PROYECTO ARQUEOLOGICO ZULETA, ECUADOR

Course ID: ARCH 315Q

July 15–August 17, 2024

Academic Credits: 8 Semester Credit Units

FIELD SCHOOL DIRECTOR(S)

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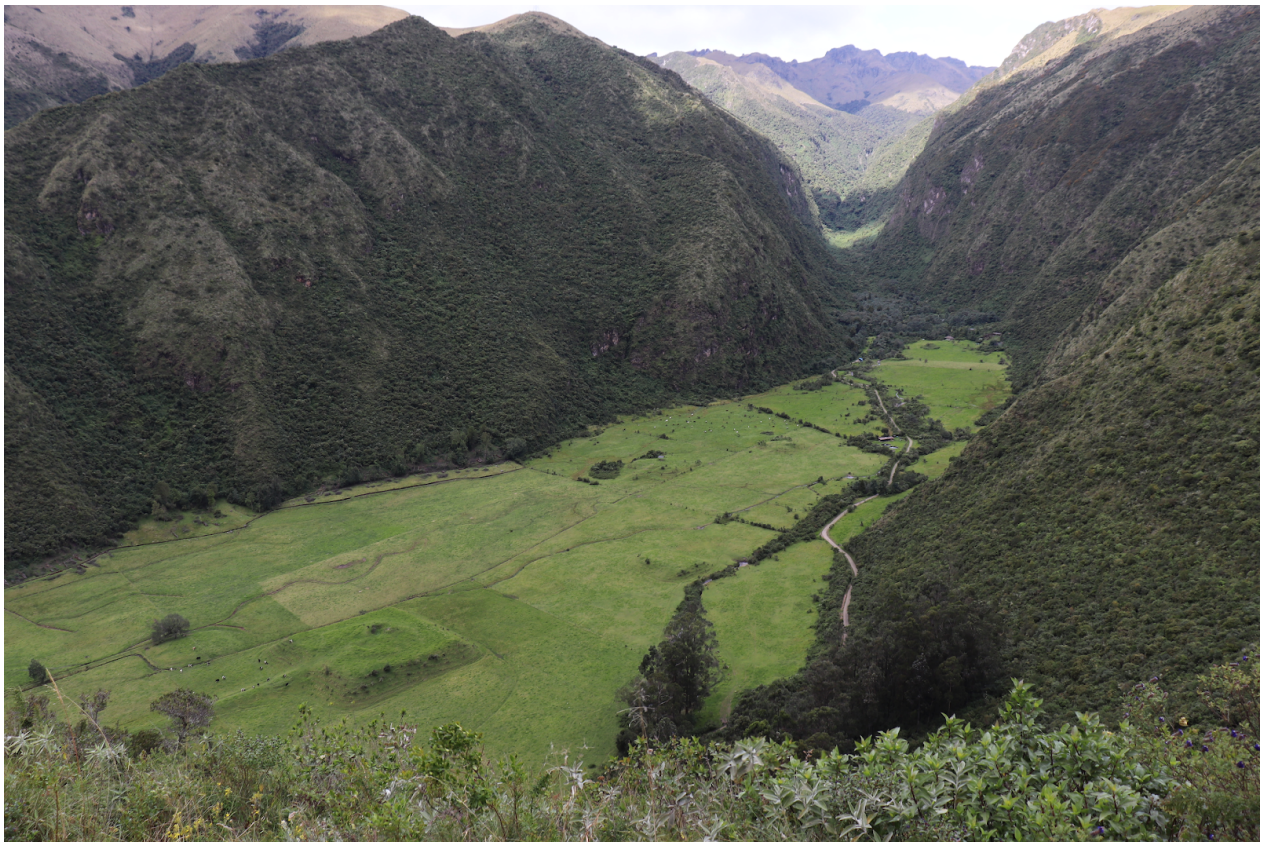

OVERVIEW

Nestled in a scenic valley where the Andes mountains meet the equator, Hacienda Zuleta is one of the largest concentrations of pre-Columbian earthen mounds in the Americas. With hemispherical burial mounds and quadrangular pyramids originally documented, the site was one of the dominant political and ceremonial centers for the Cara people who occupied the northern Ecuadorian highlands from around 900 A.D. until the Spanish conquest. Until 1280 A.D., the Cara were composed of numerous disaggregated chiefdoms without any apparent major political centers. In 1280 A.D., Quilotoa volcano some 100 kilometers to the south, erupted spreading ash over most of the country. The eruption marked the transition in the region from the warm and wet conditions of the Medieval Climate Anomaly to the cold and dry conditions of the Little Ice Age. Rather than exhibiting evidence of decline, the Cara flourished after the eruption and went on to build some of the largest monuments in Ecuadorian prehistory. The Cara eventually became one of the most powerful groups in Ecuador, able to resist the advances of the Inka Empire for years. By the time the Inka arrived, four major Cara polities had come to dominate the region and Zuleta may have been the major center of one of these polities. How the impact of the eruption may have contributed to the rise of the Cara is still poorly understood, but it raises questions about the development of complex societies and cultural adaptive responses to climatic and environmental perturbations.

Zuleta may have been the premier center for Cochecarangue, a territory extending from the site at Hacienda Zuleta in the south to Ibarra and Yahuarcocha in the north. After the long and brutal war with the Inka, the last of the Cara resistance was defeated at Yahuarcocha, a Quechua name that literally translates to “Lake of Blood”. By the time the Spanish arrived in Ecuador, Zuleta was abandoned. There is no evidence that the Inka ever occupied the site suggesting instead that abandonment may have taken place sometime around 1450 A.D. After the arrival of the Spanish, the area was converted to a hacienda and eventually came under the ownership of the Plaza-Lasso family, one of the most influential families in the Republic of Ecuador. The hacienda was the farmstead of both President Leonidas Plaza and his son President Galo Plaza. Today, Hacienda Zuleta, with its quintessential early Spanish Colonial architecture, is widely regarded as one of the most beautiful haciendas in Ecuador. Zuleta hosts researchers from around the world and has been the focus of archaeological investigations, soil and afforestation studies, and research into the efficacy of ecosystem services payments. Hacienda Zuleta is also the site of one of the world’s few condor conservancies working towards saving the heavily endangered Andean condor and is home to a preserve that serves as a refuge for the endangered spectacled bear.

