Fall 2021
Undergraduate Research Apprenticeship Positions

-AREAS/CONCENTRATIONS FOR RESEARCH-

Archaeology
Bioarchaeology
Environmental Social Science
Evolutionary Anthropology
Geology
Global Health
Museum Studies
Physical Anthropology
Social Sciences
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:
Deciphering Differences between Past Rhyolitic Eruptions

Academic Discipline:
Archaeology
Geology

Project Description:
This project will focus on compiling geochemical data from volcanic eruptions with rhyolitic compositions and determining whether differences between these events can be quantified. Rhyolitic eruptions are high in SiO2 (65-75 wt.%), K and Na, and low in Fe, Mg, Ca. Overall, due to the high silica content, eruptions with this composition tend to be more explosive and many distal deposits (>100 km from the source) in the archaeological record are rhyolitic. This is important because many archaeological sites rely on these volcanic deposits to correlate stratigraphic levels and date the archaeological material. However, to be used as a dating method, the volcanic deposits must be accurately sourced to a past eruption that has been independently dated. Sourcing rhyolitic deposits can be difficult and require obtaining major and trace elemental data. However, even with this data, some rhyolitic eruptions have very similar chemistries and can almost be impossible to decipher. These similarities are due to how rhyolitic magmas form, and it poses a serious issue for research in tephrochronology. Therefore, this project will compare the chemistry of rhyolitic eruptions from all over the world and quantitively demonstrate the similarities and differences between the compositions. This will be the first study to demonstrate the potential issues that can rise when sourcing rhyolitic eruptions. This is important for this field to move forward and to demonstrate the need for alternative tools when sourcing eruptions.

Student’s Duties:
The student will be responsible for gathering geochemical data from published literature or various other online archives. The supervisor will direct the student to what types of online archives are best. Background readings will be assigned in the beginning of this position. The student will also be required to complete basic statistical analyses (ANOVA, MANOVA) on the compiled data.

Required Qualifications or Pre-requisites:
The student is required to have taken an introductory level geology, volcanology or chemistry course or have some field geology experience. Past experience compiling data is preferred, however, not required.

Project/Internship Location:
Remote

Hours Per Week or Days and Times Needed:
10 hours are recommended

Project Supervisor:
Jayde Hirniak

Supervising Faculty:
Curtis Marean

Contact Information:
jhirniak@asu.edu
Research Project or Internship Title:
Urban Sustainability in the Deep Past

Academic Discipline:
Archaeology
History

Project Description:
This project is part of a longer transdisciplinary project that will consider, “Why did some cities and settlements persist for long periods, while others did not?” We will assemble archaeological and historical data on premodern and modern urban growth trajectories around the world, and try to determine what factors favored long-term survival or persistence. Students will work on an individual set of early cities and compile information on their growth, their decline, and possible reasons for those changes.

Student's Duties:
Help us locate archaeological and historical cases for analysis.
Assemble published reports and online information.
Enter data into project databases and create graphs of growth patterns.
Contribute to exploratory data analysis.

Required Qualifications or Pre-requisites:
Classwork or fieldwork experience in archaeology, history, sustainability or a related field.
GPA > 3.0
Recommended:
Experience working with archaeological or historical data and projects.
Experience with computer graphics (e.g., Photoshop, scanning, Illustrator); or GIS.
Knowledge of elementary statistics.

Project/Internship Location:
Mesoamerican Archaeology Laboratory, SHESC-104.

Hours Per Week or Days and Times Needed:
6 to 12 hours per week. Times depend on the schedules of other project members.

Project Supervisor:
Dr. Michael E Smith

Supervising Faculty:
Dr. Michael E Smith

Contact Information:
mesmith9@asu.edu
Research Project or Internship Title: The Teotihuacan Mapping Project

Academic Discipline:
Archaeology
Museums
Public outreach

Project Description:
ASU runs an archaeological laboratory at Teotihuacan, one of the largest and most important ancient cities of the New World. Dr. Michael E. Smith is currently Director of the lab. We have groups of undergraduates carrying out a variety of tasks, here at ASU and in Mexico in the summer. Most activities center on the Teotihuacan Mapping Project, one of the major archaeological projects in Mexican archaeology. Once the map of Teotihuacan was completed (1973), much of the work of this project remained incomplete. We are organizing paper and electronic files, entering data, checking major artifact categories, working on GIS studies of the map, and making sure that key information is recorded before uploading the data to tDAR to archive it permanently. We also have undergraduate research activities based on data from the Teo Mapping Project, including studies of burial offerings, research on housing, and work on craft production. We are also looking for help with communications, public outreach and social media. See our website: (https://teo.asu.edu/). See some of the videos about the ASU lab: https://asunow.asu.edu/20160826-discoveries-asu-teotihuacan-research-lab-mexico.

