

ZOOARCHAEOLOGICAL ANALYSIS OF ARCHAEOLOGICAL FAUNAL MATERIALS AT THE TOWN OF BARNARD CASTLE, UK

Course ID: HIS 489

July 18-August 14, 2027

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

School of Record: Culver Stockton College

This program does not provide meals (with the exception of the Arrival Dinner, Welcome Dinner, and Traditional Sunday Roast). Barnard Castle is a thriving town with many options for groceries, fast food, takeaway, and restaurants for all price ranges. [The TCR Hub](#), where students will be housed, has a kitchenette with food storage facilities.

DIRECTORS:

Dr. Emily Holt – Research Assistant Professor, University at Buffalo, and Director, Errant Heritage, UK (emily.holt@errantheritage.com)

Dr. Hannah Russ – Director and Lead Zooarchaeologist, archaeology.biz, UK (px@archaeology.biz)



PROGRAM DESCRIPTION

Zooarchaeological analysis of excavated faunal remains is an essential part of the post-excavation study in both academic and cultural resource management archaeological projects.

Animals have always been integral to human societies, and faunal remains can provide insight into diet, economy, social inequality, trade, agriculture, religious beliefs, and more. Understanding how zooarchaeological analysis works is a necessary skill for pursuing robust archaeological research and for the successful completion of research and compliance projects.

This program provides a hands-on introduction to the basics of zooarchaeological analysis. Students will work with Dr Emily Holt, and Dr Hannah Russ, learning the theoretical foundations of zooarchaeological analysis and gaining practical experience with identifying, recording, and photographing zooarchaeological remains. Students will work with excavated materials from a variety of sites and time periods, drawing on information from lectures and lab work. Relaying on an extensive skeletal reference collection to identify and record species, students will identify skeletal elements, age, sex, pathology, and taphonomic alterations. Students' work will contribute to ongoing projects being conducted by archaeology.biz, a Cultural Resource Management (commercial archaeology) outfit based at Barnard Castle.

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 cancellation due to pandemics. If you wish to purchase an insurance policy that covers such contingencies, explore Cancel for Any Reason (CFAR) plans. [Insuremytrip.com](https://insuremytrip.com), [Squaremouth.com](https://squaremouth.com) or [Travelguard.com](https://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 an 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 main objective of this program is to introduce students to the theory and practice of zooarchaeological analysis.

To achieve this objective, the program will (a) engage students in developing a practical working knowledge of **zooarchaeological analysis** through hands-on participation in all aspects of the

assessment and analysis of excavated faunal remains; (b) introduce students to the **intellectual challenges presented by zooarchaeological analysis**, including research design and the interpretation of data through lectures, critical reading, and discussion; and (c) introduce students to the **different approaches taken to zooarchaeological analysis**, including UK commercial approaches, US commercial approaches, and academic approaches.

Students will participate in the following research activities:

Zooarchaeological identification: Students will study the comparative osteology of domestic animals frequently recovered from archaeological sites: horse, cattle, pig, sheep, goat, and dog.

Zooarchaeological assessment: Using their identification skills, students will undertake assessment of excavated faunal remains, creating a basic understanding of an excavated assemblage that clarifies its research value.

Zooarchaeological analysis: Students will undertake analysis of excavated faunal remains, engaging in detailed study of significant faunal assemblages, leading to a thorough understanding of the cultural implications of the remains.

Record keeping: Students will contribute to the recording of the analyzed faunal remains using the assessment and analysis spreadsheets employed by archaeology.biz for their commercial projects.

Photography: As part of the process of assessment and analysis, students will learn to photographically document significant faunal remains.

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, so listing (and ranking) those should help students secure CRM employment. 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
Zooarchaeology	Ability to document and study ancient faunal remains
Faunal Material Documentation	Ability to measure, record, photograph, and classify faunal remains in the lab/post ex setting
Faunal Material Classification	Ability to sort faunal remains by the cultural meaning of their modifications
Faunal Material Photography	Ability to professionally photograph archaeological faunal remains
Fauna Age & Sex	Ability to identify age and sex of faunal materials
Faunal Material Pathologies	Ability to identify and interpret pathologies seen in the faunal materials

ACADEMIC GRADING MATRIX

Students will be graded based on their work as follows.

