



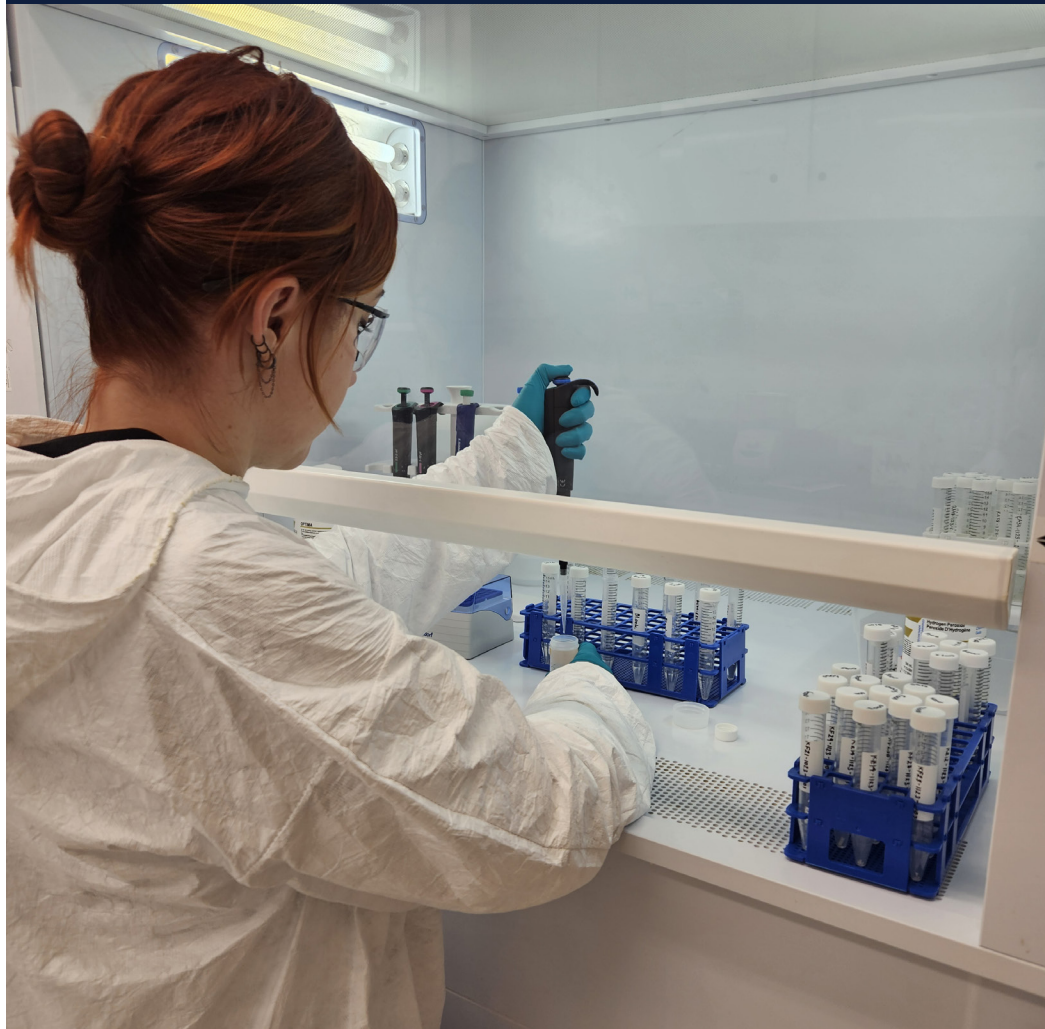
An excavation at the site of Lubozhdë, in Kosova, funded by an NSF DDRIG. See story, page 3.

Contents

Letter from the Director	page 2
Support the Museum!	page 2
Building Success with DDRIGs	page 3
Ancient Protein and Isotope Lab	page 6
Undergraduates Go to the Field	page 8

Meet the New Graduate Students	page 17
News from the Field 2024	page 20
News about UMMAA Collections	page 34
UMMAA Press	page 39

Building Success with DDRIGs



Iride Tomažič works on her dissertation project in a lab on the U-M North Campus. Here she is working within a fume hood, both to protect herself, since she is working with concentrated acids, and so that the samples don't get contaminated. The hood has a running flow of air, which prevents contaminants from entering the sample. That is also why she wears trace element free clothing: to prevent any clothing debris from entering the sample.

In a small laboratory on the U-M campus in Ann Arbor, Iride Tomažič, an archaeology graduate student, works with a set of centrifuge tubes that contain samples of tooth enamel digested in acids. Her goal is to run the samples with an ICP MS (inductively coupled plasma mass spectrometer) to identify evidence of past anthropogenic environmental contamination.

One reason Iride is able to carry out this research, which is essential for her dissertation, is that she was awarded an NSF Doctoral Dissertation Research Improvement Grant (DDRIG).

“The NSF funded all my laboratory work for my dissertation,” wrote Iride. “Receiving it was a great help since, as an international student, there are limited bigger awards I can apply to.” Tomažič’s dissertation project, titled “Dangerous Technologies,” examines communities’ values and reactions to changing metallurgical activity and the impacts of their decisions on people, animals, and the environment over the course of 3000 years in the Southern Carpathian basin.

The value of a DDRIG

The U-M Museum of Anthropological Archaeology has a history of success with DDRIGs. In all but three of the past 15 years, at least one archaeology student at the Museum has received a DDRIG—in eight of those years, multiple students (between 2 and 6) received grants. The competition for these grants is fierce: The NSF awards a total of only 30 to 40 DDRIGs in archaeology each year (shared among all US universities).

“Michigan graduate students certainly stand out from the rest of the pack, when they apply for jobs, because they have gotten a DDRIG,” points out Mike Galaty, director of UMMAA. “If you can write a DDRIG, you can write and get a Senior NSF grant. This is attractive to hiring committees.”

Colin Quinn, assistant professor of anthropology at the University of Buffalo, is a case in point. He earned his PhD in 2017 from U-M, where he received an NSF DDRIG



Hannah Hoover's dissertation project focuses on questions about daily life among Indigenous women during the colonial period. She was awarded a DDRIG to analyze ceramics and plant and animal remains found during four seasons of fieldwork in coastal South Carolina. Here, Hannah and her student volunteers (Brittney Reese and Easton Long) work to excavate a feature at Pocotaligo, an early eighteenth-century Indigenous town.

for his dissertation project, which involved archaeological survey and excavations at Bronze Age sites in Transylvania and radiocarbon dating of the finds.

"Not only did the grant allow me to complete my dissertation fieldwork, it helped me in my career in three key ways," he wrote. "First, I was able to demonstrate a track record of success in external funding that helped me secure a tenure-track faculty position. Second, my experience with the NSF DDRIG has been invaluable as I advise PhD students who are applying for this grant for their own dissertation projects. Third, I have been able to leverage the quantity of original data that I was able to generate thanks to the NSF DDRIG into a publication record that has been crucial as a junior scholar."

By design, graduate students working with faculty at UMMAA usually apply for an NSF DDRIG in their fourth year, after they have defended their thesis proposal during the third year. "Thesis proposals model NSF proposals, so they can be easily revised and submitted," Galaty explains.

The amount of a DDRIG varies depending on the project. Awards to U-M archaeology students in the past few years have varied from \$24,000 to \$39,000, a percentage of which (roughly 30-35%) goes to U-M for overhead or indirect costs. The remainder is spent on direct costs: travel, supplies, food, tools, and other expenses.

Hannah Hoover, a current archaeology student at U-M, was awarded a DDRIG to fund analysis of ceramics and plant and animal remains she recovered during four seasons of fieldwork in coastal South Carolina. "This research broadly targets questions about daily life among Indigenous women during the colonial period," she explains. "I was also able to pay two student interns at the College of Charleston to help me catalog artifacts from the excavations for long-term curation at the University of South Carolina."

U-M archaeology alum Yuchao Zhao, now an associate professor at the Institute of Cultural Heritage, Shandong University, China, also recognizes that the grant he received was critical in his research.

"The NSF DDRIG played a pivotal role in facilitating my dissertation research on the Tibetan Plateau," he wrote. "It provided the financial support necessary for conducting extensive archaeological surveys and excavations at Meilong Cave. This grant enabled me to collect and analyze a comprehensive cultural-stratigraphic sequence, which was critical for understanding the transition from hunting to herding in high-altitude environments. The backing of the DDRIG was fundamental not only in covering fieldwork expenses but also in accessing advanced analytical tools. This opportunity to conduct in-depth research led to significant findings, challenging conventional narratives



Hannah Hoover uses a sonicating toothbrush to collect starch from a ceramic sherd found during excavation; this may help determine what the vessel was used for.



Erina Baci received a DDRIG that funded her final season of excavation in Kosova as well as radiocarbon dating and isotope analysis. Her crew, pictured on the cover of the newsletter (l-r): Premtim Alaj (AIK), Bardhyll Rexhepi (AIK), Glendi Muca (UT), Ilirian Dedvukaj (UP), Areta Gjakja (UP) and Diona Osmani (UP). (AIK = Archaeological Institute of Kosova; UT = University of Tirana; UP = University of Prishtina)

and highlighting the agency of Indigenous highlanders in prehistoric times.”

Erina Baci, a U-M graduate student who just finished her final, and most extensive, field season, found that there were many benefits to being a recipient of a NSF DDRIG. Baci works in the Balkans, addressing questions of settlement and mobility during the Late Bronze to Early Iron Age (about 1450-800 BC). She has conducted excavations and surface collections at three hillforts in western Kosova; Lubozhdë (Istog), Syriganë (Skenderaj/Istog), and Hereq Baballoq (Gjakovë/Deçan).

“Planning, organizing, and running my research project was a challenging and incredibly rewarding experience—one that I feel has made me a better archaeologist but also equipped me with the experience needed to be a strong candidate on the job market. When running your project, you are not just an archaeologist, you are responsible for the safety and care of your team,” she wrote. “You wear multiple hats, all at once; you are the bus driver, lunch lady, first aid, and liaison with local collaborators and the community. Being a principal investigator forces you to think on your feet, to be flexible, problem-solve on the fly. You learn how to be a leader, how to delegate, and most importantly, how to listen. I think these are skills that are useful in all aspects of life, and I am very glad to have had the opportunity to develop them.”