Proyecto Arqueológico Zuleta (PAZ) is part of the broader Proyecto Investigación de los Andes Norte (PIAN), a team of researchers investigating the history, culture, and ecology of the northern Andes. Since 2016, PIAN conducted investigations at the Cara site of Cochasquí to increase our understanding of the chronology of the site, the post-Quilotoa changes, and the nature of the Inka occupation. In 2022, PIAN shifted its focus to the mounds of Zuleta, the impact of the Quilotoa eruption on the site and its agriculture, and the cultural developments that took place throughout its history.

The 2024 excavations at Zuleta will build on previous excavations that have been focused on understanding the nature of the occupation at the site, the chronology of the site, the agricultural practices of its people, and the site’s eventual abandonment. Prior to the Quilotoa eruption, the Cara built small hemispherical burial mounds where elites were interred with a small number of grave goods. After the eruption, the Cara began building massive quadrangular earthen pyramids with large circular structures and extended entry ramps. The methods used to construct these pyramids and their function in Cara society are still poorly understood. Some have suggested that they served as chiefly residences while others argue that they may have been the site of temples and religious ceremonies. We will be conducting excavations atop some of the pyramids at Zuleta to investigate the nature of the activities

that took place there. Excavations will be focused on exposing a large circular structure atop one of the larger pyramids and ground truthing several notable anomalies previously detected by gradiometer and ground penetrating radar.

In addition to the mound complex, the remains of raised field agriculture features have been found at Zuleta. Raised field agriculture is a form of wetland agriculture that relies on mounded earth to raise crops above the surrounding marsh. Raised fields was widely distributed in the Americas before the arrival of Europeans and has been lauded by archaeologists and cultural ecologists as an effective and sustainable form of agriculture, one that promotes biodiversity, efficient wetland management, and can feed large populations. This form of agriculture was practiced in the valley flats of the northern Ecuadorian highlands during the warm and wet Medieval Climate Anomaly but was eventually abandoned. The conventional hypothesis suggests that many of these fields were inundated by ashfall from the Quilotoa eruption and fell into disuse. However, some of the raised fields in the region appear to have received little ashfall yet were nonetheless still abandoned. One alternative hypothesis suggests that the cooling and drying that occurred after the Quilotoa eruption with the onset of the Little Ice Age may have made this method of agriculture untenable.

In 2022, using past excavations as a guide we were able to detect a large section of buried raised fields during our gradiometer survey and conduct excavations of these fields. Interpretations based on data collected during these excavations suggest that an eruption of the nearby Cayambe volcano shortly after the eruption of Quilotoa might have been a yet unrecognized contributing factor to the abandonment of some of the raised fields in the region and possibly the abandonment of Zuleta itself. To test this hypothesis, we will continue conducting soil sampling of these fields and various other locations within the valley to examine the valley hydrology and formation processes, ancient and contemporary human land use, and the extent of volcanic impacts. We will be using multiproxy paleoenvironmental reconstruction techniques including microbotanicals, geochemistry, and ancient sedimentary DNA (sedaDNA) to examine the composition of the pre-eruption agroecosystems and post-eruption vegetation changes to determine how the Quilotoa eruption, a possible Cayambe eruption, and the onset of the Little Ice Age might have influenced Cara agricultural practices and land use strategies. The main focus will be on collecting sedaDNA samples from the raised fields to search for aquatic organisms, particularly *Azolla sp.*, an aquatic fern with a nitrogen-fixing cyanobacteria symbiont that has been hypothesized to have been used as a form of green manure in raised field agriculture and an important part of their nutrient cycling capabilities.

Ultimately, our research at Zuleta seeks to better understand the development of complex societies, the formation of their cultural landscapes and landesque capital, and their responses to climate change and volcanic impacts.

ACADEMIC CREDIT UNITS & TRANSCRIPTS

Credit Units: Attending students will be awarded 8 semester credit units (equivalent to 12 quarter credit units) through our academic partner, Connecticut College. Connecticut College is a highly ranked liberal arts institution with a deep commitment to undergraduate education. Students will receive a letter grade for attending this field school (see assessment, below). This field school provides a minimum of 360 hours of experiential education. Students are encouraged to discuss the transferability of credit units with faculty and registrars at their home institution prior to attending this field school.

Transcripts: An official copy of transcripts will be mailed to the permanent address listed by students on their online application. One more transcript may be sent to the student's home institution at no cost. Additional transcripts may be ordered at any time through the National Student Clearinghouse.

PREREQUISITES

Though no prerequisites are required for attendance, preference will be given to students who have taken previous coursework in archaeology. Prospective students should understand that archaeological fieldwork is a serious and ultimately destructive undertaking with data not gathered lost for all time. Fieldwork involves intense physical labor outdoors, often under less-than-ideal conditions to achieve specific project related goals.

COURSE OBJECTIVES

The field school will introduce students to the basics of archaeological field investigations and provide a general introduction to Andean archaeology and paleoecology. Course work will include a combination of lectures, assignments, and hands-on training. Participants will conduct archaeological field investigations during the day under the guidance of professional archaeologists and attend occasional evening lectures on field methods, theory, Andean/Ecuadorian history and prehistory, and geoarchaeology. Students will spend some time in the lab cleaning and documenting collected materials. Each field school participant will also be required to design and implement an independent project during the field season. The goal of the field school will be to teach students the basics of research, the scientific method, hypothesis testing, and project development by encouraging participants to develop and test research questions as part of their final project in the field school.

LEARNING OUTCOMES

By the end of the field season, students should be able to discuss the goals of archaeological research, in general, and the animating questions at the core of archaeological investigations at Zuleta. Students should also be able to discuss the basics of the project's research design, including its theoretical relevance, why particular data collection methods are employed, and the significance of some of the findings. With respect to archaeological methods, participants should be able to demonstrate how to lay out excavation units, how to apply basic excavation and mapping techniques, what techniques might best be suited to particular contexts, how to complete archaeological paperwork, and how to identify, sort, catalog, and prepare artifacts for analysis. Students should also understand how to identify general soil types and should understand basic concepts of site formation, geomorphological processes, concepts of typology and cultural change through material items, as well as how evidence of material context can be related to evidence of cultural context.

