Spring 2019
Undergraduate Research Apprenticeship Positions

-Areas/Concentrations for Research-

Archaeology
Archaeoinformatics
Art History
Bioarchaeology
Environmental Social Science
Ethnohistory
Evolutionary Anthropology
Global Health and Medical Anthropology
Museum Studies
Physical Anthropology
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 Undergraduate Apprenticeship – Archaeological Collections

Academic discipline:
- Archaeology
- Bioarchaeology
- Museums
- Physical 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 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:
Student will be working closely with faculty, graduate, and advanced undergraduate supervisors in assisting with care and curation of Anthropology Collections. This is position is for students who are interested in working with the 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.

Required qualifications or pre-requisites:
There are no prerequisites. This apprenticeship 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 in a team are highly recommended. If you have some skills in photography or previous experience in a museum or a 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, city bus 62 on Hardy Dr. to west, Venus Orbit on Broadway/Roosevelt
intersection. 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. 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., Curator of Collections/ Assistant Research Professor

**Contact information:**
Melissa.Powell@asu.edu
Phone: 480-965-6957
Center for Archaeology and Society Repository
734 W. Alameda Drive, Suite 120
Tempe, AZ 85282
**Research project or internship title:**
**Anthropology Collections Undergraduate Apprenticeship - Ethnographic or Archival Records**

**Academic discipline:**
- √ Archaeology
- √ Bioarchaeology
- √ Museums
- √ Physical 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 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:**
Student will be working closely with faculty, graduate, and advanced undergraduate supervisors in assisting with care and curation of Anthropology Collections. This position is for students who are interested in working with the 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, inventorying, arranging, describing, preserving and re-housing historical and archival materials.

**Required qualifications or pre-requisites:**
There are no prerequisites. This apprenticeship 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 in a team are highly recommended. If you have some skills in photography or previous experience in a museum or a 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, city bus 62 on Hardy Dr. to west, Venus Orbit on Broadway/Roosevelt intersection. 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. 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., Curator of Collections/ Assistant Research Professor

Contact information:
Melissa.Powell@asu.edu
Phone: 480-965-6957
Center for Archaeology and Society Repository
734 W. Alameda Drive, Suite 120
Tempe, AZ 85282
**Research project or internship title:**

Anthropology Collections Undergraduate Apprenticeship - Physical Anthropology Collections

**Academic discipline:**

- Archaeology
- Bioarchaeology
- Museums
- Physical 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 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:**

Student 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). This position is for students who are interested in working with the 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 the activities.

**Required qualifications or pre-requisites:**

There are no prerequisites (*osteology course preferred). This apprenticeship 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 in a team are highly recommended. If you have some skills in photography or previous experience in a museum or a 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, city bus 62 on Hardy Dr. to west, Venus Orbit on Broadway/Roosevelt intersection. 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. 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., Curator of Collections/ Assistant Research Professor

**Contact information:**
[Melissa.Powell@asu.edu](mailto:Melissa.Powell@asu.edu)
Phone: 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: Artists in Mesoamerica and Other Societies

Academic discipline: Sociocultural Anthropology
Other: Ethnohistory; art history

Project description: Examine the status and roles of artists in Mesoamerica and across the globe.

Student's duties: Collect publications and sources on artists in various cultures.

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**

Academic discipline:  
- Global Health  
- Sociocultural Anthropology

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 collecting and entering data about faculty, using the academic curriculum vitae in particular.  
- Assisting research associate with transcribing recorded faculty interviews on the interaction of interdisciplinarity and intersectionality in their careers.

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:**
Bioarchaeology of Nubia Expedition

**Academic discipline:**
- ☒ Archaeology
- ☒ Bioarchaeology
- ☒ Physical Anthropology

**Project description:**
The Bioarchaeology of Nubia Expedition (BONE) is a long-term archaeological project in northern Sudan. Human skeletal remains, faunal bone, ceramics, lithics, textiles, and other types of artifacts have been excavated in field seasons from 2007-2009 and 2014-2016. These materials are in various stages of processing and analysis in Dr. Baker’s lab. Help is needed to clean, label, and repackage various types of artifacts and skeletal remains. Student apprentices will become familiar with post-excavation processing and curation of archaeological collections and data.

**Student’s duties:**
The student will work directly with a graduate student in processing materials from the excavations. A compressed air system is used for cleaning artifacts and bones, though traditional methods such as cleaning with a toothbrush may be used for some materials. The student will also help label bones with catalog numbers, assist with repackaging collections and organizing boxes on shelving. Additionally, students will be familiarized with the project database and learn how to track field finds. Some entry of project data may also be performed.