The Michigan model

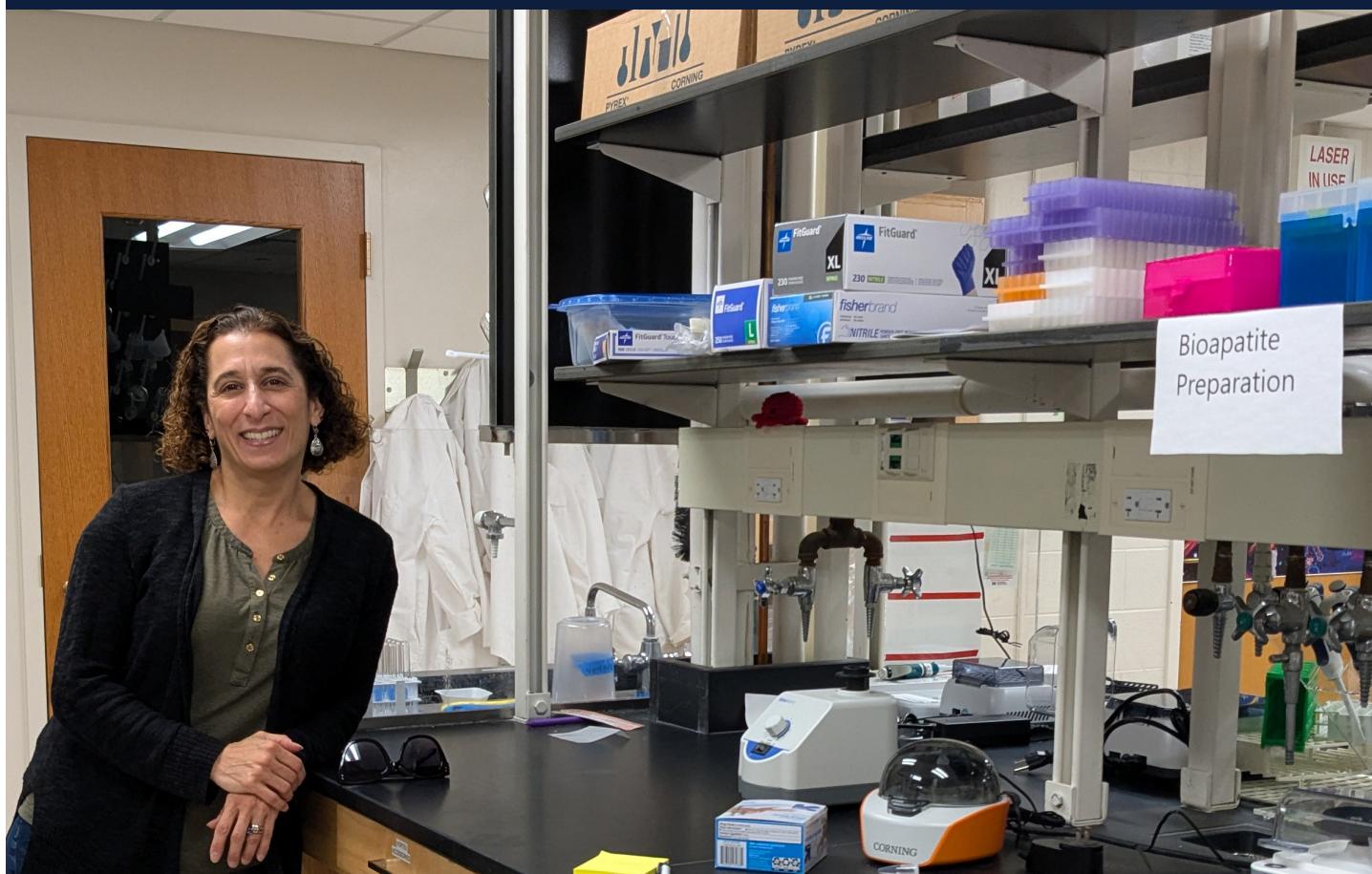
Colin Quinn recognizes his professors and his fellow students as being instrumental to his success with the NSF grant—and, ultimately, instrumental to the successful start to his career. “I attribute my successful application to the faculty and graduate students at UMMAA who generously shared their expertise (and copies of their own successful NSF DDRIG proposals!),” he wrote. “Michigan has a rich tradition of NSF DDRIG success that owes itself to the ingenuity of the graduate students and the high expectations they place upon themselves.”

Director Mike Galaty also highlights the connection between the NSF DDRIG and early success in an archaeological career.

“We have a nearly perfect placement rate; all of our students get jobs after they matriculate. This is in no small part because they all have gotten NSF grants. The two results are certainly correlated.”

To learn more: the U-M Department of Anthropology maintains a list of internal and external funding at <https://lsa.umich.edu/anthro/graduates/current-student-resources.html>.

The Ancient Protein and Isotope Lab at U-M



Lab director Alicia Ventresca-Miller in the Ancient Protein and Isotope Laboratory on the U-M central campus in Ann Arbor.

White coats hanging on steel hooks, test tubes sitting in boxes, and black epoxy countertops make this small room in the U-M Chemistry Building look like any lab anywhere. But you are not in just another lab. You are standing in the Ancient Protein and Isotope Laboratory, brainchild of lab director, UMMAA curator, and assistant professor of anthropology Alicia Ventresca-Miller.

There are many isotope labs in the country, but just a handful of them are also ancient protein labs—one is at the American Museum of Natural History in New York and one is in this small room. Ventresca-Miller asked U-M for a lab like this when she was hired in 2019; she had worked in one at the Max Planck Institute for two years. The lab is helpful for her own work, which focuses on prehistoric steppe cultures in Eurasia, but more critically, she says, she wanted it for the students.

“I could still do my work if I didn’t have the lab,” she said. “I would just send samples out for analysis to other labs. But the students...unless you have drilled the bone, prepped the bone, sent the bone out for testing,

and interpreted the results, how can you call yourself a specialist? It’s not ethical to send students out into the world without knowing the basics of scientific techniques.”

Once they go through training, any student, undergraduate and graduate, in any field or department, can use the lab.

“Anyone that is interested in the science of the past is welcome,” says Ventresca-Miller.

Many take Ventresca-Miller’s class, *Methods in Archaeological Science*, where they learn a different scientific technique each week, including how to work with ancient proteins; stable carbon, oxygen, and nitrogen isotopes; strontium isotopes; ZooMS (zooarchaeology via mass spectrometry); and ancient DNA.

Isotopes, ancient proteins, and drilling

The lab itself contains three different units: the isotope lab (the main part of the lab), the drilling room, and the ancient proteins lab.

The isotopic work consists of preparing samples, mostly of bone collagen and enamel. Those samples are then sent for analysis to other labs on campus.

Carbon and nitrogen measurements of bone collagen produce isotope ratios, explains Ventresca-Miller. “We use the ratios to interpret diet (for animals and humans), and landscape use.”

The drilling room is just what it sounds like: a place to drill and cut teeth and bones. This is essential so that the fragments can be used in various tests and analyses, including radiocarbon dating, isotopes, and ZooMS.

Projects in the ancient protein lab focus on preparing ancient human dental calculus (plaque) for analysis.

“Dental plaque can be calcified [calculus] and then it traps the food you were eating,” explains Ventresca-Miller. If the trapped particles can be identified, that reveals to researchers what people in the community were eating—which can in turn answer questions about which animals were domesticated at that time. (See illustration below).

Preparing the plaque for analysis is a complex, multistep process. After the calculus is scraped off the tooth into a test tube, it is demineralized with EDTA (ethylenediaminetetraacetic acid), which takes several days. Then the proteins are untangled and cut into peptides. The peptides are sent to a mass spectrometer on campus, and that analysis results in a list of peptides present in the tooth enamel—a list that identifies the animals and plants trapped in the dental calculus. Ideally, the species of animal can be identified, but sometimes the test is less specific and only reveals the genus or family (for instance, a cow might be identified, or only the family Bovidae, which means it could be a cow, a sheep, a goat, or a yak).

Using these methods, Ventresca-Miller has made some groundbreaking discoveries. In 2023, she was lead author on two important studies: one that revealed the first

evidence for yak milk consumption in the 13th century AD in northern Eurasia, and another that traced the adoption of millet over thousands of years, from northwestern China across north-central Asia. (See citations below; both articles are open access.)

Currently, she estimates, there are about 25 projects going on in the lab. Archaeology graduate student Kara Larson is working on her dissertation research, which examines how early urban sites were provisioned.

“Kara is studying animal bones and examining isotopic variation in sheep teeth to understand if they were herded near the site or further away,” explains Ventresca-Miller.

Another graduate student, Erina Baci, is focused on how sheep and goats were managed and moved around the landscape in Late Bronze Age-Early Iron Age Kosova.

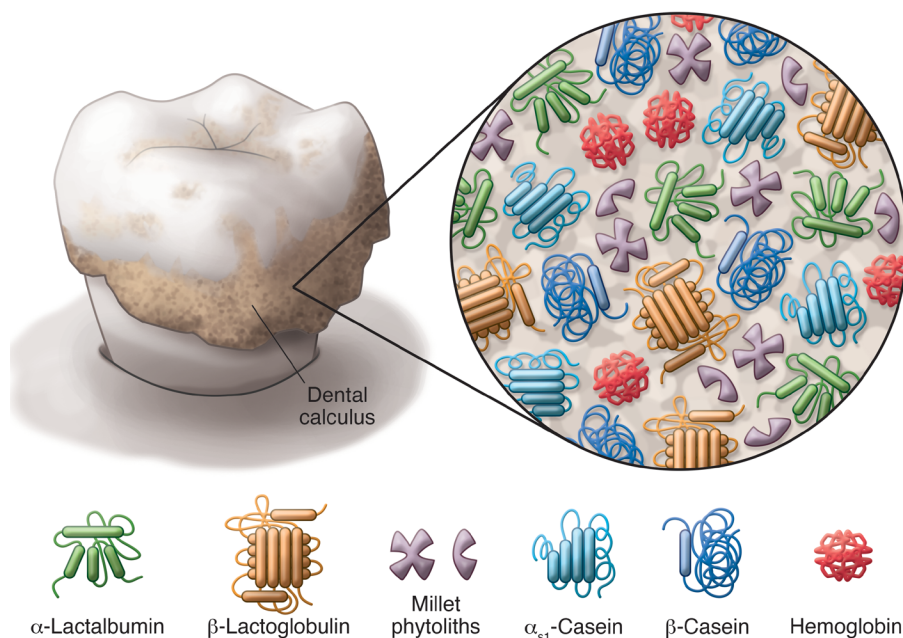
Director—and dentist

Somewhat ironically for the director of a laboratory where archaeological science is being advanced by analyzing the calcified plaque on ancient teeth, Ventresca-Miller’s first career choice was dentist. But as an undergrad, she realized her interest in past societies and instead studied human osteology and archaeology.

“As a colleague of mine says, ‘I’m a dentist for the dead’,” she laughs, leaning on the countertop in the lab.

Ventresca-Miller, A.R., S. Wilkin, J. Bayarsaikhan, et al. 2023. Permafrost preservation reveals proteomic evidence for yak milk consumption in the 13th century. *Communications Biology* 6:351. <https://doi.org/10.1038/s42003-023-04723-3>

Ventresca-Miller A.R., S. Wilkin, R. Smithers, et al. 2023. Adaptability of Millets and Landscapes: Ancient Cultivation in North-Central Asia. *Agronomy*. 13(11):2848. <https://doi.org/10.3390/agronomy13112848>



Drawing of a tooth with dental calculus. Detail shows potential dietary proteins and phytoliths that could be recovered from the calcified plaque. (Illustration by Alicia Ventresca-Miller and Bruce Worden.)

Undergraduates Go to the Field

In 2024, the Museum (UMMAA) was able to send nine undergraduate students to the field. They dispersed to the four corners of the world: Belize, Bulgaria, Croatia, Guam, Illinois, Lesotho, Peru, Romania, and Wyoming. Below they write about their experiences and their gratitude to the donors and the Museum for the chance to spend their summer developing a wide array of excavation and analytical skills.

Jacob Caton

First, I would like to give a massive thank you to the UMMAA and the Richard I. Ford Undergraduate Research Fund for funding my participation in an archaeological field school. It was an honor to receive the funding, and it played a pivotal role in my ability to attend the field school without too much financial burden. I hope that I'm able to pay it forward and use the knowledge and skills that I learned there to be an exemplary student and support the UMMAA in whatever way I can.

