UNDERWATER CULTURAL RESOURCE MANAGEMENT AT LAKE ERIE, PA

Course ID: HIS 489

July 14 – August 10, 2024

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

School of Record: Culver Stockton College

This is an underwater Cultural Resource Management (CRM) field school. It is designed to train students for the specific needs of marine CRM and as a job training program. Students seeking training in academic underwater archaeology may participate but need to understand that the program will have significant concentration on compliance, legal frameworks of marine CRM and immersion in consultation practices.

A SCUBA certification course will be offered the week prior to the field school for students who do not possess a certification. Contact Dr. Ben Ford – program director – for more information.

DIRECTORS:
Dr. Ben Ford – Professor of Anthropology, Indiana University of Pennsylvania (ben.ford@iup.edu)
Dr. Jessi Halligan – Associate Professor of Anthropology, Texas A&M University (jessihalligan@gmail.com)
Dr. Joe Stahlman – Tribal Historic Preservation Officer, Seneca Nation of Indians (Joe.Stahlman@sni.org)

PROGRAM DESCRIPTION

Cultural Resource Management, the legally required management and protection of our shared heritage, requires archaeologists to do more than just archaeology. Also referred to as CRM, Cultural Resource Management requires an understanding of legal frameworks, professional ethics, consultation, and project management. Conducting CRM in an underwater environment also requires specialized skills in marine remote sensing, landscape reconstruction, and, occasionally, SCUBA diving.

This field school teaches the skills of underwater Cultural Resource Management through research on the submerged landscapes of Lake Erie. This program will not focus on shipwrecks (the more academic side of marine archaeology) but on understanding submerged landscape as this is the mainstay of Marine CRM work and where the greatest need for trained marine CRM professionals is. The skills taught in this course are similar to those employed in CRM to identify sites prior to offshore energy (wind, oil, and gas) development. This course is appropriate for students interested in both Cultural Resource Management and traditional academic archaeology in an underwater environment.

Until approximately 4,000 years ago, Lake Erie was lower than it is today, leaving large swaths of the modern lake bottom open for habitation. During earlier times, the lake basin contained two smaller lakes connected by a wetland and stream. This mixture of environments would have been attractive to humans, and the quick filling of the basin likely preserved sites in situ. By combining marine remote sensing, geoarchaeology, and Indigenous knowledge, we will identify areas on the lake floor that likely contain submerged habitation sites.

IMPORTANT DISCLAIMER

The Center for Field Sciences was established to support field training in a range of sciences at sites across the world. Traveling and conducting field work involves risk. Students interested in participating in any CFS program must weigh the potential risk against the value of education provided for the program sites of their choosing.

Risk is inherent in everything we do and the CFS takes risk seriously. A committee of leading scholars review each field school location prior to approval. Once a program is accepted, the CFS continually monitor conditions at the program site, its academic quality and ability to conduct as safe of an experience as possible.

The CFS 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 cover 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.

You should be aware that conditions in the field are different than those you experience in your home, dorms or college town. You will be exposed to the elements, live in rustic accommodation, and expect to engage in physical activity daily.

We do our best to follow schedule and activities as outlined in this syllabus. Yet local permitting agencies, political, environmental, personal, 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 change.

All students must consult medical professionals to ensure they are fit to participate in this program. If you have any medical concerns, please consult your doctor. For all other concerns, please consult with the program director – as appropriate.

COURSE OBJECTIVES

At the end of this course students will have an understanding of the Cultural Resource Management process and underwater archaeology. Students will be able to describe the US laws that pertain to submerged cultural resources and explain how those laws are applied in a CRM context. Students will also have a working knowledge of the practical skills necessary to conduct archaeological research underwater.

To achieve these objectives, this course has three primary goals: (1) to provide students a practical working knowledge of archaeological field methods, including marine remote sensing, geoarchaeological coring, underwater science while SCUBA diving, remotely operated vehicle (ROV) operation, and recording sites underwater, (2) to introduce students to the intellectual challenges presented by archaeological research, including research design, data analysis and interpretation, and need to bring together multiple lines of evidence to address heritage preservation; and (3) to train students in consultation and reporting to ensure that the products of their work serve future generations.

The course will be based in Erie, Pennsylvania, on the shores of Lake Erie. Portions of the course will take place on Lake Erie, as well as at local facilities, including the Tom Ridge Environmental Center. Accommodation will be in the Gannon University dormitories. Students are responsible for their own meals.

Student will participate in the following research activities:

Remote sensing: Students will collect, process, and interpret marine remote sensing data, including side-scan sonar and sub-bottom profiler data.

Coring: Students will collect cores of submerged sediments and learn to process and analyze these cores to identify potential living surfaces and sites.

Underwater Recordation: Students will practice recording sites in an underwater environment.

Ethnography: Students will work with local partners to record oral histories and traditional knowledge.

Reporting: Students will co-author the annual project report.

