DIGGING DEEP

Anthropologists unearth picture of early inhabitants of Ohio

ALSO FEATURED

HOW FIT ARE OUR KIDS?

WHAT CITIZENS WANT FROM GOVERNMENT?

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OHIO UNIVERSITY / .01
The POWER of economic development

Over the last decade, Ohio University has established a strong innovation ecosystem in Southeastern Ohio that has helped university inventors and regional entrepreneurs launch startup companies, take new technologies to market, and create jobs. This is especially important in a region that must find a new model of economic development in the wake of the decline of the coal industry, which had been a major job producer for Appalachia for many years. Not only have entities across Ohio University joined forces to provide technology commercialization and entrepreneurial support, but we also have forged important relationships with local, state, and private partners to enhance our services and funding opportunities and magnify our impact.

We are pleased to announce that the innovation ecosystem will strengthen and expand its reach with the support of a new $2 million grant from the Appalachian Regional Commission’s Partnerships for Opportunities and Workforce and Economic Revitalization (POWER) program. Ohio University will create a 28-county regional innovation network in Ohio, West Virginia, and Kentucky that will develop new jobs and businesses and raise funding to invest in these companies.

The network, the Leveraging Innovation Gateways and Hubs Toward Sustainability (LIGHTS) program, will offer training, resources, and facilities that can help our regional workforce develop new skills, hone business ideas, and launch startup companies in a variety of industries, including advanced manufacturing. Our internationally recognized small business incubator, the Innovation Center, and partners from across the tristate region will serve as hubs and gateways to this programming.

We are honored that the Appalachian Regional Commission has recognized our ability and further potential to empower our local communities and citizens to create a strong and healthy economic future. Ohio University looks forward to working with our regional partners over the next few years to realize the vision of the POWER program.
FILMMAKER DEBUTS THE CONSTITUTION

The Constitution, the new feature directed and co-written by Ohio University Eminent Scholar in Film Rajko Grlic, is the winner of the 2016 Montreal World Film Festival’s prestigious Grand Prix of the Americas. The film follows four apartment dwellers whose “lives entangle in ways that profoundly challenge deep-held beliefs and prejudices surrounding material status, sexual orientation, nationality, and religion,” according to the film’s official website. The Constitution made its U.S. premiere at the Athena Cinema in November. PHOTO: SASA HUZIJA
Distinguished Professors

TWO SCHOLARS HONORED WITH 2016 AWARDS

Faculty members Judith Yaross Lee and Alexander Govorov have been honored with the 2016 Ohio University Distinguished Professor award. The prestigious award, established in 1959, recognizes scholarly accomplishment, professional reputation, and contributions to the university.

Govorov was chosen for his outstanding research on the optical and thermal properties of nanocrystals and nanomaterials. He has been lauded for his work on how nanocrystals interact with light and heat energies, and his ideas about physics at the nanometer scale have been implemented in many experimental laboratories around the world. Govorov has published more than 200 scientific articles, many of which are highly cited in his field, and has been invited to give 80 talks on his scholarship around the globe.

Yaross Lee, a two-time recipient of the Outstanding Graduate Faculty Teacher Award, is widely respected for her research on the meanings attributed to American experiences at the intersection of media, political, intellectual, and social history. She is internationally recognized as one of the world’s leading authorities on American humor, most notably Mark Twain. Yaross Lee has written and published 60 articles and essays and four books about humor, including Twain’s Brand: Humor in Contemporary American Culture and Defining New Yorker Humor.

Both recipients will receive a lifetime Distinguished Professor designation, one semester of academic leave, and the privilege of naming one undergraduate student annually to receive a Distinguished Professor scholarship.

LEARN MORE

More information about the program and its previous recipients can be found at www.ohio.edu/distinguishedprofessor
The Russ College of Engineering and Technology's Avionics Engineering Center has signed a five-year, $7.5 million research agreement with the Federal Aviation Administration (FAA) Navigation Programs to provide technical support to the analysis, testing, and development of numerous navigation systems in the National Airspace System.

Continuing a partnership that spans decades, the FAA will tap center faculty, staff, and graduate students to investigate ground- and satellite-based navigation and landing systems, the transition to the Next Generation Air Transportation System (NextGen), and approach lighting systems, as well as other services, according to Center Director Mike DiBenedetto.

“The research we’ll perform will contribute to realizing the NextGen National Airspace System, providing improved safety, security, and efficiency,” DiBenedetto says. “This means safer skies and more economical fares for travelers, as well as lower impact of air travel on our environment because NextGen uses more efficient routes and flight procedures.”

As part of the agreement, FAA Navigation Programs will issue specific research tasks to center researchers over time. Two tasks—supporting the FAA’s Visual Guidance Lighting Systems and the NextGen Distance Measuring Equipment programs—have already been determined, explains Sam Mallipudi, Instrument Landing System Program Manager for the FAA.

“The Avionics Engineering Center has been recognized by the FAA and industry as a unique research organization specializing in the research, development, evaluation, implementation, and sustainment of electronic navigation, surveillance, and communication systems,” Mallipudi says. “The center’s laboratories and test facilities are representative of actual airport operations and environments, allowing detailed tests of existing and prototype equipment to be conducted under real-world conditions using the center’s specially equipped flight test aircraft or ground-based data collection systems.”