**Required qualifications or pre-requisites:**
Interest in working with archaeological collections and human and faunal remains. Note that this position may not permit you to work solely with human skeletal remains. Completion of introductory courses in archaeology and biological anthropology and familiarity with artifacts and osteology are preferred.

**Project/internship location:**
SHESC 144

**Hours per week or days and times needed:**
3-9 hours per week depending on number of credit hours sought. Preferred times are Tues/Thurs afternoon or anytime between 9 and 5 on Weds or Friday.

**Project supervisor:**
Alexandra Ptacek and Dr. Brenda Baker

**Supervising faculty:**
Dr. Brenda Baker

**Contact information:**
Dr. Brenda Baker
School of Human Evolution & Social Change, Rm. 316
Email: BrendaJ.Baker@asu.edu
Phone: 480-965-2087
Research project or internship title:
3D GIS Image processing/Building high-resolution archives of archaeological sites through the production of photomosaics

Academic discipline:
- ✗ Archaeology
- ✗ Other: 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:
jaydehirniak@gmail.com
cgravelm@asu.edu
Research project or internship title:
Changing Water Availability, Attitudes, and Agriculture in the Western USA

Academic discipline:
☒ Other: Environmental Social Science

Project description:
Farmers are increasingly facing extended periods of drought, shifting rainfall patterns, and more precarious access to surface water, such as the Colorado and Verde Rivers. This project explores existing agricultural practices and attitudes amongst farmers in Arizona. This is project connects ongoing work with the National Science Foundation funded Central Arizona Long Term Ecological Research Site with a new project funded by the United States Department of Agriculture.

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. Students will assist in interview preparation, 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:
Comparative Ethnobotany in Historical Perspective

Academic discipline:
- Archaeology
- Bioarchaeology
- Evolutionary Anthropology
- Global Health
- Physical Anthropology
- Sociocultural Anthropology
- Other: Environmental Social Science

Project description:
This project centers on analyzing data on the human use of plants. It has two components, and students can either do both or focus on one or the other. First, students will participate in the tabulation of data on the use of plants by contemporary and ancient societies and enter these data into a relational database. These data come from published scientific literature, giving students useful exposure to this work. Second, students will analyze samples of ancient plant remains from archaeological sites using low-power microscopes. Students will sort ancient seeds, woods, fruits, etc. and develop skills to identify them.

Student’s duties:
Database entry; review of published scientific literature; microscope analysis

Required qualifications or pre-requisites:
Preferably courses in biology or botany, taxonomy, as well as introductory courses in anthropology, archaeology, or the environmental social sciences. But no pre-reqs are required.

Project/internship location:
SHESC 143

Hours per week or days and times needed:
At least 1 day a week for 2 hours. More time/credit can be arranged. Must be available, however, Wednesdays and Thursdays, at least when starting. Number of credits and hours beyond that is open to negotiation. More scheduling flexibility can occur as the semester continues and students are more autonomous. However, all apprentices must be available for at least a group meeting every two weeks, which would be Wed or Thursday.

Project supervisor:
Christopher Morehart

Supervising faculty:
Christopher Morehart

Contact information:
christopher.morehart@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:
Digitizing Paintings of Maya Murals from Santa Rita Corozal, Belize

Academic discipline:
- Archaeology
- Other: Art history; visual anthropology

Project description:
Digitizing Paintings of the Maya Murals at Santa Rita Corozal, Belize.

Student’s duties:
Collect information and sources on the Santa Rita murals. Have drawings and paintings scanned and modified. Compare the images to other Maya paintings.

Required qualifications or pre-requisites:
None

Project/internship location:
SHESC Building #226

Hours per week or days and times needed:
6-10 hours per week.

Project supervisor:
Joel Palka

Supervising faculty:
Joel Palka

Contact information:
Joel.Palka@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 MISS/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:**
*Livelihoods, Endangered Species, and Forestry in Chitwan, Nepal*

**Academic discipline:**
- Other: Environmental Social Science

**Project description:**
In a subtropical region of Nepal, communities and households rely on forests for fodder for livestock, thatch for roofing, and fuelwood; these forests are also home to numerous medicinal and culturally important plants, as well as the endangered tiger and one horned rhino. Over the past five years, an interdisciplinary team at ASU has been investigating how households and communities are managing these community forests. The purpose of this project is to analyze household, community forest, and ecological data to understand what management approaches are used and how effective these interventions are for diverse purposes including conversation, livelihoods, and forest health.