ASSESSMENT

Students will be graded on a combination of comprehension of assigned reading topics and participation, field exercises, field notebooks, and a final research project.

Lectures and Readings (20%): Students will receive a portion of their final grade derived from their ability to articulate and form questions based on the content of lectures and assigned readings. Students

may be asked to write brief summaries or be quizzed on the contents of specific readings during the course of the field school.

Participation in Field Exercises (40%): A portion of students' grades will be based on their daily participation in the operations of the project. Students will cycle through various operations and tasks during the season and will be expected to willingly and enthusiastically engage in those activities. Uncooperative or negative behaviors or shirking work will be graded accordingly. Students who willingly cooperate and demonstrate that they have gained a clear understanding of the tasks at hand will receive a higher grade.

Field Notebooks (20%): Notes and observations in the form of a field notebook are integral to the success and appropriate documentation of archaeological fieldwork. Students will be required to keep a complete and professionally acceptable journal of daily activities, archaeological findings and interpretations. Incomplete notebooks or inappropriate entries are unacceptable, and grades will be based on thoroughness, appropriate content, and a demonstration of an understanding of archaeological concepts will be graded positively.

Student Research Projects (20%): During the course of the project, students will be required to develop their own research projects in which they will form a hypothesis, develop a method to test the hypothesis, and form appropriate conclusions about their topic. Research projects will be developed by students according to their interests with the guidance of project directors and must be approved by directors before students begin conducting their research. Projects can involve observations from ongoing excavations or recording activities, analysis of artifacts, or related experimental activities with archaeological materials. Student projects should identify and investigate specific archaeological or anthropological problems that relate to the archaeology of the site or the region. Students will be required to report on their findings in a professional-style presentation to other members of the project during the final week of the field school and present a final paper detailing their project to be emailed to the directors a week after the end of the field school. Final papers are worth half of the total grade for the research project and must include a title, introduction, background, methodology, discussion, conclusion, and references sections. Papers should be 7 to 10 pages long, double spaced, in 12-point Times New Roman font.

COURSE SCHEDULE

All IFR field schools begin with a safety orientation. This orientation addresses local and program protocols concerning student behavior, appropriate attire, local practices and sensibilities that may be unfamiliar, potential fauna and flora hazards, IFR harassment and discrimination policies, and the student Code of Conduct.

Note: Ideally, students will begin readings before the start of the field school. Readings should be completed by the date on which they are listed. Recommended readings relate directly to the associated lecture topics. More advanced students, such as those who are about to complete or have completed their undergraduate degree and are looking towards applying to graduate programs, are strongly encouraged to complete as many of the recommended readings as they can.

The regular work week will consist of 7-hour in-field workdays Monday through Friday with a 30-minute lunch break in the field. Breakfast at the hotel will be at 7am where students will also make and pack their own lunch to be eaten in the field. We will depart the hotel at 8am to begin field activities and until 3pm when students will be allowed to return to the hotel to clean up before lectures or dinner. On days when no lectures are scheduled, students will be expected to spend some time working on their notes, projects, or other project related activities. On days where lectures are scheduled, students will arrive

promptly to the lecture area by 5pm having read the associated readings and will be ready to take notes and ask questions. Dinner will be held after the scheduled lecture time at 7pm. Because archaeological field conditions and discoveries are unpredictable, students should be prepared for the possibility that on rare occasions they may need to stay in the field after the end of the regular workday to help ensure that artifacts or samples requiring special care or documentation are recovered and stored appropriately.

The lecture schedule will generally be adhered to but could change based on the availability of visiting experts. Most of the lectures will be at our lecture hall in the hacienda, but some may occur on field trips or in the field. Unexpected visitors may be invited to present previously unannounced lectures and students should be prepared to attend and take notes. Cultural events such as musical guests or talks from local leaders may be held in the evening or accompany dinner. Students will be informed ahead of time of any changes to the lecture schedule as soon as possible but should recognize that some events or visits are unexpected.

Saturday will largely be dedicated to planned field trips or cultural excursions which generally begin after breakfast. Although three field trips are listed on the schedule, we may add additional field trips or change the scheduled date of some of the planned trips. The schedule for field trips will generally be adhered to but may vary depending on a number of factors. Field trips are sometimes to remote locations and unexpected community events, local weather conditions, or roadways in disrepair may make travel to some of these sites unreasonable. Students should prepare for some variation in the schedule and expect the unexpected.

Sundays will be free days for students, though occasional short field trips to nearby sites may be available to those who are interested. Otherwise, students will be allowed to spend these days as they wish as long as they remain within walking distance of the Zuleta community. Travel by car or by bus outside of the planned field school activities will require approval from a field school director on a case-by-case basis. Students are welcome and even encouraged to explore the community and the hacienda area on foot as long as they return to a project facility (e.g. lab, dining hall, hotel) by 7pm. Students who plan to miss dinner should let the directors know at least 24 hours in advance so that changes to dinner can be arranged with the cooks.

Readings Prior to Arrival:

Hester, Thomas R., Harry J. Shafer, and Kenneth L. Feder (2009) Chapter 1: Introduction and Chapter 2: Goals of Archaeological Investigation. In *Field Methods in Archaeology*. Pp. 1-20. London and New York: Taylor & Francis.

Hester, Thomas R., Harry J. Shafer, and Kenneth L. Feder (2009) Chapter 4: Site Survey and Chapter 5: Methods of Excavation. In *Field Methods in Archaeology*. Pp. 41-112. London and New York: Taylor & Francis.

Currie, Elizabeth J. (2001) A Late Period Caranqui Chiefdom in the Northern Highlands of Ecuador: Archaeological Investigations at Hacienda Zuleta. Internet Archaeology 10. Available from: http://intarch.ac.uk/journal/issue10/currie_index.html.