DiBenedetto notes the benefit to Ohio University: The research agreement provides significant research experience to faculty, staff, and especially students.

“I started my career at the Avionics Engineering Center supporting FAA Navigation Programs 32 years ago,” DiBenedetto says. “This long-standing collaborative partnership is part of a legacy passed to me by center founder Richard H. McFarland. My mission as director has been to sustain the ‘McFarland legacy’ of excellence in aviation, and this new agreement provides me the opportunity to pass the legacy forward to the next generation of center researchers.”

BY PETE SHOONER
Ohio University faculty in the news for their research and scholarly expertise on topical issues.

David Ridpath
Associate Professor and Kahandas Nandola Professor of Sports Administration

With 1,203 media placements, Ridpath was the top quoted Ohio University expert in the news for 2015. The College of Business professor has been interviewed by outlets such as ESPN, Sports Illustrated, and The New York Times for his expertise on intercollegiate athletics administration and rules compliance as well as student athlete academic achievement.

Michelle Ferrier
Associate Professor of Journalism

The Scripps College of Communication faculty member has been interviewed by the press about a web service she co-created, TrollBusters, designed to help female journalists manage online harassment. She also is an expert on communities—dubbed “media deserts”—that lack local journalism coverage due to changes in the media industry.

Katherine Jellison
Professor and Chair of History

Jellison of the College of Arts and Sciences has been tapped by media outlets such as The Washington Post and USA Today for her expertise on the First Lady’s role in policy and influence on the public, as well as modern wedding customs. She is the author of books that explore the impact of technology on female farmers and the rise of the consumer wedding.
Russ College mechanical engineering professor is digging deep into slurries—concentrated suspensions of particles found in natural settings, such as landslides, mudslides, and underwater avalanches, as well as produced by industrial operations—to get to the bottom of natural disasters.

The National Science Foundation (NSF) awarded Assistant Professor Sarah Hormozi its five-year, $500,000 Faculty Early Career Development (CAREER) grant so she and her team can continue to develop experimental and modeling methods to capture the fluid dynamical behavior of these slurries. It is the NSF’s most distinguished award, which is bestowed on scientists and engineers deemed most likely to become future academic leaders.

“The experiments will cover a wide range of flow regimes, and the results will fill an important knowledge gap in understanding the flow characteristics of slurries,” Hormozi says. “This understanding is essential to make accurate predictions of how natural disasters start and spread and to avoid or reduce their impacts.”

Hormozi, a faculty member since 2014, says the project will benefit other researchers, who are developing new models of slurries, and industry practitioners, who develop equipment to process slurries.

She’ll also incorporate elements of the research into her classes, as well as into events that inspire young women to pursue careers in the STEM fields.

“Researchers will participate in TechSavvy, a career conference for girls and the adults who support them, and a residential technology camp for high school girls that provides opportunities to explore careers in engineering and technology,” she says.

Hormozi joins other NSF CAREER grant recipients at the Russ College, including Avinash Kodi and Wojciech Jadwisienczak, associate professors of electrical engineering and computer science, who both won the award in 2011 to continue their research in electronic and optoelectronic nanotechnologies.
any children can understand the sentence, “The blonde-haired woman hugged the old man this morning.” But a sentence that is more complex in structure—“The old man that the blonde-haired woman hugged was sitting”—can create confusion for some kids.

Those struggles with language affect student reading comprehension, leading to poor academic performance, says Jim Montgomery, a professor of communication sciences and disorders at Ohio University. Kids not only grapple with failing grades and low high school graduation rates, he adds, but tend to experience social problems as well.

“The diagnosis of a specific language impairment and especially comprehension problems can get harder as kids reach 12 and older because we have very few good instruments to do it well,” Montgomery explains. When a diagnosis is made, he adds, “the unfortunate truth is that there are few best practices to remediate these kids’ comprehension problems—the field isn’t there yet.”

Montgomery and colleagues at University of Texas at Dallas and Utah State University are hoping to change that. With a $2.4 million grant from the National Institute on Deafness and Other Communication Disorders, the researchers studied language comprehension in 383 children with and without impairments to understand what cognitive factors contribute to the problem.

After five years of data collection and analysis, the team found that kids without impairments use memory and attention skills to comprehend the meaning of sentences. However, in youth with comprehension impairments, “poor attention was a bottleneck to memory,” Montgomery reports.

The finding, which challenges some of the field’s assumptions about the problem, could help the team and other researchers design therapeutic interventions for these children. Whether treatments should focus on building kids’ attention skills—instead of or as well as memory skills and comprehension skills—requires further research, Montgomery notes.

He stresses that even though these children have attention difficulties that contribute to their language
comprehension problems, these issues are not the same as Attention Deficit Hyperactivity Disorder (ADHD), a separate condition. Montgomery notes that fewer than 25 percent of children with specific language impairments are also diagnosed with ADHD.

As for the future goals of the team, the researchers plan to expand their project to include adolescents between the ages of 12 and 15.

“That’s important because we need to know what the developmental trajectory of these kids is and whether treatment may be different for different ages,” Montgomery says.