**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. Students will assist in interview preparation, interview transcription, and coding. The student will work with an interdisciplinary team to generate literature reviews, analyze data, and present results for professional and community audiences.

**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:  
Managing Boom-Bust Cycle of Fracking in Appalachia

Academic discipline:  
☒ Other: 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:
Maya Ethnoarchaeology: Research and Museum Exhibits

Academic discipline:
- Archaeology
- Museums
- Sociocultural Anthropology

Project description:
Examining publications and issues in Maya ethnoarchaeology with a focus on pottery production, pottery use, and also fishing and the importance of fish in Maya diets and culture. Collect information on Maya pottery in museums.

Student’s duties:
Collect publications and bibliographies on Maya ethnoarchaeology and determining trends in research; help design a museum exhibit on Maya pottery.

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:
Morphological Variation in Projectile Points from the Roosevelt Reservoir Collections

Academic discipline:
☒ Archaeology

Project description:
This is a pilot study for my dissertation research on projectile point morphology across the U.S. Southwest. This project is designed to test the methods I will use in my research. Geometric Morphometric (GM) methods will be used for the analysis, but there are several methods that may be work best. This study will help determine which methods are most effective. GM is applicable for 2D and 3D shapes, but 3D data takes considerably more time to acquire. Both 2D and 3D data will be gathered and compared to determine whether 2D or 3D data is necessary to adequately characterize projectile point morphology. The bulk of the research will be photographing or scanning projectile points and creating 3D models using several methods (photogrammetry, RTI, and possibly laser scanning), as well as obtaining weight and basic linear measurements. Data acquisition will be time-consuming and will greatly benefit from additional help in order to complete an adequate sample size (to be determined based on the speed of data acquisition). Data gathered in this project will also be used in my dissertation research.

Student's duties:
Create 3D and 2D scans of projectile points and obtain weight and linear measurements (length, width, thickness). Enter metadata and organize project data. 3D modeling is useful for many avenues of research and is a popular activity for hobbyists. This will be a great opportunity for any student to gain experience in this area.

Required qualifications or pre-requisites:
Some experience with 3D scanning or modeling and/or photography is preferred, but not required.

Project/internship location:
Center for Archaeology and Society Repository 734 West Alameda Drive Suite 120 Tempe, AZ

Hours per week or days and times needed:
Up to 8 hours per week. Tuesday and/or Thursday - anytime between 1 pm and 5 pm. Other times can be arranged if needed.

Project supervisor:
Robert Bischoff

Supervising faculty:
Matt Peeples

Contact information:
Robert Bischoff - rjbischo@asu.edu - 801-623-7579
**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. Students will also use ArcMap, a GIS program, to draw fossilized animal bone fragments onto bone templates and convert files to be read by a GIS program.

**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:**
bpfahey@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:**
Research on Teotihuacan as an Ancient City

**Academic discipline:**
☑ Archaeology

**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, surveyed field-by-field across the entire city. The project recorded the locations of thousands of structures and made systematic collections of artifacts from the surface of each one. The following artifact analyses were varied in how far they got, with some artifact types completely analyzed, and others barely touched. At this time, 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, and data on figurines and jewelry production), updating GIS files, and creating literature reviews of past work on particular artifact types.

**Student's duties:**
Students will do about half general data entry or data-checking, and about half 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, 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:**
Mesoamerican Archaeology Lab, SHESC 104

**Hours per week or days and times needed:**
3-9 hours/week, times flexible

**Project supervisor:**
Angela Huster

**Supervising faculty:**
Michael Smith

**Contact information:**
ahuster@asu.edu, Michael.E.Smith@asu.edu
Research project or internship title:
Southwest Social Networks Project/cyberSW

Academic discipline:
- Archaeology

Project description:
The Southwest Social Networks/cyberSW Project is a collaborative project focused on applying methods and models from the interdisciplinary field of social network analyses to archaeological data from the U.S. Southwest. The project involves a diverse group of collaborators including archaeologists, sociologists, geochemists, and computer scientists from a number of academic institutions and research organizations. The current goals of the project involving working to build and improve the massive SWSN archaeological database from the U.S. Southwest/Mexican Northwest. This database integrates information from millions of objects from tens of thousands of archaeological sites across the region. These data are being compiled to support a number of ongoing research projects including the development of region-wide population estimates and the use of network analytical methods to explore the dynamics of social interaction over the period from AD 800-1800. The project team is looking for undergraduate students interested in contributing to the development of these data resources and their analyses.

