First Millenium in Northern Peru: Craft Production and Economic Relations in the Bosque de Pómac

Course ID: HIS 489

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Academic Credits: 8 Semester Credit Units (Equivalent to 12 Quarter Units)

School of Record: Culver Stockton College

DIRECTORS:

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INTRODUCTION

The North Coast of Peru has long been regarded as one of the primary cultural centers of the ancient Andean civilizations of South America. The more than 5,000 hectares that comprise the Bosque de Pómac Historic Sanctuary, a protected natural area located 20 miles NE from the City of Chiclayo, make up one of the most ecologically and culturally diverse locations on the planet. More than 20 adobe pyramids were documented within the Bosque, as well as hundreds of archaeological sites affiliated with local pre-Hispanic groups including Northern Gallinazo and Sicán, as well as the invading Chimú and Inka Empires.

Early 20th-century scholars viewed civilizations on Peru's north coast as the product of a unilineal progression of cultures that replaced each other over time. They focused mainly on powerful Mochica elites in perceived core areas, ignoring non-Mochica groups like the Northern Gallinazo and Sicán in other regions. Such ideas led to the assumption that complex societies that lived on Peru's north coast were politically centralized, with the underlying economies of subservient groups dominated by state-imposed centralized economies. But in North Coast Peru, the archaeological evidence strongly suggests that social and economic ties were very different.

Rather than supporting hierarchical visions, the data lends itself to ideas of "economic complementarity", a term that defines laterally connected and socially interdependent networks of production, distribution, and consumption that shaped social relationships during the first millennium and beyond.

At the regional level, it is hypothesized that the metallurgical tradition of the Middle Sicán dynasty that lived on through the Chimú artisans of the Inka Empire, began much earlier. The assumption is that the copper-consuming Mochica elite were provisioned by copper-producing Northern Gallinazo artisans through complementary social relations, eventually influencing Sicán metallurgy. Our goal is to conduct intensive archaeological research, comparing metal production in Northern Gallinazo sites found outside the Sicán heartland, with metal production evidence from the Bosque de Pómac, where the Middle Sicán capital is located. We hope to expose complex relationships and test ideas of economic complementarity that persisted from approximately 600-800 CE through 1100 CE.

During the 2026 field season, students will participate in an interdisciplinary research project, investigating how the ancient inhabitants of Lambayeque evolved, advancing diverse craft production and participating and expanding pan Andean exchange systems. To do so, students will apply a range of non-destructive remote sensing technologies within the Bosque de Pómac reserve, focusing on first millennium sites to expose Northern Gallinazo, Mochica and Sicán relationships. Students will learn how to conduct archaeological surveys using drones and other non-destructive, remote sensing technologies. Students will also participate in targeted excavations at several sites within the Bosque de Pómac. While learning, students will help expand our understanding of ancient lifeways that were shaped by the characteristics of this unique ecological zone.

IMPORTANT DISCLAIMER

The Anthropocene Research Center was established to support field training in a range of sciences at sites within the U.S. & across the world. Traveling and conducting field work involves risk. Students interested in participating in any ARC program must weigh the potential risk against the value of education provided by the program of their choosing.

Risk is inherent in everything we do, and the ARC takes risks seriously. A committee of leading scholars review each field school location prior to approval. Once a program is accepted, the ARC continually monitors conditions at the program's site and so we can provide an experience that is as safe as possible.

The ARC does not provide trip or travel cancellation insurance. Students are encouraged to explore such insurance policies on their own. Post Covid 19, most basic policies do not cover trip cancelation due to pandemics. If you wish to purchase an insurance policy that covers such contingencies, explore Cancel for Any Reason (CFAR) plans. Insuremytrip.com, Squaremouth.com or Travelguard.com are possible websites where students may explore different insurance policies.

Students should be aware that conditions in the field are different than those experienced at home, dorms or college towns. Students will be exposed to the elements, live in rustic accommodation, and expect to engage in daily physical activity.

We do our best to follow schedule and activities as outlined in this syllabus. Yet local permitting agencies, political, environmental, personal, and/or weather conditions may force

changes. This syllabus, therefore, is only a general commitment. Students should allow flexibility and adaptability as research work is frequently subject to modification.