50%: Attend and participate each scheduled day, including lectures, practicals, discussions, and site/museum visits

50%: Record keeping: includes accurate completion of assessment and analysis spreadsheets that will be checked periodically throughout the course and submitted and evaluated at the end of the course

COURSE SCHEDULE

Week 1		Readings
Monday	• Introductions: Introduction to the Hub (conducted by Hub staff), meet at course site for team introductions • Field trip: Visit Barnard Castle • Safety orientation: return to course site for introduction to lab safety and signing of risk assessments • Practical: How to approach faunal remains	Required: • Baker and Worley 2019, pages 1-79 • Gifford-Gonzalez 2018, Chapters 8-10 • Redding 2010 Recommended: • Reitz and Wing 2008, Chapters 1-3
Tuesday	• Lecture: Basics of zooarchaeology I: Mammals • Practical: introduction to record keeping • Practical: Introduction to using the reference collections • Lab work: Work on faunal assessments	
Wednesday	• Lab work: Work on faunal assessments • Lecture: Basics of zooarchaeology II: Birds	
Thursday	• Lab work: Work on faunal assessments • Lecture: Basics of zooarchaeology III: Fish, mollusks, crustaceans, insects	
Friday	• Lab work: Work on faunal assessments • Discussion: Using zooarchaeology to understand social differences: Redding 2010	
Week 2		
Monday	• Lab work: Work on faunal assessments • Lecture: Understanding teeth • Field trip: Visit the Bowes Museum	Required: • Gifford-Gonzalez 2018, Chapters 4, 6 and 7 • Valenti and Salvadori 2007 Recommended: • Gifford-Gonzalez 2018, Chapter 5 • Crabtree 1990
Tuesday	• Lab work: Work on faunal assessments • Lecture: Coding bone modifications	
Wednesday	• Lab work: Work on faunal assessments • Lecture: Bone modifications: Butchery	
Thursday	• Lab work: Work on faunal assessments • Lecture: Bone modifications: Burning	

Friday	• Lab work: Work on faunal assessments • Discussion: Using zooarchaeology to understand site provisioning: Valentini and Salvadori 2007	
Week 3		
Monday	• Practical: Analysis vs. assessment • Lecture: Bone modifications: Gnawing • Field trip: Visit St. Mary’s church	Required: • Stein 2012 Recommended: • Gifford-Gonzalez 2018, Chapters 11-13 • Gaastra and Insoll 2020
Tuesday	• Lab work: Work on faunal analyses • Lecture: Bone modifications: Taphonomy	
Wednesday	• Lab work: Work on faunal analyses • Lecture: Determining animal sex	
Thursday	• Lab work: Work on faunal analyses • Lecture: Ageing animals: Epiphyseal fusion	
Friday	• Lab work: Work on faunal analyses • Discussion: Using zooarchaeology to understand identity and ethnicity: Stein 2012	
Week 4		
Monday	• Lab work: Work on faunal analyses • Lecture: Ageing animals: Tooth eruption and wear	Required: • MacKinnon 2010 Recommended: • Gifford-Gonzalez 2018, Chapters 14-16 • Upex and Dobney 2012
Tuesday	• Lab work: Work on faunal analyses • Lecture: Ageing animals: Mortality profiles	
Wednesday	• Lab work: Work on faunal analyses • Lecture: Archaeological science and zooarchaeology	
Thursday	• Lab work: Work on faunal analyses • Discussion: Using zooarchaeology to understand human-animal relationships: MacKinnon 2010	
Friday	• Lab work: Finalize faunal analyses • Wrap-up discussion: Where	

- Course structure may be subject to change upon directors' discretion. The course meets on weekdays only.