Student's duties:
Assist graduate research assistant and faculty with gathering, digitizing, organizing, cleaning and analyzing material cultural data for the cyberSW Database.

Required qualifications or pre-requisites:
Basic experience in databases and/or spreadsheets (Excel) is required. Experience or knowledge of US Southwest archaeology and/or basic statistical analysis is preferred, but not required.

Project/internship location:
SHESC Building/ASU Main Campus

Hours per week or days and times needed:
A minimum of three hours per week M-F, hours flexible. Some work could be done remotely as well.

Project supervisor:
Kendall Baller

Supervising faculty:
Matt Peeples

Contact information:
kballer@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 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 African 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, burning of the plant samples to ash, followed by leaching a small, precisely weighed, amount of ash with acid to create a solution for chemical analysis. These initial processing steps will take place in the Archaeological Chemistry Laboratory in SHESC, under my supervision and that of the ACL director Prof. Kelly Knudson.

Student’s duties:  
Lab note taking, washing lab glassware, operating an analytical balance, operating drying ovens and high temperature furnaces, making solutions/dilutions of acids, working in a clean lab environment, operating a centrifuge, pipetting solutions, assisting in method development.

Required qualifications or pre-requisites:  
Required: At least one successfully completed course in anthropology, geology, or chemistry; Preferred: Relevant coursework plus chemical laboratory experience.

Project/internship location:  
Archaeological Chemistry Laboratory

Hours per week or days and times needed:  
Minimum 3 hours per week, 6-10 hours preferred, flexible days and times.

Project supervisor:  
Andrew Zipkin

Supervising faculty:  
Kelly Knudson

Contact information:  
andrew.zipkin@asu.edu
Research project or internship title: 
The Archaeology of Ancient Mexico

Academic discipline:
[ ] Archaeology

Project description:
This project centers on assisting with the organization, tabulation, and analysis of archaeological data recovered from central Mexico. Students will receive experience using digital databases, using spatial analysis software (GIS), using image software, etc. Data include recorded information and photographs of ancient pottery, figurines, stone tools, architectural plan maps, and other excavation-related data.

Student's duties:
Students will enter data in a global database of artifacts from an ongoing archaeological project, assist with digitizing photographs and maps in a GIS system, and tabulate data in spreadsheets. Most of this work is computer work.

Required qualifications or pre-requisites:
Preferably intro archaeology classes

Project/internship location:
SHESC 143

Hours per week or days and times needed:
At least 1 day a week for 2 hours. More time/credit can be arranged. Must be available, however, Wednesdays and Thursdays, at least when starting. Number of credits and hours beyond that is open to negotiation. More scheduling flexibility can occur as the semester continues and students are more autonomous. However, all apprentices must be available for at least a group meeting every two weeks, which would be Wed or Thursday.

Project supervisor:
Christopher Morehart

Supervising faculty:
Christopher Morehart

Contact information:
christopher.morehart@asu.edu
Research project or internship title:
Titicaca and Moquegua Weaning Project

Academic discipline:
- Archaeology
- Bioarchaeology
- Evolutionary Anthropology

Project description:
This project employs isotopic reconstruction of breastfeeding and weaning behavior, as well as early childhood diet, to improve our understanding of life history strategies of ancient people. This component, focused on South American agriculturalists from the Tiwanaku Empire, is part of a larger research project to improve our understanding of how women's participation in subsistence economies impacts the trade-offs they face between direct infant care and economic activities.

Student's duties:
Students will assist in preparing samples for isotopic analysis. This will involve mechanical and chemical processing of human remains.

Required qualifications or pre-requisites:
Introductory course work in archaeology and/or bioarchaeology preferred (but not required).

Project/internship location:
SHESC 302

Hours per week or days and times needed:
At least 3 hours/week, schedule is flexible.

Project supervisor:
Dr. Alexandra Greenwald

Supervising faculty:
Dr. Kelly Knudson

Contact information:
alexandra.greenwald@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
- Other: 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 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; 2) development and testing of a cloud-based mobile field data collection system through the QGIS Field App; 3) field data collection; 4) isotopic analysis in the ACL and Keck Labs; and 5) development of a password-protected website where users can upload their own data and download APU data and models. In year 1, we are focusing on plotting and analyzing the isotopic pilot data already collected, as well as meta-analysis and field data collection. 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 1-2 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 2019 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 at SHESC on T, W, or R. 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