.
Able to make good decisions that align with ASU and SHESC brand guidelines and identify/up-channel important communication and issues.
Experience with photography or videography a plus.
Familiarity with Adobe Creative Suite (Photoshop, InDesign, Illustrator, Premier) a plus.
Experience with AP style a plus.

Project/internship location:
West Hall, 1000 Cady Mall, Tempe, AZ 85281

Hours per week or days and times needed:
3-9 hours per week. Exact times/days will be set around selected interns.

Project Supervisor:
Aaron Pugh

Contact Information:
Aaron.Pugh@asu.edu
Research Project or Internship Title:
Culture, Health, and Environment Laboratory Intern

Academic Discipline:
Global Health
Sociocultural Anthropology

Project Description:
The Culture, Health, and Environment Laboratory (CHEL) has several ongoing projects each semester that combine methods and theory from anthropology, public/global health, and sustainability. Primarily, our work focuses on the Global Ethnohydrology Study (GES), a transdisciplinary, multi-year, multi-site research project that examines cross-cultural perceptions of water issues in the context of globalization, urbanization, and climate change. Our work this semester will primarily focus on water sharing as a form of disaster response. CHEL’s internship program operates each semester with approximately 15 undergraduate interns who work collaboratively with each other and graduate students in data management, analysis, and tool design. The program is designed to encourage students to return in subsequent semesters to develop more advanced research skills.

Student’s Duties:
As a result of our many projects, students’ duties will vary. Each student will likely participate on more than one project within the lab. First time interns will begin with data entry and data quality management of the 2018 GES. Returning interns will be working on qualitative data coding of GES surveys. Other duties and projects may develop throughout the semester.

Required Qualifications or Pre-requisites:
There are no requirements or pre-reqs; we welcome interns at all stages of undergrad study. *Please indicate if you are fluent in languages other than English on your application. *Please indicate if you have any experience with analytic software (e.g., R, SPSS, SAS, MAXQDA, NVivo, UCInet) ** Please indicate if you are a returning intern on your application.

Project/Internship Location:
SHESC 265

Hours Per Week or Days and Times Needed:
3 hours per week minimum (preferably in one time block). Exact times will be set around selected Interns.

Project Supervisor:
Charlayne Mitchell

Supervising Faculty:
Amber Wutich and Alexandra Brewis

Contact Information:
cfmitche@asu.edu
**Research Project or Internship Title:**
Global Impact Collaboratory Intern

**Academic Discipline:**
Global Health
Sociocultural Anthropology

**Project Description:**
The Global Impact Collaboratory (GIC) partners with international development organizations to figure out how we know when development projects are actually “working” from the perspectives of the people on the ground they are meant to be helping. The GIC has implemented signature projects that feature the innovative application of social research methods for monitoring, evaluation, and learning of projects across a range of topical areas. We endeavor to provide the world’s best learning laboratory for training the next generation of development practitioners. We are looking for undergraduate research interns for two projects:

(1) To code qualitative interview and focus group discussion transcripts for our signature programs. There may be opportunity to work on future research within the Global Impact Collaboratory or in an allied research group after completion.

(2) To conduct quantitative research based on clinic records and surveys in a community-based participatory research study on Prenatal Care Utilization in partnership with the Refugee Women’s Health Clinic.

**Student’s Duties:**
(1) Interns will be trained on qualitative data analysis methods and the coding software MAXQDA. Interns will be expected to reach proficiency in coding and then go on to independently code transcripts of interviews and/or focus group discussions. Other duties and projects may develop throughout the semester.

(2) Interns will be trained to work with electronic health information systems EPIC and ChartMaxx in data abstraction. Interns will be expected to independently enter data from medical records into a survey format for a prenatal care utilization and breastfeeding study and quantitative analysis. Interns will be trained in quality control and quantitative analysis. Other duties and projects may develop throughout the semester.

**Required Qualifications or Pre-requisites:**
None
Preferred: SSH/ASB 100: Introduction to Global Health or ASB 102: Introduction to Sociocultural Anthropology
- Please indicate if you are fluent in languages other than English on your application.
- Please indicate if you have worked in the Culture, Environment, and Health Lab or qualitative data analysis
- Please indicate if you have worked in medical records, or quantitative data entry or analysis in your application.