[Detailed schedule follows]

Week 1	**Monday July 15-Sunday July 21**	
Monday, July 15	8:00 AM-12:00 PM	Airport Pickups
	12:00 PM	Lunch
	1:00-7:00 PM	Airport Pickups
	7:00 PM	Dinner
	8:00 PM-2:00 AM	Airport Pickups
Tuesday, July 16	7:00 AM	Students meet in dining area for breakfast and to make their own lunch
	8:00 AM-12:00 PM	Safety, Orientation, Introduction to Project & Hacienda Zuleta
	12:00 PM	Lunch
	12:30-5:00 PM	Site Tour
	5:00-7:00 PM	**Lecture 1: Field Methods I – General Survey and Excavation**
	7:00 PM	Dinner
	Lecture Readings:	
	Hester, Thomas R., Harry J. Shafer, and Kenneth L. Feder (2009) Chapter 6: Data Preservation: Recording and Collecting. In *Field Methods in Archaeology*. Pp. 113-142. London and New York: Taylor & Francis. Hester, Thomas R., Harry J. Shafer, and Kenneth L. Feder (2009) Chapter 7: The Handling and Conservation of Artifacts in the Field. In *Field Methods in Archaeology*. Pp. 143-158. London and New York: Taylor & Francis.	
	Recommended Readings:	
	Uhle, Max (1954[1923]) The Aims and Results of Archaeology. In *Max Uhle, 1856-1944: A Memoir of the Father of Peruvian Archaeology*. John H. Rowe, ed. & trans. Pp. 54-100. Berkeley: University of California Press.	
Wednesday, July 17	7:00 AM	Students meet in dining area for breakfast and to make their own lunch
	8:00 AM-12:00 PM	Introduction to Fieldwork
	12:00 PM	Lunch
	12:30-3:00 PM	Fieldwork
	3:00-5:00PM	Free Time
	5:00-7:00 PM	Students write notes or work on research project
	7:00 PM	Dinner
Thursday, July 18	7:00 AM	Students meet in dining area for breakfast and to make their own lunch
	8:00 AM-12:00 PM	Fieldwork
	12:00 PM	Lunch
	12:30-3:00 PM	Fieldwork
	3:00-5:00 PM	Free Time

	5:00-7:00 PM	**Lecture 2: Regional History I – The Integration Period**
	7:00 PM	Dinner
	Lecture Readings:	
	Athens, J. Stephen (1992) Ethnicity and Adaptation: The Late Period-Cara Occupation in Northern Highland Ecuador.	
	Recommended Readings:	
	Bray, Tamara (2008) Late Pre-Hispanic Chiefdoms of Highland Ecuador. In *Handbook of South American Archaeology*. H. Silverman and H. Isbell, eds. Pp 527-543, Vol 3. Springer, New York.	
Friday, July 19	7:00 AM	Students meet in dining area for breakfast and to make their own lunch
	8:00 AM-12:00 PM	Fieldwork
	12:00 PM	Lunch
	12:30-3:00 PM	Fieldwork
	3:00-5:00 PM	Free Time
	5:00-7:00 PM	Students write notes or work on research project
	7:00 PM	Dinner
Saturday, July 20	All Day	Field Trip to Yahuarcocha and the Caranqui Baths
Sunday, July 21	All Day	Free Day (Students are required to return to lodging by 7:00 PM)
Week 2		**Monday July 22-Sunday July 28**
Monday, July 22	7:00 AM	Students meet in dining area for breakfast and to make their own lunch
	8:00 AM-12:00 PM	Fieldwork
	12:00 PM	Lunch
	12:30-3:00 PM	Fieldwork
	3:00-5:00 PM	Free Time
	5:00-7:00 PM	Students write notes or work on research project
	7:00 PM	Dinner
Tuesday, July 23	7:00 AM	Students meet in dining area for breakfast and to make their own lunch
	8:00 AM-12:00 PM	Introduction to Project & Hacienda Zuleta
	12:00 PM	Lunch
	12:30-5:00 PM	Site Tour
	5:00-7:00 PM	**Lecture 3: Regional Geography – Climate, Volcanism, and Wetland Agriculture**
	7:00 PM	Dinner

	Lecture Readings:	
	Knapp, Gregory, and William M. Denevan (1985) The Use of Wetlands in the Prehistoric Economy of the Northern Ecuadorian Highlands. In *Prehistoric Intensive Agriculture in the Tropics*, edited by Ian S. Farrington, pp. 185-207. Oxford: British Archaeological Reports.	
	Recommended Readings:	
	Knapp, Gregory, and Patricia A. Mothes (1998) Quilotoa Ash and Human Settlements in the Equatorial Andes. In *Actividad Volcánica y Pueblos Precolombinos en el Ecuador*, edited by Patricia Mothes, pp. 149-156. Abya-Yala, Quito. Ledru, Marie-Pierre, Vincent Jomelli, Pablo Samaniego, Mathias Vuille, S. Hidalgo, Marjiori Herrera, and C. Ceron (2013) The Medieval Climate Anomaly and the Little Ice Age in the Eastern Equatorial Andes. *Climate of the Past* 9(1):307-321.	
Wednesday, July 24	7:00 AM	Students meet in dining area for breakfast and to make their own lunch
	8:00 AM-12:00 PM	Fieldwork
	12:00 PM	Lunch
	12:30-3:00 PM	Fieldwork
	3:00-5:00PM	Free Time
	5:00-7:00 PM	Students write notes or work on research project
	7:00 PM	Dinner
Thursday, July 25	7:00 AM	Students meet in dining area for breakfast and to make their own lunch
	8:00 AM-12:00 PM	Fieldwork
	12:00 PM	Lunch
	12:30-3:00 PM	Fieldwork
	3:00-5:00 PM	Free Time
	5:00-7:00 PM	**Lecture 4: Archaeological Theory I – Implementing Theory**
	7:00 PM	Dinner
	Lecture Readings:	
	Trigger, Bruce G. (2006) Chapter 9: Pragmatic Synthesis. In *A History of Archaeological Thought*. Pp. 484-528. Cambridge: Cambridge University Press.	
	Recommended Readings:	
	Trigger, Bruce G. (2006) Chapter 10: The Relevance of Archaeology. In *A History of Archaeological Thought*. Pp. 529-548. Cambridge: Cambridge University Press.	
Friday, July 26	7:00 AM	Students meet in dining area for breakfast and to make their own lunch
	8:00 AM-12:00 PM	Fieldwork
	12:00 PM	Lunch
	12:30-5:00 PM	Fieldwork