LEARNT SKILLS

We are aware that many students may not seek academic careers but will pursue employment in the private sector. To that end, we are following the Twin Cairns Skills Log Matrix™ (https://twincairns.com/skill-set-matrix/) and will provide training for the following skills:

Skill	Skill Definition
CRM Legislation	Ability to understand and implement relevant CRM legislation at the Federal and State level (including NEPA and Section 106)
Consultation	Ability to understand the interests and conduct consultation with all relevant stake holders
Compliance-State Legislation	Understand how to find and comply with individual state legislation, laws and rules concerning cultural and natural heritage
Compliance-NHPA/NEPA	Understand how to comply with the federal National Historic Preservation Act (NHPA) and the National Environmental Policy Act (NEPA)
Compliance-NAGPRA	Understand how to comply with the federal Native American Graves Protection and Repatriation Act (NAGPRA)
Understanding Stratigraphy	Ability to understand the relationships between layers of both cultural and natural depositions

Geoarchaeology	Ability to collect, sample and analyze soil and sediment samples through dry sieving, wet sieving and flotation
Geophysical Survey	Methods that use boat-based physical sensing techniques to produce a detail image or map of an area
Soil Identification	Ability to identify, describe and record different types of soil and depositions
Public Interpretation	Ability to understand site history and provide clear and coherent interpretation for the public
Technical Writing	Ability to write technical reports in coherent language that follow both federal and state regulations and law
Ground Truthing	Ability to use map and/or GPS to navigate to a geographical location for ground truthing of remote sensing data
GPS recording	Ability to record and attribute points, lines, & polygons using a GPS receiver.
GPS navigation	Know how to navigate to given coordinates using GPS receiver.
Drone flying	Able to fly a drone and design systematic land coverage & survey
Data Software & Management	Ability to create data recording systems and collect archaeological data, with understanding of both hardware and software capabilities
Ethnography	Gathering knowledge from living humans, including traditional knowledge and oral history
SCUBA	Breathing compressed air in an underwater environment
Remotely Operated Vehicle	Piloting an ROV to inspect a submerged site
Underwater archaeology	Ability to collect archaeological data in an underwater environment.

COURSE SCHEDULE

The course will run 6 days per week for 4 weeks.

Week 1

Welcome dinner
Course Orientation
Archaeological Ethics
Cultural Resource Laws
Consultation
Introduction to Underwater Archaeology
Regional Context
Ethnography

Week 2 and 3

Marine Remote Sensing
Data Processing and Interpretation
Research Diving
Underwater Recording

Week 4

Geoarchaeological Coring
Drone Survey
Remotely Operated Vehicles

Reporting

Course structure may be subject to change upon directors' discretion.

TYPICAL WORKDAY

7:00 – Wake Up
7:15 – Breakfast
7:45 – Depart for Day's Activity
8:00 – Begin Activity (lecture, fieldwork, lab work)
12:00-12:30 – Lunch
4:00 – End Work for the Day
4:15-5:30 – Free Time
5:30 – Dinner
6:30-8:00 – Evening Activity (SCUBA class, guest lecture, etc.)

The schedule will be adapted depending on weather.

ACADEMIC GRADING MATRIX

Students will be graded based on their work as follows.

50%: Attend and participate each scheduled day, including lecture, field, and laboratory work
40%: Keep a field notebook that will be submitted and evaluated once during and again at the end of the course.
10%: Contribution to the final report

SKILLS MATRIX LEVELS

The school instructors will evaluate the level each student achieved on the list of skills provided above. Each skill will be graded on one of the following 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.

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 a medical or other personal reasons will not be taken into account if the student catches up on the field school study plan through additional readings, homework or tutorials with program staff members.

PREREQUISITES

A SCUBA certification course will be offered the week prior to the field school for students who do not possess a certification. Contact Ben Ford (ben.ford@iup) for more information.

Students need basic SCUBA certification from a nationally recognized organization. Students are required to have medical clearance to dive signed by a doctor.

This is hands-on, experiential learning and students will study on-site how to conduct archaeological research. 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 and will get sweaty and 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.

PROGRAM ETIQUETTE

Fieldwork experiences are meant to be fun, engaging, positive learning experiences. By their very nature they involve working together as a team with many different people and stakeholders. For those reasons they also can be challenging in ways most do not expect, yet equally rewarding when those challenges are overcome. Our priority is to maintain a safe, healthy, and respectful environment for faculty, staff, students, trainees, partners, stakeholders, and the public. This is why we have a **zero-tolerance** policy for disrespectful, aggressive, threatening, malicious, discriminatory, or harassing behavior on site, after hours, and online through social media.

Students are also expected to follow the laws of our host city, Erie, PA. These laws are similar to other American cities, and include prohibitions on underage drinking, and drug use. In order to support safe diving, we will also not consume alcohol the day before any planned underwater activity.

EQUIPMENT LIST

Students must bring the following items to the field. These tools will help in your research and accommodations.