**Project/Internship Location:**
SHESC 265

**Hours Per Week or Days and Times Needed:**
9 hours per week
(1) During SHESC operational hours (8am – 5pm) for lab access
(2) May be more flexible times and locations

**Project Supervisor:**
N/A

**Supervising Faculty:**
Dr. Roseanne Schuster

**Contact Information:**
roseanne.schuster@asu.edu
Research project or internship title:
Global Inequalities and Health

Academic discipline:
Global Health
Social Anthropology

Project description:
This project explores how various forms of social and economic inequality around the world shape health risks and create health disparities. A major focus of the project this year is to characterize ethnic and caste disparities across a range of low-income countries and analyzing the consequences of such disparities for health and well-being in diverse contexts.

Student's duties:
Weekly attendance at one-hour lab meetings. Completion of weekly lab activities and preparation for lab meetings (2-3 hours + 1 hour lab meeting). In the project, apprentices will gain experience in developing a codebook on worldwide ethnic disparities and finding information on ethnic inequalities in low- and middle-income countries around the world. It also will involve using excel and analysis software to analyze relationships between ethnic inequalities and health.

Required qualifications or pre-requisites:
We are seeking motivated and meticulous apprentices who can work both independently and in a team.

Project/internship location:
MCENT 203N

Hours per week or days and times needed:
3-4 hr

Project supervisor:
Dr. Daniel Hruschka

Supervising faculty:
Dr. Daniel Hruschka

Contact information:
dhruschk@asu.edu
Research project or internship title:
Heat treatment strategies in the production of stone tool technology

Academic discipline:
Archaeology
Evolutionary Anthropology

Project description:
The heat treatment of stone to enhance flaking attributes was an important advance in the adaptive toolkit of humans and a major step in pyrotechnology. The earliest evidence for this is the heat treatment of silcrete ~164 ka at the Middle Stone Age site, Pinnacle Point 13B in South Africa. Recently, our research team has developed a new method to identify heat treated stone tools using 3D microscopy and silicon peels that record roughness measurements from the surface of artifacts. Currently, the origin and complexity of heat treatment technology is debated and its role in the production of specific stone tool technologies is little understood. This research focuses on determining which stone tool technologies are being heat treated prior to production and how this technological strategy varies over the MIS 5 to MIS 4 transition in South Africa. In order to accomplish this, we will be applying our new method to a range of stone tool technologies that includes cores, flakes, backed pieces, and microblades. We will utilize a Keyence VR3200 to scan silicon peels taken from the surface of artifacts from the site of Pinnacle Point 5-6. Our results will have implications for hominin technological strategies during the MIS5/4 transition and the role heat treatment may have played in the production of formal toolkits.

Student's duties:
- Utilize a 3D microscope to scan replica stone tool surfaces
- Maintain an organized spreadsheet

Required qualifications or pre-requisites:
None - all skills will be taught in the lab.

Project/internship location:
SHESC Building/ASU Tempe Campus

Hours per week or days and times needed:
Minimum of 3 hours per week.

Project supervisor:
John Murray

Supervising faculty:
Curtis Marean

Contact information:
jkmurra5@asu.edu
Research project or internship title: Managing Boom-Bust Cycle of Fracking in Appalachia

Academic discipline: Environmental Social Science

Project description: Appalachia has faced economic stress for decades, if not centuries. Beginning around 2010, hydraulic fracturing, otherwise known as fracking, became economically viable due to natural gas prices and technological advances in Ohio, West Virginia, and Pennsylvania. Since that time numerous counties have experienced tremendous fracking activity, but it is unclear how or whether these communities will be able to leverage the fracking boom to create more sustainable futures.

Student's duties: The student will work with an interdisciplinary team to generate literature reviews, analyze data, and present results for professional and community audiences. The student will assist in interview transcription and coding.