	5:00-7:00 PM	**Talk on Hacienda Zuleta History by owner Fernando Polanco (no readings)**
	7:00 PM	Dinner
Saturday, July 27	All Day	Field Trip to Inka Fortresses at Pambamarca
Sunday, July 28	All Day	Free Day (Students are required to return to lodging by 7:00 PM)
Week 3	**Monday July 29-Sunday Aug. 4**	
Monday, July 29	7:00 AM	Students meet in dining area for breakfast and to make their own lunch
	8:00 AM-12:00 PM	Fieldwork
	12:00 PM	Lunch
	12:30-3:00 PM	Fieldwork
	3:00-5:00 PM	Free Time
	5:00-7:00 PM	Students write notes or work on research project
	7:00 PM	Dinner
Tuesday, July 30	7:00 AM	Students meet in dining area for breakfast and to make their own lunch
	8:00 AM-12:00 PM	Introduction to Project & Hacienda Zuleta
	12:00 PM	Lunch
	12:30-5:00 PM	Site Tour
	5:00-7:00 PM	**Lecture 5: Field Methods II – Geoarchaeology and Paleoecology**
	7:00 PM	Dinner
	Lecture Readings:	
	Rapp, George, and Christopher L. Hill (2006) Chapter 2: Sediments, Soils, and Environmental Interpretations. In *Geoarchaeology*. 2nd ed. Pp. 25-59. Yale University Press: New Haven and London. Pearsall, Deborah M. (2015) Chapter 1: The Paleoethnobotanical Approach. In *Paleoethnobotany: A Handbook of Procedures*. 3rd edition. Walnut Creek, California: Routledge.	
	Recommended Readings:	
	Hester, Thomas R., Harry J. Shafer, and Kenneth L. Feder (2009) Chapter 10: Stratigraphy: Recording and Collecting. In *Field Methods in Archaeology*. Pp. 235-252. London and New York: Taylor & Francis. Wilson, Clare, Ian A. Simpson, and Elizabeth J. Currie (2002) Soil Management in Pre-Hispanic Raised Field Systems: Micromorphological Evidence from Hacienda Zuleta, Ecuador. *Geoarchaeology* 17(3):261-283. Orlando, Ludovic, Robin Allaby, Pontus Skoglund, Clio Der Sarkissian, Philipp W. Stockhammer, María C. Ávila-Arcos, Qiaomei Fu, et al. (2021) "Ancient DNA Analysis." *Nature Reviews Methods Primers* 1(14):1-26.	

Wednesday, July 31	7:00 AM	Students meet in dining area for breakfast and to make their own lunch
	8:00 AM-12:00 PM	Fieldwork
	12:00 PM	Lunch
	12:30-3:00 PM	Fieldwork
	3:00-5:00PM	Free Time
	5:00-7:00 PM	Students write notes or work on research project
	7:00 PM	Dinner
Thursday, Aug. 1	7:00 AM	Students meet in dining area for breakfast and to make their own lunch
	8:00 AM-12:00 PM	Fieldwork
	12:00 PM	Lunch
	12:30-3:00 PM	Fieldwork
	3:00-5:00 PM	Free Time
	5:00-7:00 PM	**Lecture 6: Regional History II – Inka and Spanish Invasions**
	7:00 PM	Dinner
	Lecture Readings:	
	Brown, David O., Byron Camino, and Mark D. Willis (2010) Some observations on Inka Fortresses of Western Highland Ecuador. *INPC Journal* 2:42-56. Brown, David O. (1998) Water and Power in the Provinces: Water Management in Inka Centers of the Central Highlands of Peru. *Tawantinsuyu* 5:23-36.	
	Recommended Readings:	
	Bray, Tamara L., and José H. Echeverría Almeida (2014) The Late Imperial Site of Inca-Caranqui, Northern Highland Ecuador: At the End of Empire. Ñawpa Pacha: *Journal of Andean Archaeology* 34(2):177-199. Rowe, John Howland (2011) Ecuador under the Inca Empire: The Incas in Quito. In *Costume and History in Highland Ecuador*. Ann Pollard Rowe, ed. Pp. 70-84, 318-320. Austin: University of Texas Press.	
Friday, Aug. 2	7:00 AM	Students meet in dining area for breakfast and to make their own lunch
	8:00 AM-12:00 PM	Fieldwork
	12:00 PM	Lunch
	12:30-5:00 PM	Fieldwork
	5:00-7:00 PM	Free Time
	7:00 PM	Dinner
Saturday, Aug. 3	All Day	Participant Archaeology – Traditional Pottery in La Rinconada de Angochagua

Sunday, Aug. 4	All Day	Free Day (Students are required to return to lodging by 7:00 PM)
Week 4	**Monday Aug. 5-Sunday Aug. 11**	
Monday, Aug. 5	7:00 AM	Students meet in dining area for breakfast and to make their own lunch
	8:00 AM-12:00 PM	Fieldwork
	12:00 PM	Lunch
	12:30-3:00 PM	Fieldwork
	3:00-5:00 PM	Free Time
	5:00-7:00 PM	Students write notes or work on research project
	7:00 PM	Dinner
Tuesday, Aug. 6	7:00 AM	Students meet in dining area for breakfast and to make their own lunch
	8:00 AM-12:00 PM	Introduction to Project & Hacienda Zuleta
	12:00 PM	Lunch
	12:30-5:00 PM	Site Tour
	5:00-7:00 PM	**Lecture 7: Research Design –Research and Complex Societies y**
	7:00 PM	Dinner
	Lecture Readings:	
	Hechler, Ryan Scott (2021) Over the Andes, and Through their Goods: Integration Period Relations in Northern Ecuador. In *The Archaeology of the Upper Amazon: Complexity and Interaction in the Andean Tropical Forest*. Ryan Clasby and Jason Nesbitt, eds. Pp. 208-227. Gainesville: University Press of Florida. Carneiro, Robert L. (1998) What Happened at the Flashpoint?: Conjectures on Chiefdom Formation at the Very Moment of Conception. In *Chiefdoms and Chieftaincy in the Americas*. Elsa M. Redmond, ed. Pp. 18-42. Gainesville: University Press of Florida.	
	Recommended Readings:	
	Villamarín, Juan A., and Judith E. Villamarín (1999) Chiefdoms: The Prevalence and Persistence of "Señoríos Naturales" 1400 to European Conquest. In *The Cambridge History of the Native Peoples of the Americas*. Frank Salomon and Stuart B. Schwartz, eds. Pp. 577-667, Vol. 3: South America, Part 1. Cambridge: Cambridge University Press. Read: • Some General Characteristics of Chiefdoms (pp. 622-628) • Chiefdoms and Empire in the Andean Regions (pp. 628-629) • Northern Andes (Ecuador) (pp. 648-653) • Conclusion (pp. 653-656) Hester, Thomas R., Harry J. Shafer, and Kenneth L. Feder (2009) Chapter 3: Research Design and Sampling Techniques. In *Field Methods in Archaeology*. Pp. 21-40. London and New York: Taylor & Francis.	