What researchers do know is that specific language impairment can have a lasting impact. It can follow children into adulthood, where it can hamper an individual’s efforts to attain or maintain employment, he notes. “There are a lot of cascading negative effects,” Montgomery says, including inadequate academic achievement, poor vocational attainment, and lower socio-economic achievement.

BY ANDREA GIBSON

WHAT DOES SOCIAL MEDIA USE REVEAL ABOUT STUDENT DRINKING?

A college student’s penchant for posting about drinking to social media sites could be a stronger forecaster of alcohol problems than drinking itself, a new study finds.

Charee Thompson, an assistant professor of communication studies at Ohio University, and Lynsey Romo of North Carolina State University surveyed 364 college students about their drinking habits and outcomes, as well as their social media usage. The researchers examined how three motivations—peer pressure, a need for entertainment, and having an “alcohol identity”—impacted student behavior.

The data revealed that posting content about drinking to social networking sites such as Facebook, Twitter, or Instagram was related to student struggles with alcohol. Examples of alcohol problems include getting into fights, skipping class assignments, or going to work drunk.

Thompson notes that the researchers were surprised to learn that posting alcohol-related content to social media was a better predictor of these issues than the actual number of drinks the students reported consuming.

“(The study findings) also suggest that there is something very influential about having an alcohol identity on both drinking and posting about drinking on social media. When students see themselves as drinkers, they may drink more and present themselves online as a drinker in order to align their beliefs about who they are with their behaviors and their image,” Thompson says.

How students develop this “alcohol identity” wasn’t the focus of the study, but Thompson notes that further research could explore potential factors such as family dynamics, socialization in college, and individual risk factors. She adds that “alcohol identities” existed before the era of social media, but that these networks offer students a venue to express that identity and organize drinking events.

Thompson and Romo published the findings in the *Journal of Health Communication: International Perspectives*. In addition to contributing to the academic literature on the subject, Thompson hopes that the study could be useful to university administrators who manage first-year student experiences. Universities could talk to students more about cultivating a professional social media presence. And, as a complement to other alcohol-related programs, they could discuss “smart posting” about alcohol, she adds.

The student drinking research fits into Thompson’s broader interest in examining how young people take care of themselves—and how they put their health at risk, the scholar says. Her previous work has explored topics such as weight management issues in families, mental health issues in couples, and how young adults with cancer communicate about their needs and experiences. Thompson now is studying the consequences for people who are perceived to fake and exaggerate health problems.

BY ANDREA GIBSON

Charee Thompson
Assistant Professor of Communications Studies

PHOTO: BEN SIEGEL

Eight years later, Brandon Kendhammer arrived in Nigeria as a Fulbright Research Scholar to conduct his dissertation research. He had a solid research question: Are democracy and Islam compatible? Enough years had passed since the implementation of Sharia law that Kendhammer would, he hoped, be able to collect enough information to answer his question.

Sharia can be described as Islamic law or, less strictly, “God’s way.” And in addition to being Africa’s most populous country, Nigeria is a democracy with a population that is roughly 50 percent Muslim and 50 percent Christian.

Kendhammer, now an associate professor of political science and director of the International Development Studies program at Ohio University, wanted to learn how the region’s Muslims viewed the implementation of Sharia law in a democracy. And why did they want it in the first place? Did they also value democracy? He set out to find answers by analyzing newspaper content, pamphlets—discourse among the “elite” members of society—as well as by analyzing social media and conducting interviews with everyday Muslim citizens.

“There’s a thought that Muslims are especially focused on their religion—that their religious values or beliefs trump everything. It turns out that Muslims think about politics the way people all around the world think about politics—you get pieces from the media, you hear what your neighbors think, you think about it yourself,” says Kendhammer.
is interviews especially showed that Muslims didn’t think of Sharia in terms of public floggings or thieves’ hands being cut off. “They said, ‘We like Sharia’ … but really what they liked about Sharia is that it would make their government listen to them, that it would make government leaders follow the same moral rules that they followed,” Kendhammer says. “They thought it would lead to more social services.”

In short, they believed Islamic law and democracy were complementary. So how did it work out? “It didn’t work out particularly well,” Kendhammer reports. For example, Sharia calls for wealthy Muslims to give alms to the poor. The states set up agencies to collect and distribute this wealth. “Not surprisingly, a lot of those agencies were accused of corruption.”

Another consequence of the Sharia controversy was new religious violence across northern Nigeria, the scholar notes, often egged on by political leaders who stood to benefit from conflict. Yet Kendhammer says that “the vast majority of the time, Muslims and Christians live peacefully side by side,” and that fears that Sharia would lead to widespread human rights abuses proved unfounded. Additionally, Nigeria’s 2015 democratic elections were both open and fair.

The story is told in Kendhammer’s 2016 book, *Muslims Talking Politics: Framing Islam, Democracy, and Law in Northern Nigeria*, published by the University of Chicago Press. The titled is derived from an oft-cited sociology book titled *Talking Politics* by William Gamson, because Kendhammer used the same research format as Gamson. Instead of interviewing Nigerian Muslims individually, he gathered them in groups and had them talk with one another as a way to gain insight on their process of thinking through political issues.

“I had come back with this happy, optimistic story about how things were looking up, about how democracy and Islam were working together,” he says.