Required qualifications or pre-requisites: None

Project/internship location: SHESC 265 or online

Hours per week or days and times needed: 3-6 hours per week

Project supervisor: Abigail York

Supervising faculty: Abigail York

Contact information: Abigail.York@asu.edu
**Research Project or Internship Title:**
Motif Analysis of Romos Red-on-Buff Pottery

**Academic Discipline:**
Archaeology

**Project Description:**
During the Classic and Epiclassic periods, red-on-buff pottery was widely distributed across archaeological sites in the northern frontier region of Mesoamerica. This ceramic type is distinguished by its red painted designs on a buff, brown, or cream slipped background. The motifs used to decorate Romos vessels share many similarities to those also used to decorate incised-engraved and resist pottery recovered from the same spatiotemporal contexts. This project seeks to determine whether chronological patterns in the frequencies of certain motifs or motif categories (e.g. geometric, animalistic, or anthropomorphic) can be recognized using statistical analysis. If successful, this project will make it possible to identify varieties within the Romos type that, in turn, will increase the accuracy of ceramic seriation at La Quemada and for the region as a whole. Additionally, the project database will allow questions regarding several social processes to be addressed. For example, what variation can be observed in the execution and abstraction of motifs? What can the distribution of vessels possessing different types of motifs tell us about the social status and cultural identification of La Quemada residents?

Since research apprentices will participate in the creation and organization of the database, they will be strongly encouraged to choose a research question of their own to pursue as a thesis topic or to present at a regional/national archaeological conference. If you are interested in ceramics and the symbolization of designs used to decorate prehispanic pottery, then this is the project for you!

**Student's Duties:**
Assist in the organization of a ceramic motif database, including drawings of common motifs and their derivatives, using Microsoft Excel and other software programs
Quantify and analyze frequencies of sherds containing different motif types or categories of motifs
Develop their own research question to address using data from the motif database

**Required Qualifications or Pre-requisites:**
ASB 222 (required) and ASB 337 (desired)
Spanish fluency is desired, but not required

**Project/Internship Location:**
SHESC 110

**Hours Per Week or Days and Times Needed:**
3-9 hours/week

**Project Supervisor/Supervising Faculty:**
Dr. Andrea Torvinen

**Contact Information:**
atorvime@asu.edu
Research project or internship title:
Neanderthal Animal Exploitation in the Paleolithic

Academic discipline:
Archaeology

Project description:
The animal remains from Kobeh Cave and Kunji Cave, located in the Zagros Mountains of Iran, show evidence of mountain goat and sheep hunting by Neanderthals during the Middle Paleolithic. Neanderthal hunting and butchery behavior in upland mountainous environments remains unknown. This analysis will look at the frequencies of bone elements and species present in the animal assemblage to better understand how Neanderthals utilized animal resources.

Student’s duties:
Students will help classify fossil animal remains from a Pleistocene Neanderthal cave site. Through this, students will learn how to identify and code bones found at archaeological sites. Students will also learn to use a ArcMap, a GIS program, to draw fossilized animal bone fragments onto bone templates and aid in the archaeological analysis of Kobeh Cave.

Required qualifications or pre-requisites:
None

Project/internship location:
SHESC

Hours per week or days and times needed:
Minimum 3 hours per week.

Project supervisor:
Patrick Fahey

Supervising faculty:
Curtis Marean

Contact information:
bpfahy@asu.edu
**Research Project or Internship Title:**
Population specific patterns of genetic integration of the human dentition

**Academic discipline:**
Bioarchaeology

**Project description:**
The project uses 3D scans of dental arcades to infer patterns of genetic integration and heritability for human dental measurements and morphological data types. The ultimate goal is to provide a quantitative genetic foundation to studies that use human dentition as an evolutionary proxy.

**Student's duties:**
Scanning and photographing cast specimens, data extraction from 3D models, web design and implementation.

**Required qualifications or pre-requisites:**
Experience with dental anatomy a plus.

**Project/internship location:**
SHESC 302

**Hours per week or days and times needed:**
Variable

**Project supervisor:**
Chris Stojanowski

**Supervising faculty:**
Chris Stojanowski

**Contact information:**
cstojano@asu.edu
Research project or internship title:
Predictive modeling of isotope and abiotic variables for understanding human adaptations to environmental change

Academic discipline:
Archaeology
Global Health
Bioarchaeology
Hydrological and Climate Modeling/ GIS/ Remote Sensing

Project description:
The APU (Andean Paleomobility Unification) Project is a two-year examination of isotopic values and environmental conditions throughout the complex hydro-geological systems of the Andes. Baseline isotopic values of strontium and oxygen are being compiled for water, soils, flora, and fauna in the natural environment and from cultural features such as puquios (wells) to develop predictive isoscape models that will allow us to probabilistically assign archaeological skeletons or artifacts to likely places of origin. In addition to facilitating sample geolocation, the isotope data will be used in conjunction with climate and paleoclimate data to understand how prehistoric Andean societies adapted to periods of intense flood and drought cycles that may have impacted their water and food security.