All students must consult medical professionals to ensure they are fit to participate in a ARC field program. ARC is not qualified to provide medical advice. For all other concerns, please consult with ARC staff members or program director(s) – as appropriate.

COURSE OBJECTIVES

The course has four objectives: (1) Enable students to explore the mutualistic social relationships of pre-Columbian peoples in northern Peru during the first-to second millennium transitional period (ca. 600-1100 CE); (2) To gain understanding of the dynamics of the phenomenon of economic complementarity during the first millennium; (3) to better understand how digital archaeology is practiced in the field; and (4) To train students for careers in archaeology and Cultural Resource Management in various sectors of anthropology, archaeology, and history.

To achieve these objectives, this course has three primary goals: (1) to introduce students to the intellectual challenges presented by archaeological research in fragile ecosystems, including hypothesis testing about Sicán metallurgical origins, interpretation of multi-scalar data, and collaborative research with international institutions; and (2) to train students in documenting and managing digital archaeological data in accordance with heritage preservation protocols in Peru and beyond. (3) to provide students with practical knowledge of cutting-edge archaeological field methods, including drone survey, 3D modeling, pXRF analysis, virtual site documentation, digital recordation, and targeted excavation.

The course will take place in the Bosque de Pómac Historic Sanctuary, 10 miles north of Ferreñafe, Peru. Students will first participate in training lectures and workshops before moving into the field. Students will then conduct fieldwork with archaeologists who are experts in non-destructive archaeological surveys, in-field archaeometric analyses and digital data recording, excavation in funerary and non-funerary settings, and laboratory work. Weekends are dedicated to museum visits, field trips and leisure time.

Students will actively participate in the following research activities:

Survey: Students will conduct remote sensing survey of archaeological sites in the Bosque de Pómac.

Recordation: Students will gain experience filling out excavation forms, mapping finds, and recording stratigraphy using non-destructive archaeological equipment including tablets and drones.

Excavations: Students will participate in guided excavations in the Bosque de Pómac.

Cataloging: Students will participate in field sorting and cataloging finds.

Laboratory: Scheduled lab tasks will include cleaning, sorting, drawing, and cataloging finds.

LEARNT SKILLS

We are aware and strongly support students who seek employment in the Cultural Resource Management sector – whether with private CRM companies or in government compliance agencies. CRM employers seek to understand the skills students learn at the field school. To that end, we are listing all the skills students will learn during this program. At the end of the field school, students will get a Certificate of Completion, where each skill will be ranked at one of three levels:

✓ **Basic**: Can perform the skill/task with some supervision.
✓ **Competent**: Can perform the skill/task without any supervision.
✓ **Advanced**: Can perform the skill/task and teach others how to do it.

Students will be trained in the following skills:

Skill	Skill Definition
Compliance-Consultation	Ability to understand the interests and conduct consultation with all relevant stake holders, especially those of indigenes communities
Artifact Processing	Understand how to assign artifacts to accepted cultural/geological spheres, across space (classification) & time (seriation)
Formation Processes	Identify cultural and natural formation processes responsible for the observed archaeological remains
Conservation	Ability to conduct initial field conservation and preservation of different artifact types, features & architecture
Data Recording	Ability to use printed or digital sheets to document & record field data
General Excavation Principles	Know how to excavate in cultural or arbitrary layers, document and record all excavation activity
Grid & Trench Layout	Ability to lay excavation grid and generate reliable trench outline for excavations
Site Monitoring	Monitor constructions site and identify danger to cultural or natural heritage
Photography	Ability to take clear images of various features, artifact & soil colors at various light and field depth conditions
Soil identification	Ability to identify, describe and record different types of soil and depositions
Stratigraphy	Ability to identify, measure and describe stratigraphic layering of a site
Artifact Conservation	Ability to expertly conserve, preserve & restore a full range of artifact types
Artifact Documentation	Ability to measure, record, photograph and classify various artifact types in the lab/post ex setting
Relational Database Management	Understand how Database software works and can create data files.
GIS	Can confidently operate Geographical Information System software
Bioarchaeology	Ability to excavate, document & study human remains
Geoarchaeology	Ability to collect, sample and analyze soil and sediment samples
Photogrammetry	Ability to create, interpret, measure 3D models of archaeological phenomena
Drone Survey	Able to fly a drone and design systematic land coverage, documentation & survey
Map/Plan Making, Digital	Ability to use digital tools to create maps and plans of a site
Remote Sensing/Terrestrial	Ability to operate ground-based physical sensing techniques to produce a detailed image or map of an area