Wednesday, Aug. 7	7:00 AM	Students meet in dining area for breakfast and to make their own lunch
	8:00 AM-12:00 PM	Fieldwork
	12:00 PM	Lunch
	12:30-3:00 PM	Fieldwork
	3:00-5:00PM	Free Time
	5:00-7:00 PM	Students write notes or work on research project
	7:00 PM	Dinner
Thursday, Aug. 8	7:00 AM	Students meet in dining area for breakfast and to make their own lunch
	8:00 AM-12:00 PM	Fieldwork
	12:00 PM	Lunch
	12:30-3:00 PM	Fieldwork
	3:00-5:00 PM	Free Time
	5:00-7:00 PM	**Lecture 8: Archaeological Theory II – Evolutionary Theory**
	7:00 PM	Dinner
	Lecture Readings:	
	Trigger, Bruce G. (1990) Monumental Architecture: A Thermodynamic Explanation of Symbolic Behaviour. *World Archaeology* 22(2):119-132.	
	Recommended Readings:	
	Bray, Tamara (2005) Multi-Ethnic Settlement and Interregional Exchange in Pimampiro, Ecuador. *Journal of Field Archaeology* 30(2):119-141.	
Friday, Aug. 9	7:00 AM	Students meet in dining area for breakfast and to make their own lunch
	8:00 AM-12:00 PM	Fieldwork
	12:00 PM	Lunch
	12:30-5:00 PM	Fieldwork
	5:00-7:00 PM	Free Time
	7:00 PM	Dinner
Saturday, Aug. 10	All Day	Research Project Workday
Sunday, Aug. 11	All Day	Free Day (Students are required to return to lodging by 7:00 PM)

Week 5		Monday Aug. 12-Saturday Aug. 17
Monday, Aug. 12	All Day	Final Day of Excavations - Students draw profiles and finalize paperwork and notes
Tuesday, Aug. 13	All Day	Close and Backfill Excavations
Wednesday, Aug. 14	All Day	Organize materials and prepare them for storage
Thursday, Aug. 15	All Day	Final Research Project Presentations
Friday, Aug. 16	8:00 AM-12:00 PM After 12:00 PM	Continue with project presentations & conduct Project Evaluations End of field season celebration
Saturday, Aug. 17	All Day	Students are taken to airport or begin their travels

REQUIRED READINGS

PDF files of all mandatory readings will be provided to enrolled students. Students are encouraged to download and/or print readings prior to traveling. Course participants are expected to be prepared to engage the discussions led by facilitators, all of whom will be looking for compelling evidence that students have read and thought about the assigned readings prior to the scheduled day on which they are first discussed.

Readings Prior to Arrival:

Hester, Thomas R., Harry J. Shafer, and Kenneth L. Feder (2009) Chapter 1: Introduction and Chapter 2: Goals of Archaeological Investigation. In *Field Methods in Archaeology*. Pp. 1-20. London and New York: Taylor & Francis.

Hester, Thomas R., Harry J. Shafer, and Kenneth L. Feder (2009) Chapter 4: Site Survey and Chapter 5: Methods of Excavation. In *Field Methods in Archaeology*. Pp. 41-112. London and New York: Taylor & Francis.

Currie, Elizabeth J. (2001) A Late Period Caranqui Chiefdom in the Northern Highlands of Ecuador: Archaeological Investigations at Hacienda Zuleta. Internet Archaeology 10. Available from: http://intarch.ac.uk/journal/issue10/currie_index.html.

Readings on Program:

Athens, J. Stephen

1992 Ethnicity and Adaptation: The Late Period-Cara Occupation in Northern Highland Ecuador.

Brown, David O.

1998 Water and Power in the Provinces: Water Management in Inka Centers of the Central Highlands of Peru. *Tawantinsuyu* 5:23-36.

Brown, David O., Byron Camino, and Mark D. Willis

2010 Some observations on Inka Fortresses of Western Highland Ecuador. *INPC Journal* 2:42-56.

Carneiro, Robert L.

1998 What Happened at the Flashpoint?: Conjectures on Chiefdom Formation at the Very Moment of Conception. In *Chiefdoms and Chieftaincy in the Americas*. Elsa M. Redmond, ed. Pp. 18-42. Gainesville: University Press of Florida.

Currie, Elizabeth J.

2001 A Late Period Caranqui Chiefdom in the Northern Highlands of Ecuador: Archaeological Investigations at Hacienda Zuleta. *Internet Archaeology* 10. Available from: http://intarch.ac.uk/journal/issue10/currie_index.html.

Hechler, Ryan Scott

2021 Over the Andes, and Through their Goods: Integration Period Relations in Northern Ecuador. In *The Archaeology of the Upper Amazon: Complexity and Interaction in the Andean Tropical Forest*. Ryan Clasby and Jason Nesbitt, eds. Pp. 208-227. Gainesville: University Press of Florida.

Hester, Thomas R., Harry J. Shafer, and Kenneth L. Feder

2009 Chapter 1: Introduction. In *Field Methods in Archaeology*. Pp. 41-112. London and New York: Taylor & Francis.

Chapter 2: Goals of Archaeological Investigation. In *Field Methods in Archaeology*. Pp. 1-20. London and New York: Taylor & Francis.

Chapter 4: Site Survey. In *Field Methods in Archaeology*. Pp. 41-112. London and New York: Taylor & Francis.

Chapter 5: Methods of Excavation. In *Field Methods in Archaeology*. Pp. 41-112. London and New York: Taylor & Francis.

Chapter 6: Data Preservation: Recording and Collecting. In *Field Methods in Archaeology*. Pp. 113-142. London and New York: Taylor & Francis.

Chapter 7: The Handling and Conservation of Artifacts in the Field. In *Field Methods in Archaeology*. Pp. 143-158. London and New York: Taylor & Francis.