The project has several components: 1) meta-analysis/ mapping all bioarchaeological and environmental isotope data in the region (focusing on the oxygen isotope system and the water cycle in the fall of 2019); 2) pulling field data from summer 2019 collaborators into the database; and 3) isotopic analysis of summer 2019 field baseline data in the ACL and Keck Labs. In year 2, we will be creating isoscapes for the strontium and oxygen isotope systems based on the new baseline data points and sharing those with the public and in peer-reviewed journals. This project is a collaboration between the Archaeological Chemistry Laboratory and PI Beth K. Scaffidi, pursuant to support from the National Science Foundation.

Student's duties:
The project needs 2-3 students with some experience in GIS or remote sensing to assist with data compilation, hydrological and ecosystem modeling, and geostatistical modeling. The APU project maintains raster and vector data on elevation and environmental variables in the Peruvian Andes, which now needs to be scaled up to include the entire range, at various spatial resolutions. The project has recently been granted access to 10,000 km2 of high-resolution time-series RGB/ NIR data through the Planet's Research and Educational Program, and the apprentice will be assisting with data organization, procurement, and pre-processing of this and other new data sources. Students will also be plotting isotope data and x, y coordinates from publications within and beyond anthropological sources. They will also help with testing the field data collection app and gain some experience in preparing and analyzing isotope samples, if desired. Finally, there will be opportunities for presenting research results at conferences, assisting with peer-review journal submissions, and field data collection during the summer 2020 season.

Required qualifications or pre-requisites:
Students should have a working knowledge of GIS and/or Remote Sensing principles, either in QGIS, ESRI (ArcMap, etc.), ENVI or similar software packages, gained either through an introduction to GIS class or through intensive field or lab work. Beth Scaffidi has taught several Intro to GIS classes and will be training students on advanced methods, but students should know enough fundamentals of GIS/ RS to be able to work independently if needed.

Students should have a broad interest in understanding how societies adapt to challenging environments, and how changing climates can impact social structure, cultural practices, migration, and health. Students are encouraged to apply their own expertise and interests to the project, so students
with prior coursework in hydrology, geosciences, biogeochemistry, climate change, ecology, global health, and computer-based modeling would be particularly well-suited to maximize the experience.

**Project/internship location:**
SHESC building, office 318/ Archaeological Chemistry Lab. After the assignments have been explained, apprentices can complete the work from other locations.

**Hours per week or days and times needed:**
5+ hours/week, at least 3 of which must be in-person at SHESC. Additional hours can be completed from other campus locations or times as appropriate.

**Project supervisor:**
Beth K. Scaffidi

**Supervising faculty:**
Kelly Knudson

**Contact information:**
beth.scaffidi@asu.edu
Research Project or Internship Title:
Research on Teotihuacan as an Ancient City

Academic Discipline:
Archaeology
Museum Studies

Project Description:
Teotihuacan was one of the largest ancient cities in the New World, and there is a long tradition of ASU research there (including an on-site lab holding collections from over 40 field projects). One of the initial projects in the 1960s, the Teotihuacan Mapping Project, recorded the locations of thousands of structures and made systematic collections of artifacts from each one. For whatever reason, this project left many of the analyses unfinished. We are completing data entry for several types of data that were recorded on paper forms but never entered into a computer format (including ground stone analyses, figurines and jewelry production), updating GIS files, and creating literature reviews of past work on particular artifact types. These studies are revealing important new information about life at the ancient city of Teotihuacan.

Student's Duties:
Students will do both general data entry and data-checking, and background research on a related topic. Students will be expected to complete data entry into computer databases, and to scan paper forms to pdf. Students may also perform basic analyses of the artifact categories that they are most interested in, such as GIS mapping the spatial distributions of artifact classes, and checking whether artifact classes are correlated with ceramics from specific time periods, or with particular types of buildings. Once familiar with the site and datasets, students may develop individual research projects.