COURSE SCHEDULE

Week 1

Time	Activity
Sunday 4:00-6:00pm	Arrival Dinner
Monday 8:00-10:00am	Lecture: Bootcamp Module 1: Safety and respect in the Bosque de Pómac Historic Sanctuary & Drone safety
Monday 1:00-5:00pm	Visit to the Sicán National Museum and small drone set-up, safety and piloting
Tuesday 8:00-11:30am	Workshop: Bootcamp Module 2: Pottery, metal and skeletal analysis
Tuesday 1:00-5:00pm	Training exercise: Identifying pottery and metal artifacts and distinguishing among human and faunal remains.
Wednesday 8:00-11:30am	Workshop: Bootcamp Module 3: GIS, digital data collection & management.

Wednesday 1:00-5:00pm	Training exercise: Mapping and database practices for in-field data recording with tablets
Thursday 8:00-11:30am	Workshop: Bootcamp Module 4: and human-ecosystem relationships
Thursday 1:00-5:00pm	Training exercise: Cultural ecology and archaeological site tour of Bosque de Pómac
Friday 8:00-11:30am	Workshop: Bootcamp Module 5: Contemporary excavation methods in field archaeology
Friday 1:00-5:00pm	Training exercise: Unit prep, soils analysis and excavation techniques.
Asynchronous Tutorials	Advanced Workshop: Bootcamp Module 6: Portable X-ray Florescence analysis; 3D modeling and photogrammetry; Spatial statistical analysis; non-parametric statistics for archaeologists.
Saturday 8:00-10am	Bootcamp exam

Weeks 2-5 (Mon-Sat)

Time	Activity
M-F 7:30am-2:30pm	Survey and Excavation in Bosque de Pómac
M-F 4:00-6:00pm	Data Upload & Group Discussion
Sat 7:30am-1:00pm	Laboratory Work
Sat 1:00pm-forward	Free afternoon and evening, optional site visits
Sunday	Free day

** Course schedule may be subject to change upon directors' discretion based on weather conditions or other limiting factors*.

TYPICAL WORKDAY

The first week is dedicated to instruction, site visits and preparation for research at Atlantis. From the second week forward, students will follow this daily schedule:

Time	Activity
6:00am	Wakeup
6:30am	Breakfast
7:00am	Departure for Bosque de Pómac
7:30am	Work begins at the site
10:00-10:15am	Morning break
12:00-12:30	Lunch at the site
2:30pm	End of work at site and return to field house
3:00-4:00pm	Cleaning, settling and resting
4:00-6:00pm	Data Upload & Group Discussion
6:15pm	Dinner

** In case of inclement weather days, lectures and lab work will be performed.*

ACADEMIC GRADING MATRIX

Students will be graded based on their work as follows.

50%: Attend and participate each scheduled day, including lecture and field and laboratory work
30%: Keep a field notebook that will be submitted and evaluated at the end of the course
10%: An exam taken at the end of the first week of field school, testing students on required readings and initial formal lectures.
10%: Participate in daily reports of research activities with the group

ATTENDANCE POLICY

The required minimum attendance for the successful completion of the field school is 95% of the course hours. Any significant delay or early departure from an activity will be calculated as an absence from the activity.

An acceptable number of absences for medical or other personal reasons will not be considered if the student catches up on the field school study plan through additional readings, homework, or tutorials with program staff members.

TRAVEL & MEETING POINT

We suggest you hold purchasing your airline ticket until six (6) weeks prior to departure date. Natural disasters, political changes, weather conditions and a range of other factors may require the cancelation of a program. The program and directors will take a close look at local conditions 6-7 weeks prior to the beginning of the program and will make a Go/No Go decision by then. Such a time frame still allows for the purchase of deeply discounted airline tickets while protecting students from potential loss of airline ticket costs if we are forced to cancel a program.