**ENTER BOKO HARAM**

But before Kendhammer’s book was published, a radical Muslim terror group called Boko Haram grabbed international headlines in 2014 when its members kidnapped some 275 Nigerian schoolgirls.

“This is a huge humanitarian crisis. The victims of (Boko Haram) are mostly Muslims in Northern Nigeria. They are facing a complete lack of access to education, to health care because they are in IDP camps.”

BRANDON KENDHAMMER
"I had not set out to study terrorist groups," Kendhammer now says. But the rise of Boko Haram has made him one of Ohio University's most popular experts, called upon by both media outlets such as the BBC and The Washington Post as well as by government agencies such as the U.S. State Department and the U.S. Agency for International Development. Media outlets found Kendhammer through web searches, his Twitter account, and also by word-of-mouth recommendations from his colleagues.

Boko Haram was dissatisfied with what had happened with the implementation of Sharia law. "But their disillusionment took a different turn than the disillusionment of the people I interviewed for my book. They became more radical," Kendhammer says.

As he keeps up on Nigerian politics through social media, news outlets, and his contacts in the region, it's clear to Kendhammer that everyday Nigerian Muslims still believe Islam and civil society are compatible, and they are horrified by Boko Haram.

"This is a huge humanitarian crisis. The victims of (Boko Haram) are mostly Muslims in Northern Nigeria," Kendhammer says. "They are facing a complete lack of access to education, to health care because they are in IDP (internally displaced person) camps … a lot of the same ordinary people I'm talking about in this book."

Kendhammer's research has thus shifted to understanding Boko Haram, and what sort of policies and institutions countries like the United States can support in order to repair some of the damage that has been done. In 2018, Ohio University Press plans to publish Boko Haram: A Short History, co-authored by Kendhammer.

His interviews showed that it is incorrect to assume that Muslims are especially prone to radicalization. In the case of Boko Haram, it was the Nigerian government's execution of their leader that played a role in their turn toward violence. Attempts by external actors to target Boko Haram recruitment took the wrong tack, Kendhammer argues, rather than helping the victims of Boko Haram directly.

"(Kendhammer’s) extremely well placed to try to help explain this incredibly complicated and messy and terrible situation with Boko Haram … he can really put it in context," says Leonardo Villalón, professor of political science and African studies at the University of Florida. "(He) presents a nuanced and careful look at Islam at a time when we have so much hysteria and sweeping generalizations."

Villalón, who first met Kendhammer at a conference and has followed his career since, praises Kendhammer's research method, calling it ethnographic. "It's a kind of research that's slow and painstaking and requires a lot of dedication, and yet it's crucial if you're going to try to really understand how people are conceptualizing really key issues and really important things," Villalón says. "Not only is he doing it, he's doing it well."

While he believes that democracy is always at risk everywhere, Kendhammer holds out hope for the future of democracy in Nigeria.

"The longer a country is democratic, the more qualified people become skilled at using the institutions. It took the United States an awful long time to solve the problems that the United States has solved," he says. "I think Nigerians, by and large, are trying to figure out a way to get what they need to live happy lives."
Tom Bartel, associate professor of ceramics, received a grant from Ohio University’s Baker Fund to support his development of new creative work.  

PHOTO: BEN SIEGEL
Artist Tom Bartel discusses the process and inspiration behind his figurative ceramic pieces

In Tom Bartel’s art studio, a series of 3- to 4-foot-high human sculptures emerge from the clay. The figures often are a chimera of bald, aged-looking heads—the skins cracked and discolored—atop bodies with youthful proportions. The surfaces bear vivid colors and patterns such as stripes, heart symbols, and polka dots that call to mind a child's pajamas or costumes. The ceramic figures may appear to be simultaneously naked and cloaked; Bartel explains that he uses various techniques to create a dynamic surface that “blurs the line between skin and clothing.” These figures can look weathered and fatigued, pensive and expectant, whimsical and vulnerable, comic and terrifying.
Bartel, an associate professor of ceramics at Ohio University, created the pieces for a show at the Northern Clay Center in Minneapolis, Minnesota, where he was a 2014 McKnight Residency recipient. An award from the university’s Baker Fund supported creation of his new work, “Memento,” which explores the idea of the figure as memento. The show, “Six McKnight Artists,” held during July and August 2016, featured six clay artists who exhibited their contemporary work with vessels, sculpture, and—in the case of Bartel—figures.

“The figure has been a potent symbol and charged subject since antiquity, and continues to be an appropriate vehicle to ask some of life’s most challenging questions,” Bartel writes in his artist’s statement.

Articles and essays about Bartel’s work note that his figures can be both “unnerving” but also “humorous,” and the artist himself acknowledges that viewers often interpret his work through a wide range of emotions.

The figures reveal Bartel’s ability to use humor and pop culture symbols to help navigate difficult subjects. Raised in Cleveland in the 1970s and 1980s, Bartel says that living in the Rust Belt city gave him both a thick skin and a mandate to not take himself too seriously. He earned a bachelor’s degree in ceramics at Kent State University and an MFA at Indiana University Bloomington a few years later. He’s been a faculty member in Ohio University’s School of Art + Design since 2009.

Early in his career as an artist, Bartel researched the ritualistic objects of sub-Saharan Africa and Mesoamerican art that served as powerful cultural symbols of life and death.