A TYPICAL WORKDAY

Time	Activity
9:00am-1:00pm	Morning lab work, practicals, lectures, and/or field trips
1:00-2:00pm	Break for lunch
2:00-6:00pm	Afternoon lab work, lectures, field trips, and discussion

ATTENDANCE POLICY

The required minimum attendance for the successful completion of the field school is 85% 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 program study plan through additional readings, homework or tutorials with program staff members.

PREREQUISITES

There are no prerequisites. This is hands-on, experiential learning, and students will study on-site how to conduct archaeological faunal analysis. The work requires patience, discipline, manual dexterity, and attention to detail.

TRAVEL & MEETING POINT/TIME

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 cancellation of a program. The ARC typically takes a close look at local conditions 6-7 weeks prior to program beginning and makes a Go/No Go decision by then. Such time frame still allows for the purchase of deeply discounted airline tickets while protecting students from potential loss of airline ticket costs if ARC is forced to cancel a program.

Students will be met at the Newcastle Airport arrival area (Fig 1) on the first day of the program at 5:00pm and then will be transported to the TCR Hub by designated minibuss transfer. If you plan to arrive from the Manchester or Edinburgh airports, you will be responsible for arriving at the TCR Hub on your own.

If you missed your connection or your flight is delayed, please call, text or email project the director immediately. A local emergency cell phone number will be provided to all enrolled students.



Figure 1: Arrival area at Newcastle Airport

PROGRAM ETIQUETTE

Cultural norms in Barnard Castle are similar to cultural norms in many cities in North America. Barnard Castle is a thriving English market town, and students should be prepared to encounter and respect people from a wide variety of cultures and backgrounds.

EQUIPMENT LIST

Students need to bring a laptop for this course; however, all other lab equipment will be provided. Students are required to wear long pants, closed-toe shoes, and socks in the lab and should be sure to bring suitable lab clothing. Additionally, students are asked to bring their current student IDs for discounted access to sites and museums.

VISA REQUIREMENTS

US citizens and most other visitors travelling to the UK need an [Electronic Travel Authorisation \(ETA\)](#) to visit the UK. An ETA costs £16. Students must obtain ETA on their own and the cost is not covered by the program's tuition.

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

MEALS & ACCOMMODATION

This program takes place in Barnard Castle, a thriving market town in the north of England known for its historic city center and eponymous castle, which students will visit during the course of the program.

Students will stay in dormitory housing with shared bathrooms at the [TCR Hub](#), a vibrant community center in Barnard Castle. The Hub is located in a beautiful natural setting that includes a pond and public access trails. Outdoor activities such as canoeing and kayaking are available by arrangement directly with the Hub staff. Bedding is not provided, so students are asked to bring a pillow, sheets, and a blanket for a single bed (a light sleeping bag is also an option). From the Hub, it is an approximately 20-minute walk to the city center where the course is held.



Figure 2: Entrance to the TCR Hub

With the exception of the Arrival Dinner (Sunday, July 18), Welcome Dinner (Monday, July 19) and the Traditional Sunday Roast (Sunday, August 9), students are responsible for supplying their own food. The Hub provides access to a kitchenette with a small fridge, microwave, toaster, electric kettle, sink, dishes, and utensils. The kitchenette does not have an oven/stove. Students who choose to use the kitchenette are expected to clean up after themselves promptly.

Inexpensive meal options can be found in grocery stores and restaurants around Barnard Castle. The Hub has a community fridge and food rescue program that is available to all for a suggested donation of £3 (ca. \$4.00) per bag of food taken. There is a grocery store located a 6-minute walk from the Hub, open 8am-10pm Monday-Saturday and 10am-4pm Sunday, where students can buy a variety of sandwiches, salads, and microwavable ready meals for £4.00-£5.00 (ca. \$6.00-\$7.00). Grocery stores in the city center offer meal deals consisting of a packaged sandwich or salad, a side, and a drink for £4.00-£5.00 (ca. \$6.00-\$7.00). The city center is full of bakeries and cafes offering sandwiches, savory pies, and “bakes” for under £5.00 (ca. \$6.00). Many of the small eateries and fast-food restaurants around town offer meal deals costing approximately \$8.00-\$13.00. There are also fish & chip shops, pubs, and restaurants in town that offer hot meals for approximately \$13.00-\$20.00.