Students will meet with project staff members on Sunday, the first day of the field school, at 12:00pm at Chiclayo International Airport (CIX). We will meet at the upstairs restaurant on the second floor, just outside the arrival space. CIX is a small airport so participants should have no problem getting there.

If you missed your connection or your flight is delayed, please call, text or email the project director immediately. Local emergency cellular phone numbers and personal WhatsApp contact information will be provided to all enrolled students.

Figure 1: Chiclayo International airport arrival area & meeting point

PREREQUISITES

None. This is a hands-on, experiential learning opportunity and students will study on-site how to conduct archaeological research under the direction of a range of specialists in the field. Field work involves physical work and exposure to the elements and thus requires a measure of understanding that this will not be the typical university learning environment. You will have to work outdoors in physically demanding environments, and students will get sweaty and physically tired. Students are required to come equipped with sufficient excitement and an adequate understanding that fieldwork requires real, hard work, in the sun and wind. The work requires patience, discipline, and attention to detail.

MEALS & ACCOMMODATIONS

Students and staff members will live in the project field house, about 25 kilometers from the Sicán capital located in the Bosque de Pómac Historic Sanctuary. Conditions are basic, but facilities are clean and comfortable. Food will be prepared by the project cooking staff and include hearty regional cuisine prepared by our local chef, with local ingredients – usually a three-course meal consisting of an appetizer, a main course of chicken, beef or seafood, and a healthy vegetable side dish or salad. Given how remote the site is and the local traditional cuisine, this program will not be able to accommodate any special diets (Kosher, Halal, vegan, etc.), but we are able to prepare healthy vegetarian, gluten-free or nut-free meals.

Students will live in triple occupancy rooms with shared bathrooms and showers. The entire project staff will live in the field house so expect privacy to be limited. Project staff & students will take turns at daily cleaning of the facility so expect to contribute to the process on a rotating basis.

There are no laundry facilities at the field house. Once a week, the project manager will collect laundry and deliver to the house manager for laundry services. Alternatively, students may wash their own clothes in buckets and dry on cloth lines installed by the project manager.

Figure 2: Program accommodations at the town of Lllmo

VISA REQUIREMENTS

US Citizens traveling to Peru do not require an entry visa. The passport's expiration date should exceed the stay by at least 6 months.

Citizens of other countries are asked to check the Peruvian embassy website at their home country for specific visa requirements.

PROGRAM ETIQUETTE

Life in the communities around the Bosque de Pómac is rustic and conservative. No excessive or underaged alcohol consumption, and absolutely no marijuana consumption is allowed in the project. Students are expected to obey local laws as well as the 9:00 pm curfew Monday-Friday.

Northern Peruvian culture is warm and welcoming. There are likely to be several occasions during which we are offered food and drink and opportunities to spend time with professional colleagues and peers. In such cases, you are expected to be a polite, and a gracious guest.

While in Peru, students will have many opportunities to meet and work alongside local university and community members. As such, each student is expected to be a project ambassador. You are thus expected to be patient, kind, and courteous both in public and in the house.

EQUIPMENT LIST

- A pair of sturdy working shoes (thick-soled sneakers or light-weight hiking shoes) and a comfortable pair of shoes for walking in semi-rugged terrain.
- Clothing suitable for outdoor work: a wide-brimmed hat and sturdy lightweight clothing with long sleeves and long pants (to protect against the equatorial sun, insects, and thorns).
- A professional looking business-casual outfit for invited events and professional dinners.
- House clothes including shorts and comfortable shirt for the end of hot days of field work.
- A light jacket, as evenings are often quite cool.
- A ballcap or hat to protect your head while walking around town.
- One or two reusable water bottles to pack into the site.
- Ear plugs and an eye mask for sleeping soundly.
- Sunscreen and insect repellent.
- Mosquito net to fit twin-sized bed.
- A small backpack for your water bottle, snacks, cellular, etc.
- Prescription medications you may need, as basic non-prescription drugs are readily available in Ferreñafe province.
- Three-to-two prong adaptor for Peruvian wall plugs.
- A positive attitude towards work, fun, study, and discovery!