“So much of my work is grounded in some of the things that came up in the study of those cultures—fertility, mortality, and rites of passage as it relates to the human condition,” he says.

He’s also interested in modern anxieties about childhood and aging.

“At this point in my career I have a healthy obsession with the cycle of life,” he says, adding that he’s curious about how his work will change after his recent experience of becoming a parent.

In his home studio outside of Athens, Ohio, Bartel explains how he creates his pieces. The artist mixes an iron-rich clay that gives his figures a natural ruddiness, which suggests flesh and blood beneath the various glazes and surface techniques he uses.
“The firing process for me is a very important facet of the creative process,” he says. Small test tiles of clay and glaze on a table offer a preview of how certain materials will emerge from the heat of the kiln.

Bartel's studio is populated with a series of ceramic heads, torsos, and finished bodies. He has been using molds and the help of an undergraduate student assistant to more efficiently create multiple parts and develop sets of figures.

Bartel is on a faculty fellowship during the 2016-17 year to explore new materials and ideas and give lectures; during this time, “Memento” has been exhibited at several select venues in the Midwest.

Jill Foote-Hutton, director of learning and engagement for the Northern Clay Center, notes that Bartel's work “has expanded the definition” of ceramic work by using glazes in novel ways, capturing new surface effects, and “unashamedly” employing mixed media with clay.
ALL IN THE DETAILS  >> Blue Figure Afflicted with Hearts
(After Kouros), ceramic/wood, 46”x18”x18”, 2016.
PHOTO: BEN SIEGEL

ON EXHIBIT  >> Nipple Boy (Father), ceramic/mixed,
38”x18”x18”, 2016.
IMAGE: PETER LEE
“There has long been an audience for clay traditions, but Tom’s work challenged people’s preconceived notions when he came on the scene,” she says.

Bartel notes that not all audiences give his work “an open-armed embrace,” given that his pieces can be off-putting.

“I think I’m straddling fitting in and being an outsider still,” Bartel says about his place in the field. “That’s not an intention of mine, but it’s an outcome of the work I’ve produced over my career and how critics view my work.”

Bartel adds that as his own career has evolved, the ceramics field itself has taken on a new status over the years.

“The ceramics field as a whole is starting to receive more acclaim and is accepted more within the larger contemporary art world,” he explains. “This was not the case when I began my career, but this shift will continue to impact the ceramics field as it moves forward.”

“THE FIGURE HAS BEEN A POTENT SYMBOL AND CHARGED SUBJECT SINCE ANTIQUITY, AND CONTINUES TO BE AN APPROPRIATE VEHICLE TO ASK SOME OF LIFE’S MOST CHALLENGING QUESTIONS.”

TOM BARTEL

“Before and After” (Left and below)

Bartel uses various glazes and techniques that create a surface on the figures that “blurs the line between skin and clothing,” he says.

PHOTOS: BEN SIEGEL
How Ohio University anthropologists unearthed a new picture of the earliest Ohio inhabitants
Students in the Ohio Archaeological Field School sift through the earth at Tinker’s Cave in southeastern Ohio in June 2016, searching for artifacts from early communities.
or 30 years, Ohio University anthropologists have been digging into the soil around southeastern Ohio in search of signs of long-lost civilizations. Armed with shovels, buckets, sifting screens, maps, headlamps, and insect repellent, teams of students in the Ohio Archaeological Field School have ventured into the woods and fields each summer to unearth a picture of the people who lived in this region between 4000 B.C. and 1000 A.D. “These people that we’re studying here—the students are digging up the remains of their houses, their trash—they left no written record. As far as the history books are concerned, it’s like they never existed,” said Paul Patton, an assistant professor of anthropology and current director of the field school. “Through the field school at Ohio University, we’ve been able to give a voice to a people who otherwise would have been forgotten.”

When Ohio University Professor Elliot Abrams launched the field school in 1986, other anthropologists were puzzled about why he would seek evidence of early settlements in southeastern Ohio, arguing that “there’s nobody there,” he recently told an audience at Alden Library gathered in celebration of the program’s 30th anniversary.

But Abrams—as well as hundreds of Ohio University student anthropologists—eventually proved them wrong. Many archaeologists focus on studying burial sites, and in southeastern Ohio, the signature burial mounds still preserved today in locations such as The Plains in northern Athens County are the most visible hallmarks of the Archaic and Woodland communities that dominated the region thousands of years ago. Although the field school investigated one burial mound on a site slated for development in the late 1980s, it has focused its efforts on digging sites on public and private lands that could yield more about the broader culture and economy of these early peoples. “If you want to do something important, you have to ask big questions,” Abrams said, noting that he realized the quest could take a whole career to pursue.

During summers, the field school would spend several weeks at a site, either invited by a private landowner or by permission of a public entity such as the Wayne National Forest. Over the years, the archaeological team found
evidence of cooking pits, pottery, tools, and seeds, as well as the remains of structural posts from houses. These digs revealed evidence of the early inhabitants’ evolution from small, mobile tribes of hunter-gatherers to larger agricultural communities that established more permanent settlements.