The field school I attended this summer, thanks in part to the UMMAA's funding, was the Wyoming Archaeological Field School, which was run and hosted by the University of Wyoming. In this field school, we went to three separate sites in western Wyoming, each of which covered a unique temporal period in the archaeological record. The first of these sites was Willow Springs, a site approximately 20 minutes south of Laramie; this site has evidence of Paleoindian, late prehistoric, and historic occupation, and is believed to have been a stop on the Overland Trail. This site served as a good primer for the rest of the field school, as we were able to stay in the dorms and avoid living in the bush, which made it easier to focus on learning the fundamentals of archaeological excavation (e.g., pedestrian survey, shovel/auger test pits, dry screening, 1x1 units, curation, etc.). This effort was sullied by the wind and mosquitoes, however; on days where the wind wasn't blowing at least 20 miles an hour, we were being eaten alive by mosquitoes that were capitalizing on the only water source in a five-mile radius.

Another rude awakening, at least for a Michigan native, was that it becomes exponentially easier to get sunburnt as you go up in elevation. I don't think there was a single day where the UV index was below 8, and my nose suffered greatly from it. In other words, it was a perfect introduction to working in the field!

The second site we excavated was La Prele, a Clovis period mammoth kill site that's been dated to approximately 13,000 years old and has a long history of excavation. The work here was more precise than that at Willow Springs, and the sediment all but ensured that we had to work for every last centimeter of depth. Picking the screens here was brutal; five-gallon buckets of dirt would take upwards of an hour to pick through despite hosing them down with enough water to irrigate an entire field of crops. I think the most important thing I learned here was



Jacob Caton on the final day of excavation at Willow Springs, holding a bison bone that he originally thought was a rock. He says, "This wasn't supposed to be the last day, but high winds (50+ mph gusts) made excavation the next day so hard that Dr. Spencer Pelton, the Wyoming state archaeologist, called off excavations that day. It was the first time he'd ever done that in his entire career!"

how to work in and around a lot of other people. There were upwards of twenty-five people working side by side, and it required a lot of coordination (and squeezing) to ensure that everyone was able to excavate and get readings from the total station without encroaching on other people's 1x1 units. Being able to hear Dr. Bob Kelly's stories from his early days in the field made all of the hard work during the day worth it. This was the final season and I'm honored that I was able to contribute to a site that's as important as La Prele is before it was left for future generations.

The final site we excavated was the former city of Carbon, located in the middle of nowhere in Carbon County. Carbon was the first coal mining town in

Undergraduates Go to the Field

Wyoming, established in 1868 by the Union Pacific Railroad, and was abandoned before the turn of the century after the mines became unproductive.

Excavating here was different from the other sites, as the amount of plainly visible artifacts you'd turn up with a single motion of the trowel dwarfs what you'd find in an entire session at La Prele. Being a historic site meant that many of the artifacts were familiar, which was a nice change of pace for someone not very familiar with faunal remains and lithics. My favorite personal find of the field school was something I found here: a little dachshund, no bigger than my thumbnail, made of metal. I thought it was a piece of slag when I first picked it up! Carbon served as a good wrap-up to the field school, as it brought together all of the skills we learned at the previous two sites (excavation, survey, etc.) while also helping us learn what it's like to work at a truly remote site.

Overall, I'd say that my experience this summer was a resounding success. I learned a ton from some really great people, and I'm sure that the professional and personal connections I made there will last far into the future. I want to again thank the UMMAA and the Richard I. Ford Undergraduate Research Fund for making this possible; I can't express my gratitude enough.

Nadia Hjortsberg

I am grateful for the grant from the Carl E. Guthe Endowment. I used this award to attend the Lopor Archaeological and Bioarchaeological Field School in Lopor, Croatia, to further my education in anthropology. Thank you to the generous University of Michigan donors whose support allowed me to attend this field school!

The Lopor Field School provided me with an introduction to archaeological fieldwork and bioarchaeology, with a combination of theoretical lectures and hands-on activities. Throughout the field school, we had lectures on relevant topics. We began by learning about the history of the Lopor site. Next we learned about excavation techniques, including survey methods, the use of tools, and how to maintain a healthy posture while working. Additionally, we had bioarchaeology lectures, where we learned how to age and sex human skeletons. I used the total station to measure the trenches, dug, troweled, cleaned and identified bones from previous excavations, and more. From this experience I have the foundational knowledge necessary for future archaeological fieldwork. The Lopor Field School also provided the opportunity to explore Zagreb and surrounding areas. We toured the city, visited museums—such as the Archaeological Museum in Zagreb and the Neanderthal Museum in Krapina—and visited small towns near our site.

I am grateful that I was able to learn about Croatian culture through first-hand experience during my field school.

What resonated the most with me was the ever-present need for patience and adaptability. Archaeology can be slow and frustrating because you never know when or if you will find something. While we were intent on finding a grave, we instead uncovered a segment of the medieval wall surrounding the Lopor church. Along the wall, we expected to find a considerable amount of pottery fragments, but we did not.

I chose to attend the Lopor Project to learn what it means to work in archaeology and to apply the theoretical knowledge I have gained at the University of Michigan to a hands-on experience.

Fieldwork is a valuable component of a well-rounded education in anthropology; having this experience will enrich my future anthropology classes at the University of Michigan. I plan to take more archaeology classes in my remaining semesters at Michigan and hope I can delve more deeply into the study of burials. In the long run, this experience that the UMMAA provided me will prepare me to succeed in future excavations and help me pursue graduate school. I am thankful for UMMAA's support as I pursue my passion for archaeology!



Nadia Hjortsberg (far left) and other students at the field school in Lopor, Croatia, uncovering the underground part of the medieval wall that surrounded the Lopor church.

Undergraduates Go to the Field



Olivia Humphrey at the Mayan archaeological site of Xunantunich in the ruins of a lower-class housing complex.

Olivia Humphrey

Without the generosity of UMMAA and the award that I was given, I would not have been able to afford to participate in the Belize Valley Archaeological Reconnaissance project and take the first crucial step toward a career in anthropology—my dream career.

For the three weeks I spent in Belize, I gained the invaluable experiences and skills that a field school provides, as well as some unique insight from my superiors on the project. Along with roughly twenty other students, we learned the technical skills required to do archaeological fieldwork. This included surveying, setting up units and measuring, artifact identification, laboratory work at the start of every day, and the actual act of excavating. I learned how to use a lot of tools—including a plumb bob, which was something I didn't even know existed!—from professionals who use them every day. I spent about eight hours a day excavating and doing laboratory work and then spent the nights attending lecture series provided

by typology experts and Belize's best archaeologists. I had several quizzes, including a unit quiz and an artifact identification quiz, and a final summary exam. The grade I received from the classroom aspects of the field school will count for my major once the credits transfer.

On the weekend, we were given the option to attend tours hosted by the project's faculty. I toured the Maya sites of Caracol, ATM Caves, Cahal Pech, and Baking Pot. The tours were led by the people who actually discovered and excavated them themselves. This was an amazing experience. There are currently only two Belizeans in the world who hold PhDs in Belizean archaeology, and I got to meet both of them, including Dr. Jaime Awe, the former director of the Institute of Archaeology.

Learning from Dr. Awe was an extraordinary opportunity. We could drive past what seemed like a slightly hilly field, and he could identify with just a glance what was and wasn't a structure—not only that, but he could guess with fairly decent accuracy what kind of structure it was. Every archaeological site that I visited, worked at, or heard about had been managed by him decades ago.

As for my personal work, I worked on Xunantunich, excavating what we believed was a house complex but turned out to be a residential structure for middle-elites of Xunantunich society. The locals helped us excavate, the tourists watched us and asked questions, and we even saw a documentary crew come in and try and interview our supervisor for a special on haunted Maya ruins. I found my first artifacts on this project: an incense burner, marine shells, some obsidian flakes, and lots and lots of pottery and chert. I learned how to identify not only what the artifacts were, but what they meant in a broader sense for the site. The incense burner and pottery sherds I found were indications of late-terminal deposits. The obsidian—not just blades, but flakes—implied that the residents of the complex were working with obsidian. Not only was this proof of an artisan in residence, but it also was proof of trade going on between other Central American regions, as obsidian is not native to the region.

I reiterate how important this opportunity was for my career and how grateful I am to the Museum for making it possible. Field school is an essential step towards any career in this field, and I worried it would be out of my grasp. I plan to narrow down my regions of interest and maybe focus more on ethnographic research in my remaining three years as an undergraduate. The Museum gave me the financial confidence for this to be possible, and I can't wait to see what other opportunities the department of anthropology at the University of Michigan will present me with.

Undergraduates Go to the Field

Gabrielle Marsh

Gabrielle had a rewarding summer, participating in a lab season with the Proyecto de Investigación Arqueológica Muyumogo (PIAM), in Cusco, Peru, directed by Matthew Brown, who has been excavating that site for his dissertation. For her honors thesis Gabrielle is studying the Muyumogo burials. During her time in the lab, she was trained in portable X-ray fluorescence analysis. She scanned at least 1,000 obsidian flakes to determine the source of each. She received ceramic analysis and archaeological survey training, the latter included some precarious treks to quarries in search of an andesite source. Lastly, she was able to sort and analyze the artifacts associated with the 29 burials excavated at Muyumogo, an essential step in the development of her honors thesis.

I seek to analyze the connection between material culture and gender within mortuary contexts. This lab experience was an invaluable addition to my education and experience as a student of Anthropological Archaeology, especially as I begin the process of applying to graduate schools. After completing a field school in Lesotho earlier this summer, it was enriching to learn more about the non-excavation side of archaeology and doing so has fueled my desire to learn more about methods of analysis in bioarchaeology, the discipline I hope to pursue in graduate school. Not only did I learn new methods of analysis, but I was also able to cultivate a deeper understanding of Andean archaeology and culture by visiting a variety of archaeological sites near Cusco, such as Muyumogo itself, Pisac, and Pikillaqta. Seeing these sites enabled me to contextualize the research I've been doing in a way that reading alone simply cannot. Being able to see Inca architecture at Pisac, with its terraced fields, carefully built administrative structures, and canals, gave me a deeper understanding of the scale of Inca society, the integration of spiritual and political sectors, and some of the innovations that played a role in daily life.

Winding along the ridgeline, the path to the ceremonial center of Pisac took me up and down carefully laid Inca steps, through tunnels, and across narrow divots in the peaks, which helped me understand the complexity of Inca spiritual systems. Viewing the site of Muyumogo was another pertinent experience, given that I was able to develop a better spatial awareness of the site, how its location related to political and social changes, and the resources available in the region. In addition to visiting these and other sites, I was able to explore museums in Cusco, sample the local cuisine at a variety of restaurants, practice my admittedly weak Spanish with locals, and even took a solo trip to Machu Picchu, wherein I climbed the terrifyingly vertical route to the top of Machu Picchu Mountain. For all of these experiences and more, I am

deeply grateful to the University of Michigan Museum of Anthropological Archaeology for granting me an Undergraduate Award. Without this award, my trip to Peru would not have been possible. As a first-generation, non-traditional student who supports herself, the cost of this experience was too great to cover on my own, but UMMAA made it possible and gave me the opportunity to pursue my research project, which will open so many doors when it comes to pursuing a career in academic archaeology.

Equally as important, though, was the opportunity to really see and experience a new part of the world, which has always been a goal of mine, but always seemed financially out of reach for me. For this reason, I truly can't give enough thanks to UMMAA because my lab season in Peru was an invaluable experience that I'll never forget!