Knapp, Gregory, and William M. Denevan

1985 The Use of Wetlands in the Prehistoric Economy of the Northern Ecuadorian Highlands. In *Prehistoric Intensive Agriculture in the Tropics*, edited by Ian S. Farrington, pp. 185-207. Oxford: British Archaeological Reports.

Pearsall, Deborah M.

2015 Chapter 1: The Paleoethnobotanical Approach. In *Paleoethnobotany: A Handbook of Procedures*. 3rd edition. Walnut Creek, California: Routledge.

Rapp, George, and Christopher L. Hill

2006 Chapter 2: Sediments, Soils, and Environmental Interpretations. In *Geoarchaeology*. 2nd ed. Pp. 25-59. Yale University Press: New Haven and London.

Trigger, Bruce G.

1990 Monumental Architecture: A Thermodynamic Explanation of Symbolic Behaviour. *World Archaeology* 22(2):119-132.

Trigger, Bruce G.

2006 Chapter 9: Pragmatic Synthesis. In *A History of Archaeological Thought*. Pp. 484-528. Cambridge: Cambridge University Press.

RECOMMENDED READINGS

Bray, Tamara

2005 Multi-Ethnic Settlement and Interregional Exchange in Pimampiro, Ecuador. Journal of Field Archaeology 30(2):119-141.

2008 Late Pre-Hispanic Chiefdoms of Highland Ecuador. In Handbook of South American Archaeology. H. Silverman and H. Isbell, eds. Pp 527-543, Vol 3. Springer, New York.

Bray, Tamara L., and José H. Echeverría Almeida

2014 The Late Imperial Site of Inca-Caranqui, Northern Highland Ecuador: At the End of Empire. Ñawpa Pacha: Journal of Andean Archaeology 34(2):177-199.

Hester, Thomas R., Harry J. Shafer, and Kenneth L. Feder

2009 Chapter 3: Research Design and Sampling Techniques. In Field Methods in Archaeology. Pp. 21-40. London and New York: Taylor & Francis.

Chapter 10: Stratigraphy: Recording and Collecting. In Field Methods in Archaeology. Pp. 235-252. London and New York: Taylor & Francis.

Knapp, Gregory, and Patricia A. Mothes

1998 Quilotoa Ash and Human Settlements in the Equatorial Andes. In Actividad Volcánica y Pueblos Precolombinos en el Ecuador, edited by Patricia Mothes, pp. 149-156. Abya-Yala, Quito.

Ledru, Marie-Pierre, Vincent Jomelli, Pablo Samaniego, Mathias Vuille, S. Hidalgo, Marjiori Herrera, and C. Ceron

2013 The Medieval Climate Anomaly and the Little Ice Age in the Eastern Ecuatorial Andes. Climate of the Past 9(1):307-321.

Orlando, Ludovic, Robin Allaby, Pontus Skoglund, Clio Der Sarkissian, Philipp W. Stockhammer, María C. Ávila-Arcos, Qiaomei Fu, et al.

2021 Ancient DNA Analysis." *Nature Reviews Methods Primers* 1(14):1-26.

Rowe, John Howland

2011 Ecuador under the Inca Empire: The Incas in Quito. In Costume and History in Highland Ecuador. Ann Pollard Rowe, ed. Pp. 70-84, 318-320. Austin: University of Texas Press.

Trigger, Bruce G.

2006 Chapter 10: The Relevance of Archaeology. In A History of Archaeological Thought. Pp. 529-548. Cambridge: Cambridge University Press.

Uhle, Max

1954 [1923] The Aims and Results of Archaeology. In *Max Uhle, 1856-1944: A Memoir of the Father of Peruvian Archaeology*. John H. Rowe, ed. & trans. Pp. 54-100. Berkeley: University of California Press.

Villamarín, Juan A., and Judith E. Villamarín

1999 Chiefdoms: The Prevalence and Persistence of "Señoríos Naturales" 1400 to European Conquest. In The Cambridge History of the Native Peoples of the Americas. Frank Salomon and Stuart B. Schwartz, eds. Pp. 577-667, Vol. 3: South America, Part 1. Cambridge: Cambridge University Press. Read:

- Some General Characteristics of Chiefdoms (pp. 622-628)
- Chiefdoms and Empire in the Andean Regions (pp. 628-629)
- Northern Andes (Ecuador) (pp. 648-653)
- Conclusion (pp. 653-656)

Wilson, Clare, Ian A. Simpson, and Elizabeth J. Currie

2002 Soil Management in Pre-Hispanic Raised Field Systems: Micromorphological Evidence from Hacienda Zuleta, Ecuador. Geoarchaeology 17(3):261-283.

PART II: TRAVEL, SAFETY & LOGISTICS

NOTICE OF INHERENT RISK

Traveling and conducting field research can involve risk. The IFR engages in intensive review of each field school location and programming prior to approval. Once a program is accepted, the IFR reviews each program annually to make sure it still complies with all our standards and policies, including those pertaining to student safety. Participants should also take every reasonable step to reduce risk while on IFR programs, including following the safety advice and guidelines of your program director, being alert to your surroundings and conditions, letting someone know where you will be at all times, and assessing your personal security.

The IFR does not provide trip or travel cancellation insurance. We strongly encourage participants to consider purchasing this insurance, as unexpected events may prevent your participation or cause the program to be canceled. Insurance is a relatively small cost to protect your educational investment in an IFR program. When comparing trip cancellation insurance policies, make sure the policy covers the cost of both airfare and tuition.

We do our best to follow a schedule of activities, methods training, and programming as outlined in this syllabus. However, this schedule can be easily disrupted by unforeseen circumstances, including weather, revisions by local permitting agencies, or conditions onsite. While this schedule represents the intentions of the program, adaptability is an intrinsic part of all field research, and necessary alterations to the schedule may happen at any time.

If you have any medical concerns, please consult with your doctor. For all other concerns, please consult with the program director and staff.