The field school’s work on private property that had never been plowed yielded the best example of one of these domiciles, which dated to about 100 A.D., Abrams recalled. When the archaeologists started to dig, they found “the actual floor that people 2,000 years ago stood on,” he said. The structure of mud and sticks had 12-inch-thick walls and was reconstructed three times on the same site every five to eight years to keep the structure sound, Abrams noted.

**DIGGING AND DISCOVERY**

Patton is quite familiar with the property where the Middle Woodland home was found—it’s owned by his family. The anthropologist recalls that his grandfather helped spark an early interest in the field by asking him to collect artifacts in the backyard. Patton went on to major in classical civilizations at Ohio University, which led him to Abrams’ anthropology courses and research.

Patton was one of the 345 Ohio University students who have participated in the Ohio Archaeological Field School over the last 30 years. He worked digs at Monday Creek and at the Wayne National Forest, learning about the physical rigors and intellectual thrills of the work.

“It’s academic interest—but also human curiosity—to
unearth an artifact and realize you’re the first person to see it in thousands of years. It’s awe-inspiring. It almost becomes an addiction to want to learn more about the past,” he said.

After earning a doctoral degree in anthropology at Ohio State, where he studied the ceramic cooking vessels used by early peoples and the foods they prepared in the vessels, Patton returned to his alma mater as a faculty member in 2013. When Abrams retired, he took over the reins of the field school.

Other alumni of the field school can be found working in private, government, and nonprofit sectors of cultural resource management, ensuring that historical artifacts and sites are properly protected or preserved. As part of the school’s 30th anniversary celebration in October 2016, five former students returned to campus to discuss how the Ohio University program gave them a well-rounded understanding of anthropology, an appreciation for attention to detail, and experience with research.
Tatiana Fox, who has worked in the private sector in several states since her graduation, said that the Ohio University program gave her a solid preparation for her career in cultural resources management. While some of her professional colleagues attended field schools in Europe that explored more well-documented cultures, Fox noted that the Ohio school offers students the chance to contribute new knowledge about early societies that previously were left out of the historical picture.

“I really like that you get to do the local, regional archaeology,” she said about her time in the field school program. “The research part of it—and the fact that we have to read all this different material on local stuff while we’re excavating—all that is really important because it ties theory and concept together with the actual dirt in your hands. … It’s something you should experience before you get in the field because it will make you a better archaeologist.”

Students who gain experience in the field school may go on to work for entities such as government agencies, nonprofit groups, or private companies focused on protection and preservation of cultural artifacts.

Paul Patton, above, is a field school alumnus who returned to Ohio University as a faculty member in the Department of Sociology and Anthropology. He now directs the program.

PAUL PATTON
During his Alden Library talk in October, Abrams noted that the Ohio Archaeological Field School has answered the major questions it set out to tackle when he initiated the project in 1986. Abrams and Ohio University anthropologist AnnCorinne Freter edited a 2005 book, *The Emergence of the Moundbuilders: The Archaeology of Tribal Societies in Southeastern Ohio*, with chapters by colleagues and former students highlighting and analyzing the field school discoveries. Abrams continues to co-author scientific papers emerging from the project’s fieldwork.

Patton and future cohorts of the Ohio Archaeological Field School still have more questions to explore, as there are new directions in the research, advances in scientific equipment, and an expanded research facility to guide and aid them. Patton’s previous research on ceramic cooking pots opened the door to his current interest in the agriculture and diet of the early inhabitants.

“The transition to food production and farming is undeniably the most significant change in human behavior,” he said, noting that humans were able to build a more complex, technologically advanced society “due in large part to the fact that people were able to produce and control a food source.”

Through the field school’s many excavations and analysis, the Ohio University anthropologists have learned that the early inhabitants of southeastern Ohio were growing domesticated plants much earlier than previously thought, Patton said. The team has produced some of the most detailed data in eastern North America about the transition from foraging to farming, he noted.

Early people cultivated and consumed crops such as sunflowers, maygrass, and goosefoot; the latter is a local botanical relative of quinoa.

“We can also say that the original foods they were eating and growing were significantly healthier than the maize that came later—which is a big component of our diets now,” Patton said.

Patton and a graduate student have planted experimental plots of goosefoot, also known as lamb’s quarters, to determine if it can be germinated and grown as a viable alternative to the quinoa crop, which is not native to North America. It’s an example of how the field school’s studies of human history could have implications for modern health and the economy, Patton noted.

Back in the laboratory, new scientific techniques and equipment are helping the team create bigger digital databases of the artifacts and analyze the tiniest starches and seeds found in the soil. That includes sediments that Abrams may have collected decades ago, Patton said.

“Elliot foresaw the direction we could go with the science—he was taking sediment samples before people were doing that with great frequency. We’ve benefited a lot from that,” he said.

Field school students have been just as eager to sift through artifacts in the laboratory in Bentley Hall as they are for literally getting their hands dirty shoveling plots of earth under the summer sun. A high volume of student requests to conduct scientific research on the field discoveries led to the creation of a new course, Patton said. The program has since outgrown its space and will move into newly renovated labs in the Central Classroom Facility in 2017.

Abrams and Patton both credit the enthusiasm and commitment of Ohio University students with the Ohio Archaeological Field School’s success in uncovering the story of the region’s early peoples. The discoveries are relevant not only to the Native American descendants of these inhabitants and the contemporary residents of Appalachia, Patton said, but to our wider understanding of our history.