Gabrielle Marsh worked in the lab at the site of Muyumogo, Peru. She scanned obsidian flakes to determine their source and learned how to do ceramic analysis and archaeological survey.

Undergraduates Go to the Field



Shriya Nama attended field school in Bulgaria. Here she holds a small figurine from the Late Neolithic that she found in her excavation unit.

Shriya Nama

This summer I was lucky enough to attend a four-week field school in Pazardzhik, Bulgaria, working at Tell Yunatsite, a Late Neolithic and Chalcolithic site. The program was intense and a lot of work, but it was also incredibly rewarding. We started off each day bright and early, arriving at site around 6:30 am and getting right to work. As we pulled the tarps off each unit and gathered our tools, we would watch the sunrise from the top of the tell and watch the sky change colors as we began digging. Once the sun came up, it was sweltering; but even so, I had a great time talking to the other students and supervisors and listening to music as we worked. After enjoying traditional Bulgarian cooking for breakfast and dinner, we all went back to our hotel rooms to enjoy our much-needed reprieve from the heat.

In the evenings we traveled back to the site for artifact processing, lectures, and workshops. We washed pottery and bones and learned how to float soil samples to pull out charcoal and burnt seeds; we later sorted through the heavy fraction for flint, fish bones, and beads. Our lectures ranged in topic from using GIS data to warfare in prehistory to human migrations in the Balkans. In our workshops we learned how to draw pottery and excavation units.

I worked in a part of the site called Mikov's Trench, which had been hastily excavated in the 1970s and 1980s

and was one of the deepest portions of the site. The unit I was working in was intimidating at first, because there were multiple trenches, pits, and post holes that made it difficult to walk through and even more difficult to interpret. As the weeks progressed, I found myself understanding the site more and more. I was starting to see the minor changes in soil color that previously looked like the same sandy clay, and, as my supervisor explained, each feature was a piece of the puzzle, informing us what this tell might have been like thousands of years ago. We discovered so many incredible things while digging, but one of my favorite finds was a small figurine in the style of the Late Neolithic that I found while cleaning our unit. There was some debate over whether it was a bird, chicken, or pregnant woman, but the overall consensus was that it was a great find. I also spent a lot of time excavating the several ovens in our unit and identifying the clay walls built around them. While creating profiles of one of the ovens, I got the chance to practice my drawing skills by making my own field drawing of the cross sections of the oven, which I deeply enjoyed.

I'm incredibly grateful to be one of the recipients of the Carl E. Guthe Endowment. Without this money I wouldn't have been able to go on this trip and enrich not only my archaeological knowledge but also my cultural knowledge of Bulgaria. The skills I learned while abroad will be incredibly valuable to my future and I met so many wonderful people and made memories that will be near and dear to my heart for years to come.

Carly Salazar

This summer I was honored to receive a scholarship from UMMAA to cover the travel expenses for my senior thesis. Originally heading back home to Guam to gather materials and information for an experimental archaeology thesis, I ended up having the most career-directing summer of my life. My senior thesis was going to focus on the construction of Late Period (A.D. 900–1700) shell and stone jewelry and weapons, with an emphasis on replicating methods and procedures. This project was contingent on finding someone who was designing and carving shell and stone materials using the Chamorro method. Unfortunately, this plan proved to be impossible for a one-year thesis project, because even the simplest design can take up to a month to carve. I shifted to other avenues of research, which led me down a new career path.

I began my research at the Micronesian Area Research Centre (MARC), a research collections library home to more than 40,000 published works on Guam and Micronesian Studies, and around 800 unpublished theses and dissertations. The majority of the work on Guam or about Guam is completely inaccessible unless you are at

Undergraduates Go to the Field



Carly Salazar in an American tanker shipwreck from World War II, off the coast of Guam.

the MARC. Best known for their extensive collection of Spanish documents dating from the time of first contact to the Louisiana Treaty, MARC is unique in having Early Chamorro accounts. At the MARC I had access to 100,000 pages of Spanish documents, many of which were translated into English and Chamorro; they describe early Chamorro life, practices, and features.

Having to shift away from the manufacture of jewelry, I looked towards expressions of adornment. This allowed me to learn more about the burial of a woman interred with a canoe and body adornments. Canoe burials are not uncommon across the greater region of Oceania, but they are normally reserved for high-profile navigators or chiefs, rarely women. Looking into the burial I realized that I had worked with the human remains from this site over the previous summer, where I was able to see firsthand examples of bodily adornment. Since coming across the news clipping, I have decided to change my senior thesis to reflect my interest in bodily adornment in relation to gender expression and funerary rites.

In addition to developing a new thesis proposal, I was also able to join a dig on Guam, one looking at Late Period occupation of the southernmost village, Malleso' (Meritzo). Working with Dr. Bill Jeffery and Dr. John A. Peterson, I was introduced to practical methods of doing archaeology on Guam—my intended region of focus. Through my participation in fieldwork I was introduced

to sites with abundant pot sherds, adze tools, worked tridacnidae, stone weapons, and many other indicators of long term occupation. To have gained access to a working site on Guam has completely opened up my understanding of archaeology on the island, especially in the application of engaged archaeology. Dr. Jeffery, while leading the site, does not focus on terrestrial archaeology and instead is the spearpoint for maritime archaeology in Guam and Palau. I was able to participate in dives of multiple amtrak tankers from WWII, where we collected images of known tankers and discovered a pattern of unrecorded tankers down the western coast of the island. While I greatly enjoy working with terrestrial dig sites, this summer has opened up the world of maritime archaeology to me and I intend to pursue it further in my graduate studies. Going into this summer I expected to meet with a few master carvers and spend the rest of my time in the MARC, but instead I found a new direction to take my research and I developed skills more suitable for marine archaeology. None of this would have been possible without the generosity of UMMAA's Undergraduate Awards Committee. If it wasn't for this award I would still be chasing an unsuitable project and looking towards attending graduate school in a field that I wasn't meant to go into.

This award has completely changed my academic life in ways I never thought possible. Thank you.

Undergraduates Go to the Field



Hope Siwek in the unit she excavated during field school in Illinois. The tops of some broken logs are visible. These would have made up the outer wall of the building.

Hope Siwek

I attended a six-week field school in Champaign-Urbana, Illinois. Focused on curation and excavation, the field school provided a well-rounded experience of the archaeological process in its many stages. The program was run by Dr. Tamira Brennan and senior collections Specialist Sara Pfannkuche, employees of the Illinois State Archaeological Survey.

Participation in this field school taught me the essentials of working in archaeology, and it informed me on a much deeper level about the ethics of working with Native American archaeology.

The field school had two parts: two weeks doing fieldwork and four weeks working with collections in a repository. The site we excavated during those two weeks was a recreation of a Mississippian-era site that had been excavated in the region. This was my first experience working at an archaeological site. I learned how to trowel soil walls to see the stratigraphy and subsequently map those layers. In addition, fieldwork taught me much of the jargon and how to take proper field notes. It also brought to my attention the importance of the seemingly unglamorous aspects of fieldwork, such as the necessity of recording the exact provenience of everything found. Our meticulous recording of the decomposition process and other aspects of the site can be applied to sites that are similar.

In addition to the two weeks of fieldwork, I spent four weeks working in the repository of the Illinois Department

of Transportation run by the Illinois State Archaeological Survey. Most of my time here was spent stabilizing a legacy collection from a local Native American site excavated throughout the 1970s and 1980s. This collection was in rough condition. Many artifacts were stored in nonarchival materials such as brown paper or thin plastic bags.

Artifacts were falling out of these containers, and labeling was inconsistent and sparse. We pulled all relevant materials, sorted them according to the current repository standards, repackaged them, recorded each item on data sheets, and entered those data into the repository's online database. It was rewarding to participate in the stabilization process of this collection, since my contributions help allow the artifacts to continue to exist in perpetuity, hopefully contributing to future research and education.

I attended lectures, completed additional readings, and completed a final paper as part of the experience. The lectures and readings focused on curation, fieldwork, regional Native American history, and working ethically with Native American archaeological collections. For example, lectures were dedicated to topics like understanding NAGPRA and the history of archaeological practices harming source communities and how to avoid these blunders in the future. We also had guest lecturers, including a representative from a local Native American tribe who worked regularly with the Illinois State Archaeological Survey on repatriation efforts.

The experience greatly informed my understanding of archaeological work and curation, especially concerning source communities. It is important to focus on and include the source community when working with artifacts, and the curator should often be viewed as a caretaker of goods, not a true owner.

I would not have been able to attend this program without the award granted to me by the Richard I. Ford Undergraduate Research Fund – Marlon through UMMAA. The grant helped me pay for the tuition and room and board. I am extremely grateful to the museum and research fund for allowing me to experience this excellent opportunity and contribute to the research and preservation of Native American archaeology. This field experience was greatly beneficial for me in determining my future plans. I loved working in the repository preserving and working with collections. I now hope to work more in collections, possibly in roles related to conservation or curation.

I am incredibly thankful for the award granted to me by UMMAA from the Richard I. Ford Undergraduate Research Fund – Marlon. The award allowed me to participate in archaeological work in both the field and curation, during which I gained a deeper understanding of the ethics and history of Native American archaeology.

Undergraduates Go to the Field



A view of the mostly dry riverbeds of the intersecting river valley at Ha Solaja (the rockshelter at left) in Lesotho.

Calvin Stineman

Calvin Stineman reports on his field experience at Ha Solaja, an African rockshelter with Middle Stone Age and Late Stone Age occupations.

The site is situated in a valley along the Maloti-Drakensberg Escarpment of Eastern Lesotho. The team, led by Brian Stewart, primarily investigated early human adaptations to marginal environments; we also spent time learning about the Bushmen (San people). On the rockshelter's walls is prehistoric art, with a preliminary date of 5 kya. Preservation is exceptional, compared to many other sites in the area, as the drip line is far enough away from the inside of the shelter. Tool technology in Africa varies across the landscape, by techniques, and by industry. Discoveries at the shelter included bladelets, scrapers, bone tools, lithic cores, and end scrapers. There is no shortage of raw material for tools, especially sandstone and basalt. Lithic and microlithic material were abundant. Even though there were vast amounts of raw material near the site, there were lithics made of crystalline silica, like quartz, which likely required travel to a further source. Large amounts of charcoal were present in nearly all stratigraphic layers. The site appears to be a seasonal occupation, where aquatic and terrestrial animals flocked in the summer. In the winter there are harsh temperatures, wind, and snow—conditions that drive both humans and animals, like the eland, to the lowlands. Our field season took place in the winter, so we had cold temperatures at night and wind that limited our ability to excavate. To reside in the highlands during the winter, warmth and protection are essential.

One of the project goals is to show that hunter-gatherers could subsist in winter months, though not likely for long periods. With the discovery of end tools or scrapers at Ha Solaja, which are used to prepare hides, an indication that clothing was produced. The next steps are to date these tools and to reconstruct the climate. Though it is much more difficult to pinpoint short-term seasonal cycles of weather, more long-term glacial events become increasingly important to study within context. Dealing with the Paleolithic is tedious and requires patience. Besides learning excavation techniques, I had an opportunity to interact and become acquainted with a community of people in and outside of Lesotho.