PROGRAM SPECIFIC FIELD CONDITIONS

Ecuador is an extremely ecologically diverse country, and it is possible to go from frozen glaciers to sweltering jungles in a matter of hours. Where we are located (around 2,800 meters or 9,200 feet), temperatures range from around 70° (Fahrenheit) during the day to the high 40s at night and there are very few biting insects. During the day the sun can be very intense, and you can heat up very quickly; the relatively low humidity can be dehydrating and carrying drinking water is essential. UV radiation is also stronger at this high altitude and sunscreen is essential. Nights can be brisk, students should have warm evening clothes and though not required, a light sleeping bag may be useful. In general, students should be prepared for a wide range of temperatures, especially if field trips take us to higher or lower elevations, or if you plan to travel before or after the field school. A few layers of clothing that can be removed or added as needed are best.

Students will enjoy relatively easy field conditions with most areas of excavation within a short distance from the hotel. Most of the archaeological site is within the fenced and protected hacienda with guards on duty 24/7, but the area surrounding the hacienda is an active ecological preserve and spectacled bears and pumas are present though extremely rare. Students should also be ready and willing to hike and carry equipment to their specific excavations, work all day, and hike back to the hotel in the evenings. For safety reasons, students will not be allowed to excavate in shorts and sturdy boots will be necessary for much of the fieldwork.

The project lies in the Andean highlands and some activities will be conducted at even higher elevations (between 3,600 and 4,000 meters). While most students have no trouble with the altitude, a short

period of acclimation should be expected. If you have asthma, COPD, other breathing difficulties or previous problems with altitude sickness, it would be wise to consult your doctor and discuss your issues with the project directors. Students (especially students who plan on traveling after the field school) should visit a travel doctor to be sure they are up to date on all their vaccinations and take all necessary precautions for their journey. Students should also bring any personal medication they might require for their time in Ecuador.

VISA REQUIREMENTS

A valid passport over six months from its expiration date is required to enter Ecuador. This is important; persons with less than six months before their passport expiration will be turned away at the airport. No visa is required for U.S. visitors for stays of 90 days or less. Stays of greater than 90 days will require a travel visa to be obtained in advance.

Citizens not from the USA are asked to check the embassy website page at their home country for specific visa requirements.

STUDENT HEALTH

An IFR field school is designed to provide safe, positive, and constructive experiences for participating communities, students, and researchers. We are committed to protocols and practices that support the health and well-being of all involved in our field school projects, including the members of the community in which these projects take place.

We recommend that students adopt best-practices for arriving in a good state of health to protect themselves and their peers' readiness to set about the work of the field school. A thriving field camp environment is a constant exchange of energy, patience, effort, respect, and service. Arriving healthy is every student's first act of service — their first opportunity to behave in a way that respects the safety and wellness of one another.

TRAVEL (TO AND DURING THE PROGRAM)

Natural disasters, political changes, weather conditions and various other factors may force the cancellation or alteration of a field school. IFR recommends students only purchase airline tickets that are fully refundable and consider travel insurance in case a program or travel plans must change for any reason. General information for this program is below, but keep in mind we will discuss any updated travel information and regulations during the required program orientation, which could affect travel plans.

New students can meet field school directors at the Quito International Airport on **Monday July 15**, **2024**. Students must inform the project staff of their arrival time in Quito before the project to arrange transport from the airport which is some distance from the site. Directors will transport students from the airport directly to the site by car. If you are coming overland or would like to arrange your own

transportation to the site, please inform the project as soon as possible and provide contact information. If you missed your connection, your flight is delayed, or you are held at the border for any reason, please call, text or email the project director immediately. A local emergency cell phone number will be provided to all enrolled students.

Once at the Zuleta community, students will travel from the hotel to the excavation locations either on foot or by vehicle depending on the distance to the location. Students traveling by vehicle will be expected to wear masks while inside.

ACCOMMODATIONS

Students will stay in a small, but comfortable hotel in the community of Zuleta within walking distance of the Hacienda main entrance. Students will have their own beds but generally be required to share a room with one or two other students. Each room will have access to its own bathroom. Depending on the number of applicants, the program will occupy a dedicated section of the facility, or possibly the entire hotel. While blankets will be provided, the hotel is not heated and nighttime temperatures at that time of year can often be quite cold, so students may choose to bring a sleeping bag although most have found them unnecessary. Regular cleaning will be conducted by the hotel staff, but the facility is a small family-run hotel and students should do their part to maintain clean and hygienic living conditions for themselves and others.

It is recommended that students label their clothes as they are washed in large batches and mix-ups occur regularly. Though the washing is done with care, clothes are often hand washed and hung to dry. Garments that require special treatment can be problematic or might even be damaged, so odd fabrics and special-care clothing should be avoided.

Lunches will consist of sandwiches and field food prepared by students themselves from foods provided at the hotel each morning. Breakfasts and dinners will be eaten as a group at the hotel, prepared by local cooks. Local foods are very heavily potato and rice based but can be accompanied by a variety of fruits, vegetables, and proteins. Some accommodations can be made for vegans, vegetarians, and students with allergies or special dietary restrictions, but other specific dietary restrictions such as kosher or halal meals may not be feasible. All participants in a field school, students and staff, will wear masks while indoors (i.e. during lectures, during labs, in shared residential spaces, etc.). Regular hand washing will be a part of the project's daily schedule.

EQUIPMENT LIST

- Sturdy hiking boots
- Hat
- Sunscreen (It's expensive in Ecuador and you'll be using it a lot)
- Daypack/backpack
- Flashlight
- Any medication you need and prescription medication to last for the duration of the field school
- Water bottle/water bottles, at least 2 liters (you can buy disposable water bottles and reuse them if you're worried about space, but make sure you hold on to them)
- Marshalltown Pointing Trowel - 5" x 2"
- A rain jacket or rain poncho
- A warm jacket
- A towel
- A laptop computer (not required but if you have one and can bring it, you may find it useful while working on your research project)
- Personal protective equipment including gloves and face masks for the duration of the field school (This is optional depending on student preference, but you may find that some locals are

still more comfortable with masking in certain situations. It may be good to bring at least one cloth or a few disposable face masks.)

As noted, the sun is intense at this altitude on the equator and days can seem much hotter than the recorded temperature. Because of the thin air, nights are often cold and a bank of clouds during the day can drop the temperatures quickly so students should be prepared for rapid shifts in weather. In general, a layered approach to clothing is best, and students may find themselves stripping off layers or quickly adding them several times during the day. Some rain is always possible, even in the dry season, so students should consider their jacket, backpack, and shoe choices accordingly for both fieldwork and after fieldwork activities.