“The university has a tagline about being the best student-centered learning experience,” Patton said. “I think the field school really in a lot of ways lives up to that and even exceeds the expectations.”
How more accurate measurements of physical activity could help improve our understanding of kids’ fitness and health
Cheryl Howe is at a neighborhood park within eyeshot of the Ohio University main campus. She has gathered a handful of children and is outfitting them each with a yellow vest and a 1980s-style fanny pack, which she fills with GPS devices and accelerometers. A 5-year-old asks if he can put his tiny teddy bear in the pack. It fits, so he does.

Howe asks the kids to spend 20 minutes playing follow the leader—she’s trying to keep them close together—and instructs them to play on the swings, on the playground equipment, and out in the nearby field. Howe’s undergraduate research assistants are carrying handheld cameras to record the kids at play.

“What I always ask my students when I’m teaching pediatric exercise physiology is, ‘What are you seeing?’ They see a lot of chaos and they equate chaos to physical activity,” says Howe, an associate professor of exercise physiology and director of education for the Diabetes Institute at Ohio University. “Then I say, ‘Watch this child, this particular child,’ …They’re not moving at all.”

Howe’s students aren’t the only ones who are missing the whole picture. Reliable measurement of children’s physical activity—particularly natural, free-play—still eludes the field of exercise physiology. Much of the existing measurement in the literature relies on information gleaned from kids on, say, a treadmill. “Kids will do anything in a lab setting—kids try to please you. But how often do you see children ‘playing’ on a treadmill?” Howe says.

The implications of more accurate measurements of children’s free-play physical activity are broad. The Centers for Disease Control and Prevention (CDC) reports that 17 percent of children ages 2 to 19 are obese. Among the causes of this epidemic identified by the CDC are a lack of consistent regulations for school or child care facilities that promote healthy eating and physical activity, plus communities that lack safe and appealing places for children to play, such as parks and recreation centers.

“Knowing where the kids play and what is there will tell us if that amenity or that location hinders or promotes quality physical activity,” Howe says. “We cannot confidently prescribe exercise, design programs, or design playgrounds until we really understand their behavior.”

LOCATION MATTERS

Schools are among the primary institutions that can implement solutions to childhood obesity. Today, Howe is calibrating instruments that she uses on school playgrounds during her ongoing studies. This is where the contents in those fanny packs come in. The accelerometers the kids carry measure acceleration. Little to no acceleration indicates that the kids are being sedentary, mostly just standing. Greater acceleration is associated with moderate activity, like walking or playing catch. High acceleration means they are engaging in vigorous activity, like when they’re playing tag. The accelerometers feed data into a computer program that can learn to distinguish between true vigorous activity, like running, and other high-acceleration events, like going down a slide.

The GPS devices, in sync with the accelerometers, allow Howe to tell how and exactly where the kids are getting the vigorous activity that’s good for them. This is why Howe has instructed the kids to make sure to play in the field as well as at the playground. Much of the existing literature relies on direct observation that can’t accurately report play patterns with large sample sizes—that is, groups of schoolchildren—in the chaos of a school playground. The GPS in combination with the accelerometers, verified by video, is providing exact information about the intensity and location of the kids’ physical activity.
Growing up, Howe liked sports such as hockey—of course, she’s Canadian—and soccer. After earning a master’s in exercise physiology, she was hired to work on a National Institutes of Health (NIH) grant that measured the impact of an after-school intervention program to prevent childhood obesity in an African-American community. In that study, researchers used heart rate to measure the intensity of physical activity.

“I knew that was not accurate,” Howe says, pointing out that other factors, like illness or stress, could account for elevated heart rate. “So I knew I had to figure out another objective measure.”

She has been doing so ever since, from her doctoral research to Ohio University’s STEP Lab (Strategies and Tools for Evaluating child’s Play). When she first arrived at Ohio University, Howe met a colleague who was using GPS to track the location of his athletes, who had suffered concussions. This gave Howe the idea to combine GPS along with accelerometers to measure location of physical activity. The NIH was already using accelerometers in health studies.

Back at the STEP Lab, Howe has a poster to go along with a talk she gave at the International Society for the Measurement of Physical Behavior conference in Limerick, Ireland. The poster shows an aerial photo of an elementary school playground and ball field. Superimposed on the image is what looks like a swarm of red bees. Each dot, created with a GIS program, represents a child’s activity level and location on the playground, with darker colors representing higher physical activity intensity.

What the image shows is significant. Some areas of the playground promote more vigorous activities—and they may not have been the areas one would think. “I thought the field would promote more moderate-vigorous physical activity because it would promote running,” Howe says. “They ran to the field, but then they sat or they were just standing around, basically.”

Howe points out that simply introducing balls or Frisbees to the field would encourage more vigorous activity. “They had no equipment provided to those children, other than (a ball for) foursquare,” she notes.

On the court, where the foursquare is located, the boys were more vigorously active than the girls. But in the playground equipment area (with slides and swings), boys and girls both engaged in mostly vigorous activity. The field was equally sedentary for both sexes.

“It’s contradictory with most of the research,” Howe says, explaining that only the results from the court area match up with most of the existing literature.