Required Qualifications or Pre-requisites:
Completion of or current enrollment in ASB 222 or 223 (or a higher-level archaeology class) required. Previous experience with Access or other database programs, experience with GIS programs, computer graphics, completion of ASB 337, and the ability to read Spanish are not required. However, they are considered pluses and should be noted on your application.

Project/Internship Location:
SHESC 104 - Mesoamerican Archaeology Lab

Hours Per Week or Days and Times Needed:
3-9 hours/week, days and time flexible

Project Supervisor:
Dr. Michael E. Smith

Supervising Faculty:
Dr. Michael E. Smith

Contact Information:
mesmith9@asu.edu
Research project or internship title:
Strontium isoscape construction in southern Africa for archaeological provenience studies

Academic discipline:
Archaeology

Project description:
This research program focuses on using plant and ostrich eggshell samples to create an environmental chemistry model for isotopes of the element strontium on the landscape. The downstream objective is to determine the geographic origin of human and animal remains from South Africa, Namibia, and Botswana archaeological sites by comparing the chemistry of enamel, bone, and shell to what the model predicts will occur in a given location. But it all starts with data collection for the model, which entails washing plant samples with deionized water to remove dust, and burning of the plant samples to ash in a laboratory furnace. These initial processing steps will take place in the Archaeological Chemistry Laboratory (ACL) in SHESC, under the supervision of Dr. Andrew Zipkin and ACL director Prof. Kelly Knudson. A second aspect of laboratory work for this project focuses on preparation of ostrich eggshell for strontium isotope analysis. Shells are photographed, cleaned using a rotary tool abrasive and sonic bath, and drilled to collect precisely weighed amounts of powder for analysis. Both plant and shell samples are then further prepared using standard wet chemistry techniques (acid dissolution, centrifugation, and multiple dilution steps) before senior personnel begin instrumental chemistry.

Student’s duties:
Lab note taking, washing lab glassware, operating an analytical balance, operating drying ovens, hot plates, and furnaces, operating a centrifuge, operating an electric rotary tool (Dremel), making solutions/dilutions of acids, pipetting solutions, working in a clean lab environment, and assisting in method development. After completion of one semester as an intern, interested and qualified students may have the opportunity to learn more advanced techniques and conduct original research.

Required qualifications or pre-requisites:
Required: At least one successfully completed course in anthropology, geology, or chemistry. Interns will be required to complete laboratory safety training prior to beginning lab work. Preferred: Relevant coursework plus chemical laboratory experience and enthusiasm for learning more advanced methods in analytical chemistry as the project progresses.

Project/internship location:
Archaeological Chemistry Laboratory and Keck Laboratory for Environmental Biogeochemistry

Hours per week or days and times needed:
Minimum 4 hours per week, 6-8 hours preferred, with flexible days and times. Previous work by student interns for this project has typically been done in 2-3 hour blocks between 12 PM and 6 PM. Please note: This project is seeking two student interns/assistants for Fall 2019.

Project supervisor:
Andrew Zipkin

Supervising faculty:
Kelly Knudson

Contact information:
andrew.zipkin@asu.edu
Research project or internship title:
3D GIS Image processing/Building high-resolution archives of archaeological sites through the production of photomosaics

Academic discipline:
Archaeology
Archaeoinformatics

Project description:
This project works on data collected by the HOMER consortium. Accurately documenting stratigraphic sections at archaeological sites is critical for understanding site formation processes, depositional episodes and past human behavior. One way of doing this is by photographing sections so researchers can study the deposits remotely. There have been various attempts throughout the years to produce high resolution images, however, these methodologies failed to control the light sources which resulted in inaccurate representations of the sediment color. Additionally, when profiles were too large, and photos had to be taken at greater distances, the tiny details of the section were sacrificed. With that, Fisher et al. (2015) developed a new methodology that brings these issues into consideration and offers a solution that produces high-resolution, color-corrected photomosaics of stratigraphic sections at archaeological sites. This is the methodology we follow in our lab and have used it to produce various stratigraphic sections for publication and remote analyses. Currently, we are working on processing all of the imagery from a Middle to Late Pleistocene site in South Africa called Pinnacle Point. This site is unique due to the excellent preservation of a long section (~30 m tall), which documents a continuous record of various human occupations and climatic changes. The final steps of post-processing involves integration of photomosaics into GIS to build a high-resolution, 3D representation of the site. Student researchers will be trained to process these images from start to finish and if interested, can develop an independent project based off of this data.