Consulting and collaborating, we were working with one another to preserve a piece of the past. Besides the archaeology, the country consists of the most beautiful scenery, rondavel huts, and people. The Basotho are beyond welcoming, so friendly and curious. Herds of sheep, goats, and cattle would go by the site every day. Nearly everyone in the highlands wears a traditional Basotho blanket to protect against the cold temperatures, wind, and even against the hot temperatures. During sunny days, locals have red ochre smeared across their face and arms; it is a popular alternative to sunscreen and it comes from natural sources. Often, several ice rats perched up on the mountain and watched as we worked. Large birds would glide through the valley blaring sounds and making a drip line at the rockshelter, but not from water.

Thank you for the funds from the James B. Griffin Undergraduate Research Fund, which made it possible for me to participate in this field experience.

Undergraduates Go to the Field

Daniel Strong

With financial assistance from the Museum's Carl E. Guthe Endowment, I spent four weeks in Sânpetru, Romania, learning techniques in excavation and bioarchaeological analysis. I participated in the investigation of a fortified Saxon church operating in the town since the 13th century, in addition to processing and storing human skeletons unearthed at a different site. Between workdays, we were taken to cultural landmarks across Transylvania and allowed time to explore the country on our own. I consider my time at this field school to be the most enriching experience I've had in my life to date, academically and personally. I owe UMMAA a massive thank you for making this trip feasible.

As to education, I attained everything I could have hoped for from the program. I had entered the field school with experience as a volunteer excavator, but the formal training I received working in Sânpetru reintroduced archaeological practice to me in a complete package that fully contextualized the fragmentary knowledge I had picked up in my visits to other sites. Rebuilding my skillset from the ground up in this way and getting exposure to parts of archaeology I had never previously handled (such as site photography, recordkeeping, and calculating elevation levels) dramatically improved my abilities as an archaeologist. With all that I learned working in Trench 19, I feel I could now effectively run my own unit, record the data, and make the decisions required of any archaeologist seeking to do proper science. The foundational knowledge I acquired through this fieldwork will serve me well wherever I take my future in archaeology.

The bioarchaeology portion of the program familiarized me with a wealth of information on human bones that convey much about people and populations. Through lectures and hands-on labs, I learned how to identify a skeleton's age, biological sex, height, and general health. Students frequently handled hundreds of bones a day, scrubbing dirt off individual bones, transporting entire trays of bones into the church's chapel to dry, or sorting full skeletons into bags for long-term storage. Direct experience with human remains like this was a rare opportunity, which I doubt I could have accessed in the United States. Should I choose to specialize in bioarchaeology in my career, I've now received one of the best possible introductions to the subject available to me and gained expert contacts who could guide my research.

Studying in Sânpetru easily made me into twice the archaeologist I had been. Living abroad and embedding myself in the project connected me to a future as an archaeologist I hadn't been capable of seeing for myself before living that life for four short weeks. Among my



Medieval Transylvanian pottery sherd with preserved green glaze.

colleagues at this site were some of the kindest professors I've had the pleasure of learning from and fellow students whom I hope to stay in contact with for the rest of my life. Romania is a beautiful country filled with so many lovely people and a rich cultural history I likely would never have explored had I not traveled there for study.

I will return the first opportunity I can and bring as many people as I can convince. Thinking back to the pool of field schools I considered, I cannot imagine having gone anywhere else now that I know exactly what I've gained from Romania. I could not have chosen the program I did without the UMMAA's financial support.

To everyone involved in extending these resources to me—Director Galaty, committee members, donors, and others—thank you. Truly.

Meet the New Graduate Students

Arantxa Bertholet del Barrio



Arantxa starting to excavate a ritual pit feature at the Incononata site in southern Italy, where the team was trying to determine the nature of interactions between ancient Italic and Greek peoples.

Arantxa Bertholet del Barrio earned her bachelor's degree at George Mason University and her master's at George Washington University. Her master's thesis focused on the site of Incononata in the south of Italy, where she has worked for four field seasons: she reconsidered interpretations from old excavations (from the 1960s to the 2000s) and conducted a visibility analysis to analyze Incononata's control over the landscape and compared it to other nearby centers of influence.

She has also worked for two summers with Giulia Saltini Semerari's Trans Adriatic Project, in both Salento, Italy,

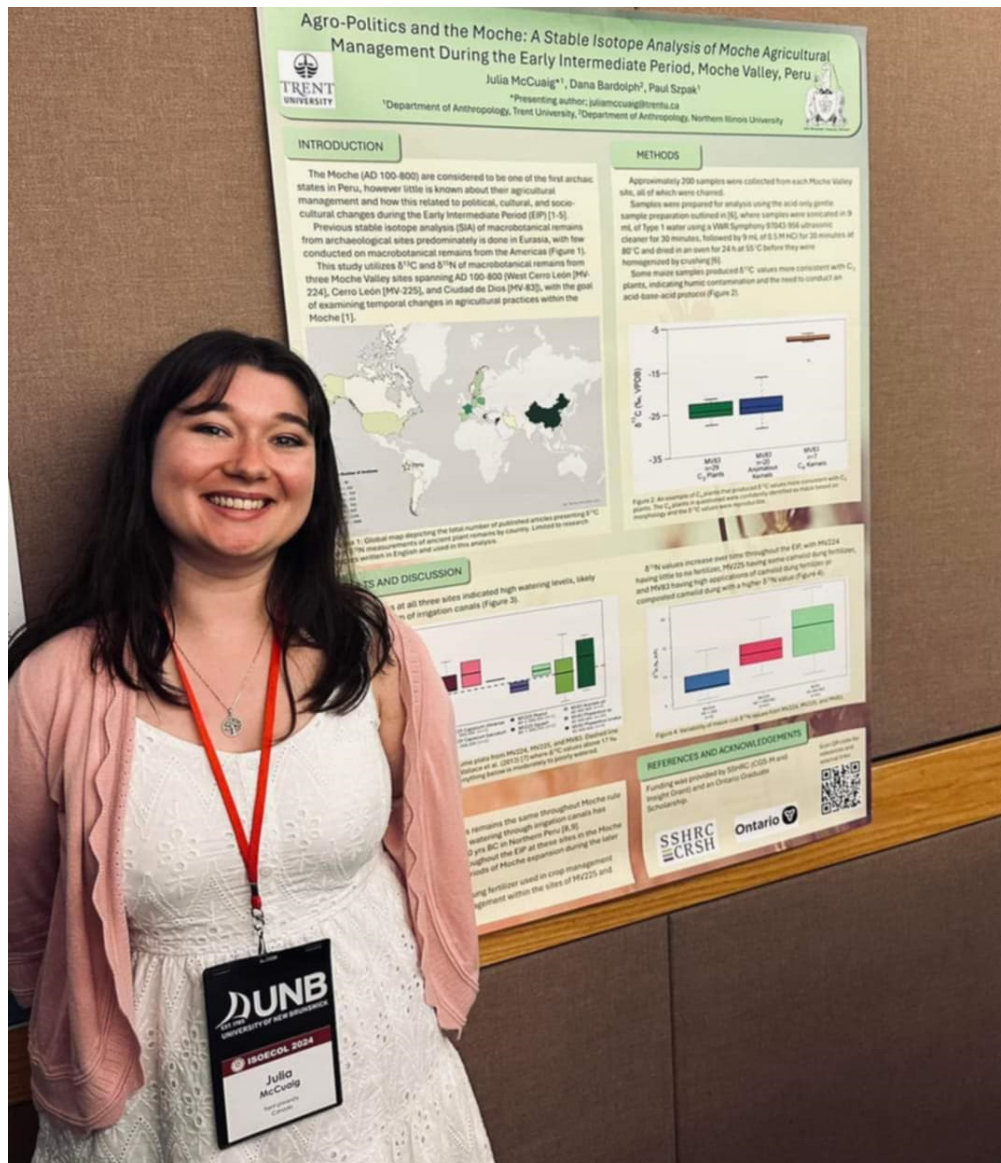
and in Burrel, Albania, where the goal is to ascertain the nature of the relationship between the ancient Greek and Indigenous peoples.

Her research focuses on mobility and connectivity during the Bronze to Iron age transition in southern Italy and northern Albania, using different geographic information systems analyses. She would like to expand her research to other areas in the Mediterranean and approach questions about this transition through metal production.

Please join us in welcoming **Arantxa Bertholet del Barrio** to our program!

Meet the New Graduate Students

Julia McCuaig



Julia McCuaig at the IsoEcol conference in Fredericton, Canada, in August 2024, presenting a poster of her master's thesis.

Julia McCuaig received her bachelor's and master's degrees in anthropology at Trent University in Ontario, Canada. For her master's research she examined the Early Intermediate Period relationship between agricultural intensification and Moche expansion throughout the Moche Valley in Peru. She accomplished this by analyzing macrobotanical remains from three sites for stable carbon and nitrogen isotopes.

In August 2024, she presented her master's thesis as a poster at the IsoEcol conference at the University of New Brunswick.

During her work in an archaeological science lab, Julia has analyzed many different species: she has prepared bone collagen of mammoth, polar bear, blue-footed boobie (Peruvian bird), salmon, and kangaroo.

Please join us in welcoming **Julia McCuaig** to our program!

Meet the New Graduate Students

Ally Sabo



Ally Sabo in Chile in 2024 examining a core with a goal to source chert in the southern Atacama using remote sensing and high-resolution satellite imagery.

Ally Sabo received both her bachelor's and master's degrees from the University of Miami (Florida). Her master's thesis focused on a lithic assemblage from the Ortiz site, an early (2340 cal BC–cal AD 310) habitation site in Cabo Rojo, Puerto Rico. She used experimental flintknapping and microscopic use-wear analysis to identify potential different use(s) of flakes and blades within the assemblage, as these two industries were maintained in parallel for millennia at Ortiz, which is uncommon for early lithic traditions on the island. Previously, she had worked on the coast of SW Puerto Rico on an extensive landscape of ancient shell mounds. This work revealed that

prehistoric populations exploited the nearby marine habitat for shellfish between 3000 and 1500 calBP, but changed their food procurement strategies abruptly in response to environmental changes.

More recently, she's been working in the Atacama Desert in Chile as part of a project spanning the Late Archaic–Inca, looking at variation in lithic procurement strategies and exchange over time and space. This is the driest desert in the world, and posed a unique suite of challenges for acquiring vital goods. This past field season she did survey and surface collection to identify and characterize sites.

Please join us in welcoming **Ally Sabo** to our program!

News from the Field 2024

Africa



Timi Ayelagbe talks about practical archaeology with people from the community in the Udo area of Edo State, Nigeria, where he carried out archaeological research.

Graduate student **Timilehin Ayelagbe** carried out preliminary investigations of the Okomu (dated to the 12th century) and Udo areas of Edo State, Nigeria. He carried out an archaeological survey within and around the Udo moat, a member of the Benin Moat System, which is said to be the longest earthworks in the world constructed prior to the mechanical era by the Guinness Book of World Records. Using shovel tests and test excavations, he established the pattern of human occupation within the Udo Moats (which he mapped with the aid of remote sensing tools) and documented evidence of the technology available to pre-Benin state settlements in the area. It is the first such archaeological inquiry in the area. He is grateful to the Rackham Public Scholarship program, the International Institute, and the Lewis and Clark Research and Exploration Fund which made collaboration with the local people possible and funds for research available. He hopes to use the current data and those from subsequent seasons to understand environmental changes (if any) and the implications on the social system and political economy of the area.