Howe’s research to this point shows that her method of combining the accelerometers with GPS is successfully identifying where kids are engaging in the most vigorous physical activity—but only within the existing accuracy of the GPS. Factors such as number of satellites providing data plus on-the-ground obstacles like trees or buildings mean that GPS coordinates may be off at times—anywhere from 2.5 to even 15 meters. Howe has reached out to her Ohio University colleagues at the Voinovich School of Leadership and Public Affairs, Department of Geography, Avionics Engineering Center, and School of Media Arts and Studies to find ways to better account for the uncertainty of the devices and improve synchronicity of video verification. They are submitting a proposal to the NIH to further the research.

“I consider her an up-and-coming star,” says Patty Freedson, professor of kinesiology at the University of Massachusetts-Amherst. Freedson is a field leader in measurement of physical activity, mainly in adults. “If (Howe is) able to demonstrate with a particular intervention, a recess intervention, that it’s effective and gets kids more active … that can be implemented in a big way, not just at the school she’s in.”

Freedson was also Howe’s dissertation adviser, so she knows Howe’s intentions well. “I think she really wants to make a difference in the lives of kids,” she says.
“How do we get kids moving?” Howe asks, almost rhetorically. “Enjoyment is the biggest factor.” Howe’s research has taught her that kids don’t enjoy things like plain walking or running, but they do enjoy activities like hula hooping and tag. But again, precise measurement of what kids enjoy is lacking.

To that end, Howe has tested and refined a real-time and age-appropriate measurement: Immediately following prescribed “quality physical activity” (moderate or vigorous activity that contributes to the recommended daily dose), kids look at a series of smiley faces and choose the face that most closely resembles how much they enjoyed the activity—from a neutral face to a broadly smiling face. Howe’s experiments have shown that a previously existing option of nine faces were too many for kids, so she reduced it to three. But three smiley faces didn’t allow a frown, which the kids requested. She currently uses four faces: a frown, a neutral face, plus two enjoyment faces. “We know if kids like what they’re doing, they’re going to do it with much more gusto,” she says.

Today’s play session is complete and the 5-year-old with the teddy bear runs back to Howe, red faced, to return the fanny pack. “Can we play a little bit longer?” he asks.

Ohio University associate professor of exercise physiology Cheryl Howe is an expert in measuring physical activity in children at play. It’s why her colleagues at the University of Massachusetts-Amherst (where she completed her Ph.D.) called upon her to help create and test an intervention program based on the storybook Henry Gets Moving! Henry is an overweight hamster who gets teased about his weight and learns to adopt more healthy lifestyle habits.

Howe oversaw a graduate student’s work with first graders—using control and intervention classes—that followed them through a six-week curriculum, in which kids learn alongside Henry about healthy foods and the importance of physical activity. “They saw (Henry) as a role model,” Howe says. The research showed that students improved their knowledge of physical activity recommendations, food groups, and serving sizes.

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JOINING FORCES

Quest to combat infectious diseases leads to launch of new research facility

For much of his scientific career, Mario Grijalva has worked to study and reduce the spread of Chagas—an infectious disease transmitted by the bite of the triatomine bug—in his native Ecuador. The Heritage College of Osteopathic Medicine professor and his students and colleagues have documented the incidence of the insects and disease, worked to eradicate Chagas-infected blood from the nation’s blood banks, and built homes and improved schools designed to banish the bugs and improve community health. Over the last two decades, hundreds of Ohio University students have traveled to Ecuador with Grijalva to study and combat Chagas, working collaboratively with researchers at the Pontifical Catholic University of Ecuador (PUCE) in Quito.

The success of these research endeavors prompted PUCE to build the Center for Research on Health in Latin America (CiSeAL), a six-story, state-of-the-art scientific facility that can accommodate 22 permanent research groups and support personnel, visiting researchers, and students. CiSeAL, which opened in June 2016, will focus on tackling infectious and chronic diseases such as malaria, HIV/AIDS, Chagas, Zika, and diabetes. Grijalva, his students, and alumni of his program conduct research at the new facility, where the professor directs the Infectious and Tropical Disease Institute (ITDI) projects both in Ecuador and at the Heritage College.

A delegation of Ohio University administrators, faculty, and students traveled to Quito last summer to attend the grand opening of CiSeAL and visit the newly constructed Chagas-free homes that are part of Grijalva’s Healthy Living Initiative. Faculty and deans now are exploring ways to build on the relationship with PUCE to conduct additional interdisciplinary research and scholarship in Ecuador.

FROM STAFF REPORTS
(far left) Exterior of the new Center for Research on Health in Latin America; (above) An example of a new lab; (left) Mario Grijalva shows a delegation of Ohio University administrators, faculty, and students a standard dwelling; (below) Housing built by Grijalva’s team that helps keep insects out is part of the outreach effort in Ecuador.

PHOTOS: RICH-JOSEPH FACUN/HERITAGE COLLEGE OF OSTEOPATHIC MEDICINE
The success of Mario Grijalva’s research endeavors to combat Chagas in Ecuador prompted Pontifical Catholic University of Ecuador to build the Center for Research on Health in Latin America, a six-story, state-of-the-art scientific facility that can accommodate research groups and support personnel, visiting researchers, and students.

(See story on page 32)