Student’s duties:
The student will first learn the full processing method, how to edit RAW images in programs like LightRoom and Photoshop. Other programs like PTGui, SketchUp, and ArcGIS will also be used to stitch and further edit the sections. After learning the method, the student will be given full sections to process from start (raw images) to finish (georeferenced 3D panorama). Various background readings and small ArcGIS online tutorials will be assigned if the student has no prior experience with these programs.

Required qualifications or pre-requisites:
There are no pre-reqs for this position. Experience in any of the above programs will be beneficial but are not required. Students should have the discipline to carry out repetitive work meticulously.

Project/internship location:
SHESC 158

Hours per week or days and times needed:
Minimum 5-6 hours per week.

Project supervisors:
Claudine Gravel-Miguel and Jayde Hirniak

Supervising faculty:
Curtis Marean

Contact information:
cgravelm@asu.edu or jaydehirniak@gmail.com
Research project or internship title:
3D Dental Topography and Tooth Wear of Primate Molars

Academic discipline:
Bioarchaeology
Evolutionary Anthropology
Physical Anthropology

Project description:
How do primate teeth maintain their function as teeth become increasingly worn? Does molar tooth wear affect all primates equally or do tooth shape and diet play important roles? Can 3D scanning improve our understanding of how the shape of teeth changes over the course of an animal’s lifespan?

This project seeks to answer these questions by using a blue-light surface scanner (Identica Hybrid) to create 3D models of primate upper and lower molar teeth and using these models to measure surfaces of teeth associated with shearing, crushing, and grinding functions. Changes in these functional surfaces will be measured across teeth at varying stages of wear to determine whether primates maintain certain tooth functions throughout their lives, and whether the functions that are maintained differ in species with varying diets.

The sample for this project focuses on the Old World monkeys and apes, which share a last common ancestor 30 million years ago and have evolved very different dietary strategies and dental morphologies. This project will scan the teeth from a sample of the living species, as well as a sample of fossil ancestors of Old World monkeys and apes that were collected from sites in East Africa dating between 28 and 15 million years ago.

Student’s duties:
The student will be trained in how to use the Identica Hybrid 3D surface scanner to create models of teeth. They will also be trained in how to crop and edit these files in the visualization software Amira. For interested students, training can also be given in how to take 3D measurements from teeth using the programs Amira, Meshlab and GRASS GIS. These programs are used in many fields, including archaeology, geography, geology, and design. A basic understanding of how to use 3D visualization programs can be a useful skill for students with a wide variety of interests.

Required qualifications or pre-requisites:
Previous experience with 3D scanning or GIS is preferred but by no means is a requirement.

Project/internship location:
SHESC Room 365

Hours per week or days and times needed:
3 days per week (flexible), 2 – 3 hours per scanning session

Project supervisor:
Ellis Locke

Supervising faculty:
Dr. Gary Schwartz

Contact information:
ellis.locke@asu.edu
203-536-5761
**Research project or internship title:**
Article Digital Archive Project

**Academic discipline:**
Physical Anthropology

**Project description:**
Digitize printed journal articles to an online database system via scan and citation processes.

**Student's duties:**
Organize printed physical anthropology articles by subject type, scan and categorize articles to a searchable online database system, and reduce the number of printed article copies to 3 or less.

**Required qualifications or pre-requisites:**
Familiar with Physical Anthropology subjects, must be detail-oriented, highly organized, trainable on the online digital database Bookends, and works well in a team atmosphere (collaborative, receptive to team suggestions, can communicate ongoing project objectives).

**Project/internship location:**
Institute of Human Origins, SS103

**Hours per week or days and times needed:**
6 hours per week. A permanent schedule will be created and adhered to throughout the semester once student and project needs are addressed.

**Project supervisor:**
Dr. Bill Kimbel, IHO Director

Back up supervisors:
Lindsay Mullen, Program Manager
Julie Russ, Assistant Director

**Supervising faculty:**
Dr. Bill Kimbel

**Contact information:**
Lindsay Mullen
Email: llmullen@asu.edu