Barnard Castle’s public transportation is excellent, connecting the town with an efficient & affordable bus system, and the Hub is a 4-minute walk to the nearest bus stop. On weekends, it

is possible to get the bus to Darlington; and from there, an excellent train system connects students with destinations across the United Kingdom.

PRACTICAL INFORMATION

- **International dialing code:** +44
- **Money/Banks/Credit Cards:** Great British Pound. For current exchange rate, see <https://www.xe.com/currencyconverter>. Credit cards, debit cards, and payment apps are widely accepted, and some restaurants and businesses are cashless.
- **ATM Availability:** ATMs are widely available
- **Local Language:** English is the primary language spoken in England. Students can expect that speaking English is an option in all shops, restaurants, medical facilities, etc.
- **Measure units:** degree Celsius (°C), meter (m.), gram (gr.), liter (l)

ACADEMIC CREDITS & TRANSCRIPT

Attending students will be awarded 8 semester credit units (equivalent to 12 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 160 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 transcripts 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 readings will be provided to enrolled students via a shared Dropbox folder.

- Baker, P. and Worley, F. 2019. [*Animal Bones and Archaeology - Recovery to archive*](#). Historic England Handbooks for Archaeology.
- Gifford-Gonzales, D. 2018. *An Introduction to Zooarchaeology*. Cham, Switzerland: Springer.
- Redding, R. 2010. Status and Diet at the Workers' Town, Giza, Egypt. In *Anthropological Approaches to Zooarchaeology: Complexity, Colonialism and Animal Transformations*, edited by D. Campana, P. Crabtree, S.D. deFrance, J. Lev-Tov, and A. Choyke, pp. 65-75. Cambridge: Oxbow.
- Valenti, M., and Salvadori, F. 2007. Animal Bones: Synchronous and Diachronic Distribution as Patterns of Socially Determined Meat Consumption in the Early and High Middle Ages in Central and Northern Italy. In *Breaking and Shaping Beastly Bodies: Animals as Material Culture in the Middle Ages*, edited by A. Pluskowski, pp. 170-188. Oxford: Oxbow.
- Stein, G. J. 2012. Food preparation, social context, and ethnicity in a prehistoric Mesopotamian colony. In S. R. Graff and E. Rodríguez-Alegría (eds.), *The Menial Art of Cooking. Archaeological Studies of Cooking and Food Preparation*. Pp. 47-63. Boulder: University Press of Colorado.
- MacKinnon, M. 2010. 'Sick as a dog': zooarchaeological evidence for pet dog health and welfare in the Roman world. *World Archaeology* 42(2): 290-309.

RECOMMENDED READINGS

- Reitz, E. J., and Wing, E. S. 2008. *Zooarchaeology*. Second Edition. Cambridge: Cambridge University Press. (ISBN 978-0521857260)
- Crabtree, P. J. 1990. Zooarchaeology and complex societies: some uses of faunal analysis for the study of trade, status, and ethnicity, in *Archaeological Method and Theory*, vol. 2, edited by M. B. Schiffer, pp. 155-205. Tucson: University of Arizona Press.
- Gaastra, J. S., and Insoll, T. 2020. Animal Economies and Islamic Conversion in Eastern Ethiopia: Zooarchaeological Analyses from Harlaa, Harar and Ganda Harla. *Journal of African Archaeology* 18: 181-208.
- Upex, B., and Dobney, K. 2012. More Than Just Mad Cows: Exploring Human-Animal Relationships through Animal Paleopathology, in *A Companion to Paleopathology*, edited by A. L. Grauer. Oxford: Wiley-Blackwell.
- Locker, A. 2007. *In piscibus diversis*; the Bone Evidence for Fish Consumption in Roman Britain. *Britannia* 38: 141-180.
- Albarella, U. and Thomas, R. 2002. They dined on crane: bird consumption, wild fowling and status in medieval England. *Acta zoologica cracoviensia* 45: 23-38.