Curator **Brian Stewart** directed the 2024 U-M summer field school in advanced archaeological methods. Six anthropological archaeology undergraduates spent five weeks (May-June) in the Maloti-Drakensberg Mountains of highland Lesotho in Africa. There they participated in the excavation of Ha Soloja, a rockshelter situated at 2300 m

(7,500 ft) above sea level with an archaeological sequence stretching back over 100,000 years.

Brian Stewart, graduate student **Ying Cui** (the field school's Graduate Student Instructor) and local collaborators gave the students training in archaeological excavation techniques, laboratory skills, and heritage valorization. This was Ying Cui's first experience working there and she was excited to discover a wealth of stone artifacts and several bone tools.

The field school's hands-on component was supplemented by a series of weekly lectures on salient themes in the evolution of *Homo sapiens* and southern African archaeology. UMMAA Research Affiliate **Sam Challis** (University of the Witwatersrand, South Africa) also offered the students a rock art tour of Sehlabathebe National Park, a UNESCO World Heritage Center adjacent to Ha Soloja. The students visited the Cradle of Humankind World Heritage Site near Johannesburg and had a guided tour of the Origins Centre Museum in Johannesburg. Curator Stewart's project at Ha Soloja seeks to understand early human adaptations to harsh environments like high mountain systems. It is run in collaboration with colleagues from the University of Toronto, Flinders University in Australia, the University of the Witwatersrand and the National University of Lesotho.



At the field school in Lesotho (l-r): Local collaborator Nthabeleng Rantso, U-M graduate student and field school GSI Ying Cui, local collaborator Thato Selatile, and field school attendee Victoria Kvasnikov work on the total station. Rock art is visible on the wall behind them.

The Americas



Curator Raven Garvey excavating at Chenque Pehuen (Neuquén, Argentina) while colleague Juan Maryański documents pictographs on the shelter walls. (Photo credit: C. Della Negra)

Argentina

Curator **Raven Garvey** spent the winter term in Patagonia, excavating a cave site she documented during the inaugural survey of a project she initiated in 2023. Her excavations at Chenque Pehuen (Neuquén Province, Argentina) are ongoing and designed to better understand past human use of a rare patch of old-growth *Araucaria* (pehuén or pinyon) forest in an otherwise arid upland habitat. This international collaboration includes colleagues Claudia Della Negra (Ministerio de las Culturas), Juan Maryański (Dirección Provincial de Patrimonio Cultural), and local land stewards of the Gendarmería Nacional Argentina, a corps of border guards tasked with national defense and environmental protection. Curator Garvey also continued work on a project

begun during her Andrew W. Mellon Foundation New Directions Fellowship (2022-2024), working with aerospace engineers to better understand the effects of wind on prehistoric peoples in Patagonia, one of the windiest places on Earth.

Belize

This summer **Brett Meyer** conducted his third season of fieldwork at the secondary center of Ek Tzul in the Belize River Valley of western Belize. He conducted settlement survey and targeted excavations to understand the growth of Ek Tzul and its surrounding population. The survey revealed that lidar models for predicting settlement location underestimated the number of mounds and routinely missed

News from the Field 2024

Curator Tiffany Fryer with her daughter and colleagues in Tihosuco, giving a talk in Spanish and Yukatek Maya about the results of this year's research and opening an invitation to the community to participate in future years.



low mounds. Excavations revealed that the periphery was first occupied around the same time as the core of Ek Tzul and that the layout of the latter site was reoriented with the emergence of intermediate elite control. Future research will continue to explore the relationship between the intermediate elites living in the core of Ek Tzul and the households in its periphery.

Mexico

Curator **Tiffany Fryer** spent time in Mexico on the Yucatán Peninsula helping to further ongoing research with longtime collaborators. She and her colleagues worked to publish the fifth volume of oral histories and historic photos from her research region on behalf of her community partners. This collection focused on an historic hacienda (plantation estate) called xCafe (located on the Ejido de Tihozuco, Felipe Carrillo Puerto, Quintana Roo) where the project has been investigating for the past few years. She and her colleagues also worked with the *ejido* (land organization) to begin reconstruction on a reclaimed historic building that will contribute to the founding of a community museum in the town where she works. This work culminated in an exhibit and talks offered as part of the annual commemoration festival recognizing the Maya Social War, which is held in Tihosuco every July. Beyond fieldwork, she released a co-edited special section of

American Anthropologist titled “Reckoning with Violence,” and a co-authored article in *Antiquity* on the future of community-oriented research in archaeology.

Curator **Kent Flannery** and his co-author Frank Hole published their book on Gheo-Shih, an open-air site where a macroband came together near the Mitla River in the Valley of Oaxaca during the timespan from 7500 to 4000 BC. The site was repeatedly occupied by perhaps 25-50 people during summer rainy seasons. At other times of the year, this macroband dispersed and lived in nearby rockshelters and caves. Read more about the book, *Gheo-Shih: An Archaic Macroband Camp in the Valley of Oaxaca*, at the UMMAA Press books website: <https://sites.lsa.umich.edu/archaeology-books>.

PhD candidate **Soren Frykholm** directed a second field season of excavations at the Formative Period (300 BC-100 BC) site of Monte Negro in Oaxaca, Mexico. He is excited to publish new findings from his research in the coming academic year as well as initiate a paleogenomic/isotopic project with Mexican collaborators in 2025.

PhD candidate **Joseph Wardle** directed the second season of the Cerro Danilín Archaeological Project in Oaxaca, Mexico. These excavations will be central to his doctoral dissertation.

PhD candidate **Jennifer Larios** ran a third season of excavations at Jalieza in Oaxaca. She excavated three

News from the Field 2024



Left: Joseph Wardle directed the second season of the Cerro Danilín Archaeological Project in Oaxaca, Mexico.

Below: Soren Frykholm gives a tour of the archaeological site of Monte Negro, Mexico, to visiting students.



News from the Field 2024



Jennifer Larios directed excavations at Jalieza in Oaxaca, Mexico, for the third year. Of this photo, she notes: "I took it to remind myself of how much stuff I would carry up the mountain every day. I often forget or overlook my accomplishments, so I wanted to record what going up the hill was like on a daily basis. Ironically, I'm not a very outdoorsy person, so to me carrying up a 10/15 pound backpack up a slippery mountain is kind of a big deal. Pictured are just two of the many bags that I would carry and my vital third cup of coffee."

additional residential areas at the Early Postclassic (A.D. 750-1000) Jalieza archaeological site. During this season she uncovered residential structures and activity areas. Jennifer looks forward to analyzing the artifacts from excavations to see how the collapse of the Zapotec state affected the lives of Jalieza's residents.

Peru

Graduate student **Jhon Cruz Quiñones** directed excavations at the Tuco Ragra site in the high-altitude grasslands of the Santa Valley in Peru. Jhon carried out large-scale excavations of two complete ceremonial structures represented by megalith shrines, seventeen huts with evidence of domestic and economic activities, and two corrals, one of which was entirely excavated. This field season's results indicate that the Tuco Ragra site was occupied from the Late Archaic (5000 BP) until the Middle Formative Period (3400 BP). The excavations revealed that the site was occupied by hunter-gatherers and early camelid herders who used the site probably on a seasonal

basis to perform rites, offerings, and a ritual economy of intensifying and managing South American camelids.

This summer, doctoral candidate **Ian Beggen** conducted fieldwork in the Callejón de Huaylas in Ancash, Peru. With the aid of fellow candidate Jhon Cruz, Ian excavated part of a high-altitude rockshelter (4208 masl) with evidence of mobile forager occupations dating to around 12,000 years ago. Data from the excavation of Hatun Machay, will form the majority of Ian's doctoral dissertation. Ian aims to develop an understanding of technological adaptations to climatic fluctuations in the high-altitude puna of the Callejón de Huaylas.

Graduate student **Matthew Brown** is analyzing all the burials, features, and structures from his excavations at Muyumoqo, a key early site near the much later Inca capital. These excavated materials will constitute a major part of his dissertation.

Curator **Joyce Marcus** brought out the third volume reporting on her excavations at Cerro Azul, Peru. The first volume reported on the pottery, the brewery, fish storage, and architecture; the second volume detailed the economic strategies fisherfolk employed in this coastal ecosystem; the third volume, *The Burials of Cerro Azul, Peru* (Memoir 65), provides a full account and inventory of the late burials (AD 1000-1470) she salvaged. In the burials of males, she found slings, bolas, fishing nets, and breechclouts; and, in the burials of females, she found workbaskets, looms, cotton and woolen yarn, spindles, whorls, needles, and more. The great preservation of the Peruvian coast led to such a complete picture.

United States

Graduate student **Hannah Hoover** excavated for a fourth field season at Pocolaligo, an early eighteenth-century Indigenous town in coastal South Carolina. She and student volunteers partially exposed a public structure with a large central hearth.

During the second half of the summer, curator **John O'Shea** continued research on the environment and human use of now submerged portions of the Great Lakes during the Early Holocene. Working with Museum doctoral student **Brendan Nash**, alum **Ashley Lemke** (associate professor at University of Wisconsin–Milwaukee) and Dr. Morgan Smith (associate professor at University of Tennessee at Chattanooga), the project began sub-bottom mapping of the deepest and buried portion of the Alpena-Amberley Ridge (AAR) in search of evidence for the initial colonization of the submerged landform. Later in the summer, with divers Tyler Schultz and Jason Shaw, the research focused on the recovery of intact peat samples for the extraction of ancient environmental DNA (aeDNA).

News from the Field 2024



Above: Jhon Cruz Quiñones directed excavations at the site of Tuco Ragra in the Santa Valley of Peru. Here the crew works on the excavation of a corral.

Left: Ian Beggen excavates the lower portions of a unit in Hatun Machay in Ancash, Peru, surrounded by Peruvian colleagues (left to right: Jorge, Luis, Ian, and Faustino).

News from the Field 2024



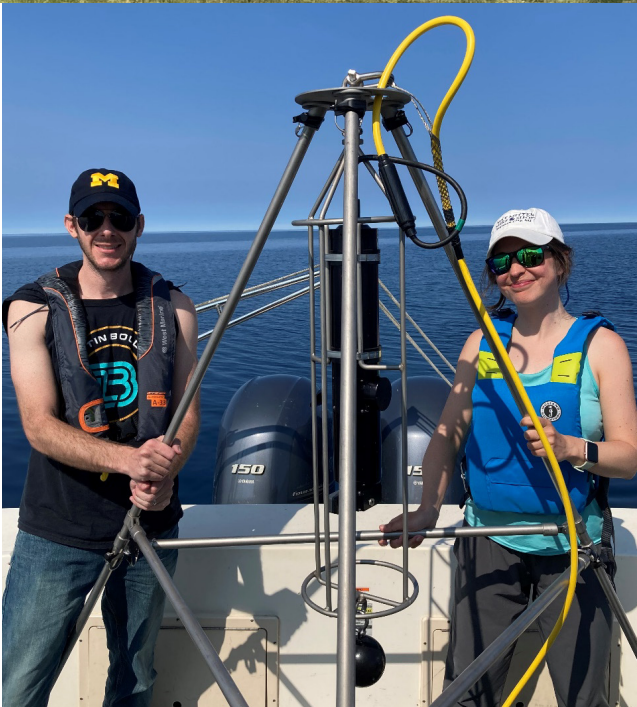
Above: Hannah Hoover collects soil samples from a hearth feature at Pocotaligo, an early eighteenth-century Indigenous town in coastal South Carolina.