Student’s Duties:
(1) Teotihuacan Mapping Project data rescue and archiving:
Data entry into computer databases, and to scan paper forms to pdf. Perform basic analyses of artifact categories, such as mapping the spatial distributions of figurines, or tallying the traits of other artifact categories.
(2) Misc research projects:
Contribute to an ongoing project of analyzing the burials of Teotihuacan. See: https://asunow.asu.edu/20171122-asu-students-learn-dead-teotihuacan. Contribute to our GIS analyses of the Teotihuacan map.
(3) Communications & outreach:
Help develop our social media activities on Twitter, Instagram, and other platforms. Organize publicity materials for the Teotihuacan website and work with the webmaster to update the current website. Research Mesoamerican and lab history to share with the public. Once familiar with the site and datasets, students may develop individual research projects.

Required Qualifications or Pre-requisites:
Required:
Classwork or fieldwork experience in archaeology, or a related field such as history
GPA > 3.0
Recommended:
Experience working with archaeological data, and/or museum outreach activity
Good writing and editing skills; web design; computer graphics
Reading knowledge of Spanish is a plus.
**Project/Internship Location:**
Mesoamerican Archaeology Laboratory, SHESC-104

**Hours Per Week or Days and Times Needed:**
3 to 12 hours per week. Times depend on the schedules of other project members.

**Project Supervisor:**
Dr. Michael E Smith and Anne Sherfield

**Supervising Faculty:**
Dr. Michael E. Smith

**Contact Information:**
mesmith9@asu.edu
Research Project or Internship Title:
Mapping Teotihuacan

Academic Discipline:
Archaeology
GIS

Project Description:
Differential access to civic resources is a well-documented mechanism of socio-economic differentiation in historic cities and can be measured by analyzing movement within the built environment. I measure differential access at Teotihuacan, Mexico by simulating movement pathways from residential structures to public facilities within the city. This project shows the constraints that the urban environment placed on the movements of individuals within Teotihuacan and allows me to explore how differential access to public spaces may have contributed to the creation and maintenance of social inequality at Teotihuacan.

Student's Duties:
Researching and synthesizing excavation of structures at Teotihuacan.
Digitizing the excavated structures of Teotihuacan.
Managing spatial data and learning proper metadata procedures.
Possible to participate in research project on standardization of households in the site.

Required Qualifications or Pre-requisites:
Classwork or fieldwork experience in archaeology, history, or a related field.
Classwork in GIS or decent familiarity with the software and basic ability.
GPA > 3.0

Project/Internship Location:
Mesoamerican Archaeology Laboratory, SHESC-104.

Hours Per Week or Days and Times Needed:
6 to 12 hours per week. Times are flexible.

Project Supervisor:
Anne Sherfield

Supervising Faculty:
Dr Michael E Smith

Contact Information:
asherfie@asu.edu
**Research Project or Internship Title:**
**Anthropology Research Collections Inventory & Database Development**

**Academic Discipline:**
Archaeology  
Bioarchaeology  
Museums  
Physical Anthropology  
Sociocultural Anthropology

**Project Description:**
We are seeking students to assist with an ongoing inventory of the anthropology research collections and the related development of a research collections database. Data from inventories will be used in the continuing development of a data management system to facilitate curation and research. At present, this database includes more than 300,000 lines of cataloged materials. Most of the SHESC anthropology collections were acquired through archaeological investigations in the Southwest U.S., but there are also research collections pertaining to physical anthropology and sociocultural anthropology from all over the world. In addition to the inventory work, students may assist in the standardization and reorganization of existing data and the building of new data tables that will be integrated into the collections database. Students will be introduced to standard museum collections with a focus on the ongoing systematic inventory and database development, using mainly Microsoft Access and Excel. Previous experience with this software is welcome, but not required. Through participation in this project, students will be introduced to basic database design principles that are applicable to both collections management and research.