- SCUBA equipment, including pressure gauge, regulator, BCD, thermal protection, mask, fins, snorkel, and weight. Equipment will be available for rent or purchase in Erie. Tanks will be provided.
- Close-toed shoes with non-slip soles
- Hat, wide brimmed hat are usually best for outdoor working conditions
- Sunscreen
- Daypack/backpack
- Any medication you need and prescription medication to last for the duration of the field school
- Water bottle, at least 1 liter
- Sun glasses with UV protection
- Work gloves
- Notebook and pen or pencil
- Swimsuit as well as comfortable work clothes

VISA REQUIREMENTS

No visas are required for US citizens. However, you should bring your passport for weekend excursions to Canada.

Citizens of other countries are asked to check the United States Embassy website page at their home country for specific visa requirement.

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 cancelation of a program. The CFS 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 CFS is forced to cancel a program.

We will meet at the Tom Ridge Environmental Center (301 Peninsula Drive, Erie, PA 16505). At 5:00 pm on July 14 Transportation will be available from the Erie International Airport to the Gannon University suites throughout the day on July 14. Transportation will be available from Cleveland Hopkins International Airport at 2:30 pm on July 14.

Please inform the project director of your travel plans and intended arrival time. If you missed your connection or your flight is delayed, please call, text or email project director immediately. A local emergency cell phone number will be provided to all enrolled students.

Figure 1: The Tom Ridge Environmental Center, PA.

MEALS & ACCOMMODATION

Accommodation will be in the Gannon University student suites. These are suite-style dormitory rooms consisting of individual bedrooms with semi-private bathrooms and shared kitchens and communal space.

Students are responsible for their own meals. We will have a communal meal once a week.

Laundry facilities are available in the building.

PRACTICAL INFORMATION

International dialing code: 1

Money/Banks/Credit Cards: US Dollar. All major credit cards are accepted.

ATM Availability: ATMs are available throughout the city of Erie.

Local Language: English

Measure units: Local units are degree Fahrenheit (ºF), foot (ft.), pound (lb.), gallon (g). We will record data in metric (meters, centimeters, etc.)

ACADEMIC CREDITS & TRANSCRIPT (CFS text – do not change)

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 transcript through our School of Record – Culver-Stockton University. CSU has authorized the National Student Clearinghouse to provide enrollment and degree verification (https://tsorder.studentclearinghouse.org/school/select). Upon completion of a program, students will get an email from CSU 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 CSU 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.

Braje, Todd J., Tom D. Dillehay, Jon M. Erlandson, Richard G. Klein and Torben C. Rick
2017 Finding the first Americans. *Science* 358(6363):592-594.

Catsambis, Alexis, Ben Ford, and Jessi Halligan
2017 Maritime Archaeology. In *Oxford Bibliographies in Anthropology*, edited by John Jackson. Oxford University Press, New York.

Cook Hale, Jessica and Ervan Garrison
2019 Climate Change, Cultural Adaptations, and Lower Coastal Plain Occupations of Georgia and Florida from the Early to Middle Holocene: Extrapolating Spatial Trends into the Offshore. *Journal of Anthropological Archaeology* 55(2019):101071

Halligan, Jessi
2020 Crossing the waterline: Integrating terrestrial and submerged site investigations in the Aucilla River, Florida, *The Journal of Island and Coastal Archaeology,* DOI: 10.1080/15564894.2020.1782541

Herdendorf, Charles
2013 Research overview: Holocene development of Lake Erie. *Ohio Journal of Science* 112(2):24-36.

O'Shea, John M.
2020 Micro-regional approaches for submerged site archaeology, *The Journal of Island and Coastal Archaeology*, DOI: 10.1080/15564894.2020.1756995

Roberts, Amy, Jennifer McKinnon, Clem O'Loughlin, Klynton Wanganeen, Lester-Irabinna Rigney, and Madeline Fowler
2013 Combining Indigenous and Maritime Archaeological Approaches: Experiences and Insights from the '(Re)locating Narrunga Project', Yorke Peninsula, South Australia. *Journal of Maritime Archaeology* 8(1):77-99. DOI: 10.1007/s11457-013-9108-2.

RECOMMENDED READINGS

Calvert, Jay, James Asa Strong, Matthew Service, Chris McGonigle, and Rory Quinn Burkett, Carl, Jr., Raymond Stewart, and William Black
2017 Mammoths, Mastodons and Paleoindian Sites in the Conneaut Lake Drainage, Crawford County, Pennsylvania. Society for Pennsylvania, Chapter 22.

Erie County
2015 Lake Erie Quadrangle: National Marine Sanctuary Proposal. Submitted by Erie County Executive. Submitted to NOAA Office of National Marine Sanctuaries.

Ford, Ben, Jessi J. Halligan, and Alexis Catsambis
2020 *Our Blue Planet: An Introduction to Maritime and Underwater Archaeology*. Oxford University Press, New York.