Right: Curator John O'Shea (in front) and doctoral student Brendan Nash prepare for sample recovery beneath Lake Huron. Opposite page: Nash and U-M alum Dr. Ashley Lemke, University of Wisconsin-Milwaukee, prepare to deploy a scanning sonar unit to map cultural features preserved beneath Lake Huron.

The Lake Huron project field-checked site predictions made by students in Alpena High School's "Science in the Sanctuary" class. Using the Deep Dive virtual reality system, developed in collaboration with **Dr. Robert Reynolds** at Wayne State University, students explore the bottom of Lake Huron as it appeared during the Early Holocene and make predictions of where they believe archaeological sites may be located.



News from the Field 2024



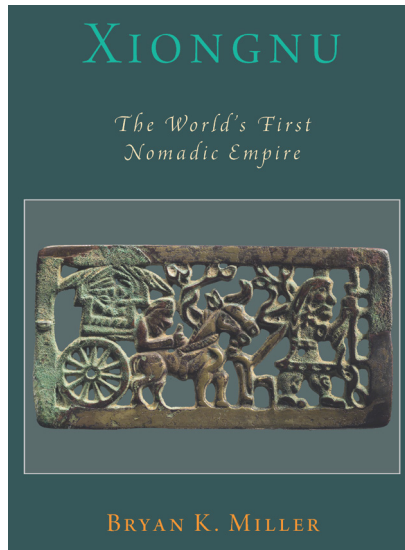
Above: Curator Rob Beck is co-directing a project at Cahokia, in central Illinois. The NSF-funded project focuses on magnetometer survey. This photograph, taken in summer 2024, looks across the Grand Plaza towards Monks Mound.

Curator **Rob Beck**'s work at Cahokia—funded by NSF and co-directed with Ed Henry (Colorado State), Tim Horsley (Horsley Archaeological Prospection), and U-M alum Casey Barrier (Bryn Mawr; U-M PhD 2014)—has resulted to date in more than 4 sq km of magnetometer survey within the boundaries of the modern state park. It is now the most extensive geophysical work undertaken in the Western hemisphere. Beck and his colleagues will use these data to better understand the density and distribution of Mississippian neighborhoods at this site, the largest north of the Valley of Mexico.

News from the Field 2024

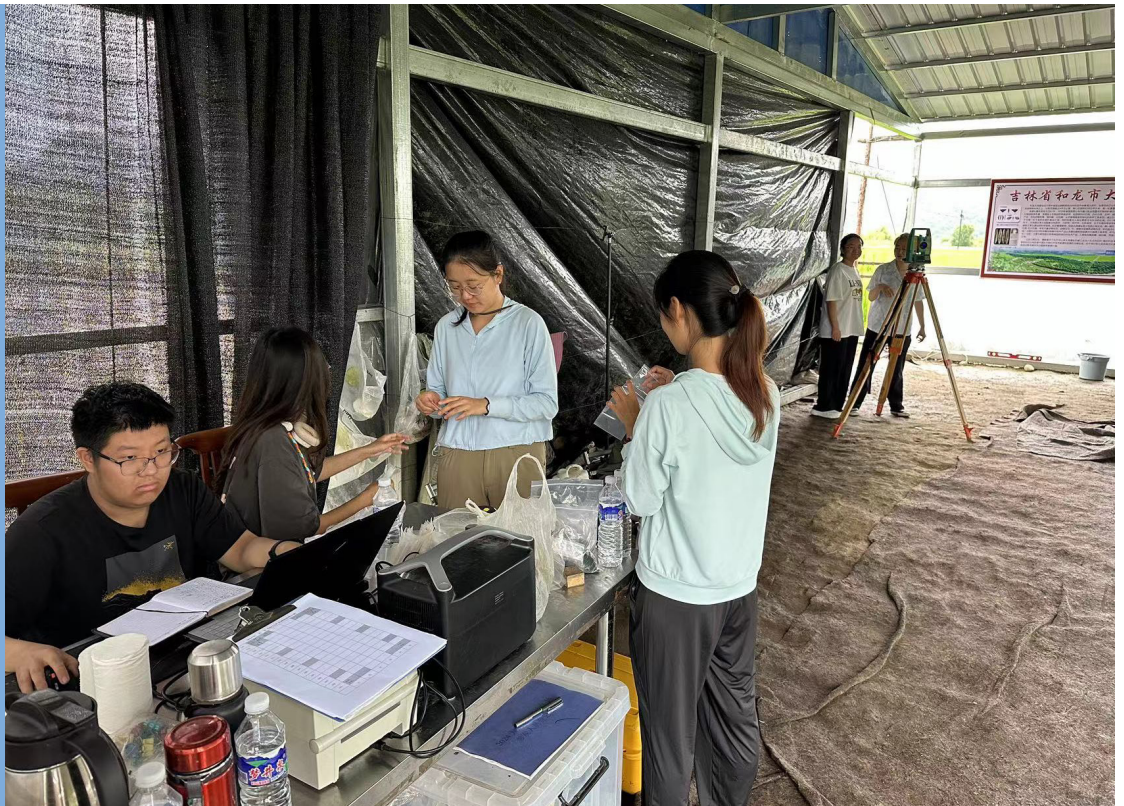
Asia

Bryan Miller, assistant curator of Asian Archaeology, recently published a book with Oxford University Press on the world's first nomadic empire, the Xiongnu. The book interweaves archaeological examinations with historical investigations to present a more nuanced narrative of how a regime in the steppe more than two thousand years ago maintained a robust political economy and a complex political matrix that enabled the Xiongnu elite lineages to dominate vast realms of central Eurasia and leave lasting geopolitical effects on the many worlds around them. A recent interview with the author on New Books Network can be found at <https://newbooksnetwork.com/xiongnu>, and a promotional code of AUFLY30 can be applied at the OUP website for a 30% discount on the book.



This summer graduate student **Ying Cui** had three distinct research experiences: starting with excavating with Brian Stewart in Africa, then attending a workshop at Shandong University in China, and participating in an excavation at a Paleolithic site in northeastern China. The international workshop aimed to foster academic exchange and strengthen friendships among young people around the world. Insightful lectures were given on various topics, including underwater archaeology in northeastern China and the development of ancient Chinese agriculture. She says: “It was a valuable experience that allowed me to learn about recent archaeological research in China and to build a network with scholars from various universities.” She participated in excavations at Dadong (Helong), a site near the border between China and North Korea. Dadong is a large Upper Paleolithic site in the volcanic region of Changbai Mountain. Obsidian was the primary material used in the blade and micro-blade technology. Dadong was discovered in 2007 and excavated in 2010 and 2017. Since 2020, a collaborative effort between Liaoning University and the Jilin Archaeology Institute has continued excavations. Ying Cui says: “The excavation at this site was a great opportunity for me to receive training in lithic analysis, expand my knowledge of Paleolithic excavations in northern China, and build connections with local archaeologists.”

Ying Cui (center) and local students organize artifacts at the Dadong (Helong) site, an Upper Paleolithic site near the Tumen River, the border river between China and North Korea.



Central Asia

Graduate students **Dan Garner** and **Kara Larson** and curator **Alicia Ventresca-Miller** visited Kazakhstan this past May to start new collaborations with archaeologists in Aktobe.

Graduate student **Kara Larson** spent her summer expanding her archaeological scope while working on her dissertation research. She joined the Czech-Uzbekistani Archaeological Mission to Kulal Tepa, an early urban site in southern Uzbekistan, as the chief zooarchaeologist and isotopic specialist for the project. Following her stay in Uzbekistan, she met up with her advisor, Dr. Alicia Ventresca-Miller, and fellow graduate student Dan Garner in Kazakhstan to explore future excavation sites and collaborative research projects. Kara's dissertation excavations at Tell el-Hesi in Israel could not take place this summer due to regional conflict, but at the Cobb Institute of Archaeology at Mississippi State University she analyzed site material from Tell el-Hesi and Lahav, her two dissertation sites, and collected archaeobotanical remains for isotopic analyses. Kara finished her summer with another trip to Kazakhstan to assist Dr. Ashleigh Haruda, a zooarchaeologist from Oxford University, on faunal identification from the site of Dzhankent. In addition, Kara published an article with her co-authors on experimental archaeological work to understand the crafting process of the Early Bronze Age decorated bone tubes from Tell el-Hesi.



Above: Kara Larson analyzes the faunal remains from Kulal Tepa in Uzbekistan.

Left: Dan Garner, Kara Larson, and Dr. Alicia Ventresca-Miller in the Aktobe regional museum in Kazakhstan, May 2024.

Europe

Albania

Graduate student **Julian Schultz** is working on his dissertation research in Albania this summer and fall. He is analyzing faunal assemblages from sites across Albania and Western Kosova to understand how Neolithic peoples were managing their herds of livestock. With Albanian archaeologist Frenk Peza, he excavated a sheep skeleton that he buried in the winter of 2022-23; this skeleton will be part of the first permanent faunal comparative collection in Albania or Kosova.

Greece

Graduate student **Drosos Kardulias**' summer field work consisted of extensive and intensive survey on Kalymnos. That work produced new understandings of the island's martial landscape during the grueling transition into the Middle Ages. Geomorphological mapping and abandoned springhouses elucidate the transition from fertile antiquity to the dry cliffs of today. New discoveries ranged from additional features such as the towers and gates of the known medieval kastro, to entire sites, including two new pre-medieval hamlets, kilns, houses, watchposts, and more. The Medieval Roman Archaeological Survey of Kalymnos continues to grow its team and its scope, with the potential for full recording of all medieval sites in the coming season.

Italy

Graduate student **Arantxa Bertholet del Barrio** worked at Inconronata in Basilicata, Italy looking at the wall-like structural feature that runs through the middle of the site. She says: "We also uncovered an unknown structural feature as well as a ritual or funerary-like feature near it with unexpected metal finds that are usually not found at the site, both of which need more analysis to see what it can tell us about the purpose of the site and relationships between indigenous Italians and ancient Greek populations at the site. This year we mainly did magnetometer survey using a drone on potential sites in both Italy and Albania. We also spent time in the Burrel Museum washing and recataloging the old collections from their basement, which was both useful for us to know more about the artifacts of the region and for the local museum to have an official digitized catalog with a better understanding of what was in their collection.

Curator **Giulia Saltini Semerari** and her crew worked for one week in the Canale Reale river valley (southern Italy) and two in the Mat River valley (Albania). Their goal was to do some preliminary work for the CLAMS



Above: Julian Schultz with a sheep skull in Albania. The skeleton will become part of the first faunal comparative collection in the region.

Below: Drosos Kardulias and the MRASK team disembark below the site of Agios Konstantinos, soon to face the same treacherous ascent that invaders would have faced over 1000 years ago.