**Student’s Duties:**
On-campus students will participate in duties that include the handling, labeling, and recording of artifact collections through the following activities:
1. Collect data from collection boxes and specimen bags to fill out standardized forms  
2. Investigate data collected using the anthropology collections database, other databases, as well as archival material to fill in missing data on the inventory forms  
3. Use completed inventory forms to update the collections database

Work that may be completed remotely (online student applicants are welcome):
4. Data entry from standardized forms into Google Sheets and Microsoft Excel  
5. Investigate and update existing collections data to ensure accuracy and completeness  
6. Standardize and restructure existing data to improve the collections database functionality  
7. Create new database tables through the investigation and collection of data from archives and other data sources

**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, attention to detail in record keeping, a sense of curiosity, and a desire to learn. Recommended qualifications: Strong research skills, experience using Excel spreadsheets, and the ability to work independently and as a team are highly recommended. If you have some previous experience in archaeology, a museum or museum-like setting, data entry, or record keeping, be sure to mention that in your application.

**Project/Internship Location:**
SHESC curates Anthropology collections in three different buildings. For this internship, students will be working either at the Tempe Campus or remotely.
**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. There are no evening or weekend hours available.]

**Project Supervisor:**
Dr. Krista L. Eschbach

**Supervising Faculty:**
Dr. Matthew Peeples

**Contact Information:**
keschbac@asu.edu
Center for Archaeology and Society
Matthews Hall, Room 110
925 S Forest Mall,
Tempe, AZ 85281
**Research Project or Internship Title:**
The Use of Cryptotephra to More Accurately Date and Link Archaeological Sites

**Academic Discipline:**
Archaeology
Geology

**Project Description:**
This project focuses on processing and analyzing cryptotephra collected from archaeological sites throughout Europe and South Africa. Cryptotephra are microscopic glass shards that are ejected from a volcanic eruption and can travel up to 9000 km from the source volcano. In archaeology, these glass shards have been used to date deposits (Smith et al., 2018) as well as correlate and link stratigraphic layers between sites (Hirniak et al., 2020). Because cryptotephra deposits tend to be far from the source volcano, shards present in a sediment sample can be extremely low abundance and need specialized methods for extraction and analysis. Therefore, the focus of this project will mainly be on sample preparation.

**Student’s Duties:**
The student will learn how to extract cryptotephra from sediment samples and assist Jayde Hirniak in processing samples collected from various archaeological sites. The student will learn the beginning of the separation process (i.e., weighing out the sample, treating it with HCL) and how to prep epoxy rounds before geochemical analyses (i.e., cleaning, polishing, examining on microscope).

**Required Qualifications or Pre-requisites:**
Past experience working in a laboratory environment is preferred. Coursework in introductory geology or chemistry is preferred but not required.

**Project/Internship Location:**
SHESC 350A

**Hours Per Week or Days and Times Needed:**
10 hours are recommended.

**Project Supervisor:**
Jayde Hirniak

**Supervising Faculty:**
Chris Campisano

**Contact Information:**
jhirniak@asu.edu
Research Project or Internship Title:
Volcanic Database Project

Academic Discipline:
Archaeology
Geology

Project Description:
This project will focus on compiling geochemical data from various volcanic eruptions around the world, expanding on an important database used for sourcing tephra deposits. Tephra are anything that is erupted from a volcano and includes everything from large molten rocks to microscopic ash. A large part of volcanic studies involves determining what volcanic eruption the tephra deposits originated from. In order to do this, geochemical data of the deposit is needed so the tephra can be linked with the volcano it came from. This allows researchers to better understand the distribution of past eruptions which can be important for risk assessment of future eruptions. This is also important for using the deposits as a chronological marker. In order to source deposits accurately, it is critical to keep the tephra database organized and up to date. This position is a very important role in our lab and will allow the student to gain valuable experience managing, updating, and organizing a database. This skill is helpful in almost any field given.

Student’s Duties:
The student will be responsible for gathering geochemical data from published literature or various other online archives. The supervisor will direct the student to what types of online archives are best. Background readings will be assigned in the beginning of this position.

Required Qualifications or Pre-requisites:
The student is required to have taken an introductory level geology course, introductory level chemistry course, or have some field geology experience. Past experience compiling data is preferred, however, not required.

Project/Internship Location:
Remote

Hours Per Week or Days and Times Needed:
10 is recommended

Project Supervisor:
Jayde Hirniak

Supervising Faculty:
Curtis Marean

Contact Information:
jhirniak@asu.edu