PRACTICAL INFORMATION

International dialing code: Peru international phone code is +51.

Money/Banks/Credit Cards: Peruvian rural economy is largely cashed based but there are plenty of banks with ATMs and Western Union locations to send and withdraw money in Chiclayo.

ATM Availability: Many ATM machines are available in Chiclayo, but none are walking distance from the field house. Students will be able to withdraw funds when they arrive or during weekends if they wish to take the local bus to Chiclayo – about 40 min bus ride from the field house. We are typically in Chiclayo for weekly shopping on weekends, so please plan ahead.

Local Language: Peruvians speak Spanish (or Castillano as it is locally referred to). Given how popular the Lambayeque region is among tourists who come to visit Peru's north coast, many in cities like Chiclayo and Lima have a good mastery of English. This, however, should not be expected in the rural periphery where our project house is located. Students will find it easy to communicate with project members in English, especially with the younger generation, but it is advisable to have some basic Spanish vocabulary when you arrive in Peru.

Measure units: degree Celsius (ºC), meter (m.), gram (gr.), liter (l)

ACADEMIC CREDITS & TRANSCRIPT

Attending students will be awarded 6 semester credit units (equivalent to 9 quarter credit units). Students will receive a letter grade for attending this field school based on the assessment matrix (above). This program provides a minimum of 135 direct instructional hours. Students are

encouraged to discuss the transferability of credit units with faculty and the registrar at their home institutions prior to attending this program.

Students will be able to access their transcript through our School of Record – Culver-Stockton College. C-SC has authorized the National Student Clearinghouse to provide enrollment and degree verification (at https://tsorder.studentclearinghouse.org/school/select). Upon completion of a program, students will get an email from C-SC with a student ID that may be used to retrieve transcripts. The first set of transcripts will be provided at no cost, additional transcripts may require payment. If you have questions about ordering a transcript, contact the C-SC office of the registrar at registrar@culver.edu.

REQUIRED READINGS

PDF files of all mandatory and recommended readings will be provided to enrolled students via a shared Dropbox folder.

Castillo, Luis Jaime and Jeffrey Quilter

2010 Many Moche Models: An Overview of Past and Current theories and Research on Moche Political Organization. In *New perspectives on Moche political organization*. Dumbarton Oaks Pre-Columbian symposia and colloquia. Dumbarton Oaks Research Library and Collection, Washington, D.C. Pp. 1-17

Morgan, Colleen.

2022 "Current digital archaeology." *Annual Review of Anthropology* 51(1): 213-231.

Quilter, Jeffrey.

2022 The Early Intermediate Period. In *The ancient central Andes*. Routledge. Pp. 168-198.

2022 The Middle Horizon. In *The ancient central Andes*. Routledge. Pp. 199-229.

Sharp, Kayeleigh

2022 La economía del cobre en la entidad política y étnica Gallinazo del norte. In *IX CNA: VIII Congreso Nacional de Arqueología*, edited by Roberto Lleras and Luisa Vetter. Simposios temáticos arqueometalúrgicos vols. Ministerio de Cultura, Lima. Pp. 193-206.

Shimada, Izumi, and John F. Merkel.

1991 Copper-alloy metallurgy in ancient Peru. *Scientific American 265*(1): 80-87.

RECOMMENDED READINGS

Carballo, David M., and Gary M. Feinman

2016 Cooperation, collective action, and the archeology of large-scale societies. *Evolutionary Anthropology: Issues, News, and Reviews*, *25*(6): 288-296.

Shimada, Izumi, and Alan K. Craig.

2013 The style, technology and organization of Sicán mining and metallurgy, Northern Peru: Insights from holistic study. Chungara, Revista de Antropología Chilena 45 (1): 3-31.

Turner, Bethany L., and Haagen D. Klaus.

2020 Pre-Hispanic north coast cultures and foodways. *Diet, Nutrition, and Foodways on the North Coast of Peru: Bioarchaeological Perspectives on Adaptive Transitions*. Cham: Springer International Publishing. Pp. 45-66.