News from the Field 2024



This photo was taken on the crew's last day of work at the Museum of Burrell in Albania, where they washed, cataloged, and repacked materials that had been in the basement for fifty years. Left to right: Arantxa Bertholet del Barrio, Megan Savoy, Stanford graduate student Gabriella Armstrong (a U-M alum), Dr. Giulia Saltini Semerari, and Suzana Kurti, an employee of the Museum.

project (Connectivity across the Local, Adriatic, and Mediterranean Spheres) to lay the groundwork for grant applications and fieldwork next season. During the first week one team worked in the storage of the Archaeological Museum of Oria to start setting up a pottery database and give a first look to the materials from the Bronze and Early Iron Ages. In Albania the same team worked in the Museum of Burrell to wash, re-pack, and catalog old finds from the local tumuli excavations that had been left in the basement of the Museum for the last fifty years. Their second team, led by Tamas Polanyi, conducted experimental drone-based geophysical prospections in both regions. The project is a collaboration between the University of Michigan and the universities of Durrës (Albania); Salento, Bari (Italy); Pompeu Fabra (Barcelona, Spain); and VU Amsterdam (Netherlands). This summer they had the invaluable help of Michigan graduate students **Megan Savoy** and **Arantxa Bertholet del Barrio**, and Stanford graduate student (former undergrad at Michigan) Gabriella Armstrong. Savoy's dissertation research project will be on the population from a Bronze-Iron Age site in

Puglia, southeastern Italy in collaboration with University of Salento, Lecce. This summer Savoy spent time studying the landscapes of southeast Italy and north-central Albania while doing surveys with a drone and a magnetometer. Through this experience, Savoy became acquainted with the regional styles and practices, which is very helpful in understanding connectivity between these two regions.

Kosova

Graduate student **Erina Baci** spent two months in Prishtina, the capital of Kosova, where she conducted artifact analyses with the help of five student assistants from the University of Prishtina. During this process, and with the help of her Kosovar collaborators, she selected several sheep/goat and human teeth to ship to the United States for Sr, C and O isotopic analyses. Erina also conducted a few days of fieldwork, where she used a drone to capture high-resolution images of her dissertation sites, which will be used to create 3D models. Additionally, Erina hosted a GIS workshop at the University of Prishtina, where she taught students how to use ArcGIS Online to make simple

News from the Field 2024



Megan Savoy (left) and Arantxa Bertholet del Barrio worked with Dr. Giulia Saltini Semerari doing surveys with a drone to identify potential sites in southern Italy and Albania.



Erina Baci all geared up to select teeth for isotopic analyses in Prishtina, Kosova.

maps for papers and presentations. Having returned to the US for the Fall semester, Erina will be spending her time in the lab, preparing and processing tooth enamel samples for isotopic analyses!

Graduate student **Zhaneta Gjyshja** worked with her project collaborator in Kosova, Dr. Premtim Alaj, to translate from Albanian into English a book he co-authored, in order to make it accessible for non-Albanian speakers. The monograph is entitled *Varreza Tumulare e Dollcit (The Tumulus Cemetery of Dollc, Kosova)*. It describes the excavations of a Late Iron Age cemetery; it is a detailed report, including drawings of all the finds and their significance within the region.

Right: A vessel found in a burial mound in a Late Iron Age cemetery, published in a monograph on the excavation, translated from Albanian into English by Zhaneta Gjyshja.





Above: Three excavated burial mounds found in a Late Iron Age cemetery, as described in *The Tumulus Cemetery of Dollc, Kosova*, an Albanian monograph translated into English by Zhaneta Gjyshja.

Right: Curator John O'Shea clears a Bronze Age house floor at Rabe Anka Siget, northern Serbia.



Serbia

During the first half of the summer curator **John O'Shea** continued excavations at the Bronze Age tell site of Rabe Anka Siget in northern Serbia. The project, which he co-directs with Museum alum **Amy Nicodemus** (associate professor at University of Wisconsin–La Crosse), also serves as a venue for training archaeology students in the intricacies of tell excavation. For the first time, this season saw students from both the University of Wisconsin and the University of Belgrade participating in the field school, as part of U-M's broader collaboration with Serbian colleagues.

News about UMMAA Collections

We work with students...

History student Frank Zijie Wang helps to organize and update catalog records for the Museum's collections from the Chinese Exhibition at the 1884-1885 World's Industrial and Cotton Centennial Exposition, which was held in New Orleans, Louisiana.



by Jim Moss

The UMMAA collections managers do more than just “manage the collections.” Another way to say it is that managing the collections is many jobs within one job. Here is an illustrated guide to the many aspects of a collections manager’s responsibilities:

- We work with students
- We give tours to a wide range of interested students, scholars, artists, culture bearers, and community groups
- We conduct collections research
- We work with Indigenous artists and other museums and galleries on campus to present collections to new audiences
- We work to reconnect collections to indigenous and source communities around the world
- And we teach about decolonization to students and faculty
- And finally, we have been known to put out a few fires now and then

How would *you* like to engage with the collections? To find out more, contact **Andrea Blaser** and **Jim Moss** at ummaa-collection-mgr@umich.edu.



One of a pair of porcelain cuspidors (spittoons). Made in Jingdezhen, China, known as the “Porcelain Capital.” Part of the Chinese Collection from the 1884 World's Industrial and Cotton Centennial Exposition in New Orleans. UMMAA# 11106.

News about UMMAA Collections



We give tours to a wide range of interested students, scholars, artists, culture bearers, and community groups:...

Collections manager Andrea Blaser presents a *salakot* (Philippine hat) made from a flatback turtle shell to a group of scholars at an event for the Society for the Study of Amphibians and Reptiles hosted by the University of Michigan Museum of Zoology.



We conduct collections research...

Recent U-M graduate Matt Michalski scans former UMMAA curator William Farrand's notes, which are curated at the Bentley Historical Library, in order to cross reference with the geological and archaeological samples from Old World Paleolithic sites that UMMAA curates.

News about UMMAA Collections

We work with Indigenous artists and other museums and galleries on campus to present collections to new audiences...

At the University of Michigan Art Museum, Filipino-American visual and martial artist Francis Estrada demonstrates Pekiti-Tirsia Kali martial arts with Philippine weapons in UMMAA's collection to students in curator Bryan Miller's class Arts and Cultures of Star Wars.



We work to reconnect collections to Indigenous and source communities around the world...

Filipino public historian Ambeth Ocampo and art historian Nina Capistrano-Baker examine gold objects from the 1922-1925 University of Michigan Philippine Expedition. They are conducting research for an exhibition at the Ayala Museum in Manila that is scheduled to open in May 2025.



News about UMMAA Collections



We teach about decolonization to students and faculty...

U-M archaeology doctoral student Jhon Cruz Quiñones talks to a few of the 700 Introduction to Biology students who tour the Research Museums Center every semester, about the importance of community engagement and how curating cultural belongings differs from the other research museums.



And finally, we have been known to put out a few fires now and then...

Collections manager Jim Moss undergoes fire-extinguisher training under the guidance of EHS fire inspector Duane Lee.

How would you like to engage with the collections? To find out more, contact Andrea Blaser and Jim Moss at ummaa-collection-mgr@umich.edu.

News about UMMAA Collections



UMMAA welcomes osteologist **Irene Hochgraf Cameron** to the collections team for a two-year position, where she will focus on researching and documenting the human remains curated by the Museum. With two years of experience at the University of Michigan's Anthropology Department, Irene brings a unique perspective to this role. Her interdisciplinary approach leverages her knowledge of osteology, paleopathology, and juvenile bioarchaeology to reveal the histories of anonymized individuals. By integrating osteological methods with broader contextual research, including taphonomy, handwriting analysis, and archival searches, she has made significant strides in tracing the origins of non-NAGPRA individuals. This process helps shed light on their histories and also informs ethical decisions regarding their treatment within UMMAA's care.

Before joining U-M, Irene earned her master's of science in bioarchaeology and paleopathology from the University of Durham, UK, with a focus on sexual dimorphism and regional variation. Her previous research centered on

16th- to 18th-century burials from England and present-day Romania. Through collaborations with institutions such as the Museum für Vor- und Frühgeschichte in Berlin, the American Museum of Natural History, and the Hungarian National Museum, Irene was able to trace the origins of a significant portion of the Anthropology Department's collections to sites in Fejér County, Hungary. This discovery has opened the door for meaningful dialogue with the local community.

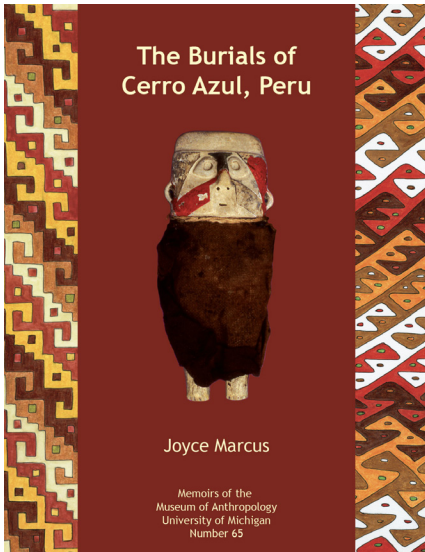
Currently, Irene's research delves into medical and anatomical supply companies, and on skeletons of donated individuals who served as cadavers for medical schools. Her work not only provides clarity about the past lives of these individuals but also offers critical insights into ethical decision-making regarding their future care.

At UMMAA, Irene's expertise will be instrumental in deepening our understanding of human remains and advancing the Museum's commitment to ethical and respectful stewardship.

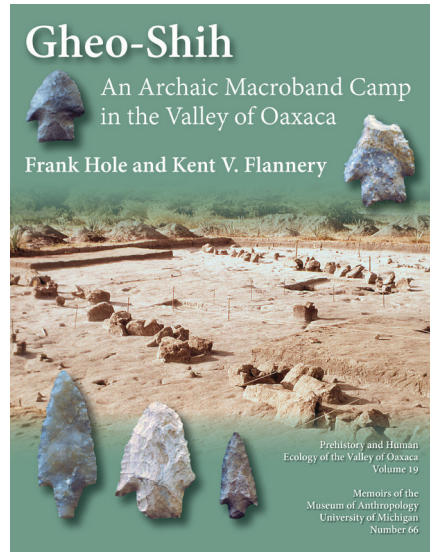
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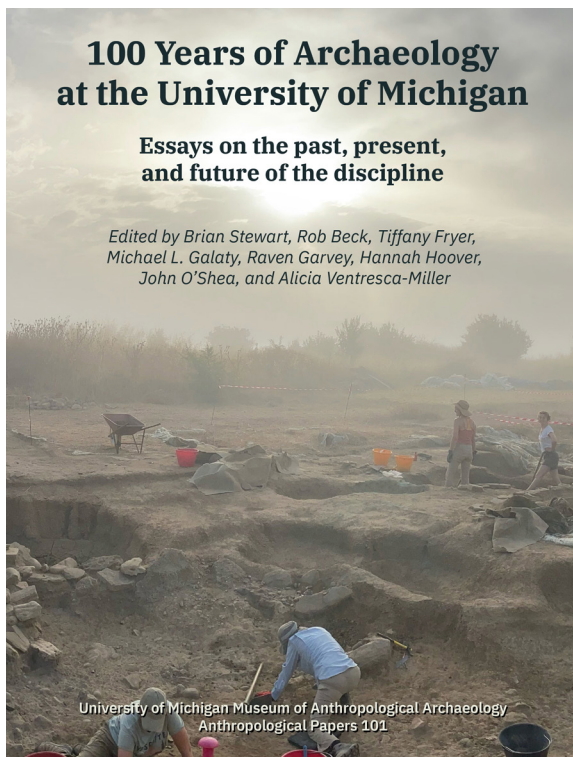


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University of Michigan archaeology graduate student Jhon Cruz (left) and undergraduate student Patrick Phang during excavations of Megalith 1 at Tuco Ragra, in the Santa Valley of west-central Peru.

