KENT STATE UNIVERSITY

DEPARTMENT OF ANTHROPOLOGY

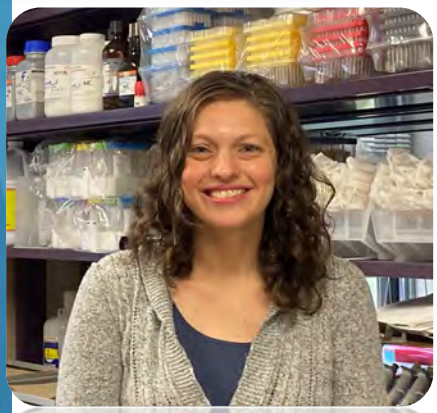
NEWSLETTER FALL 2021

INSIDE THIS ISSUE:

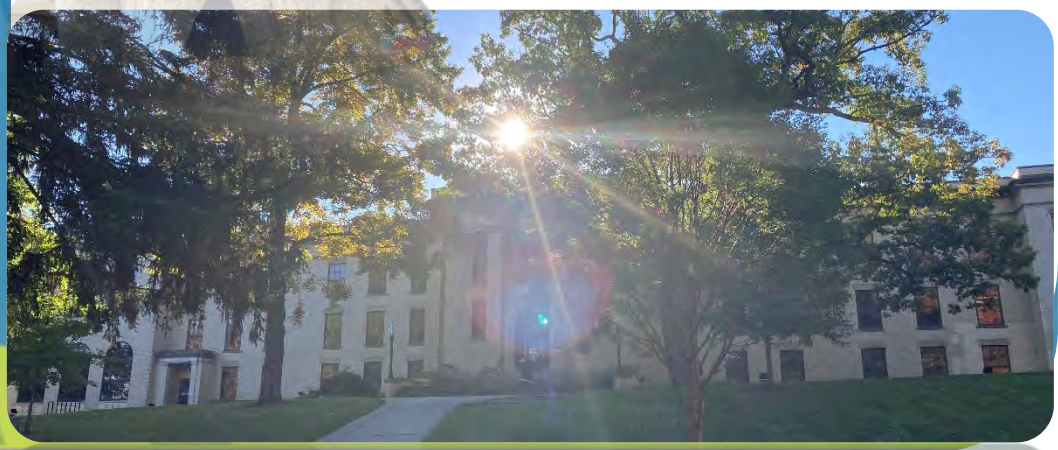
Dr. Aldo N. Cimino, Cultural Anthropology

Dr. Aldo Cimino (Ph.D., University of California, Santa Barbara) joined the tenure track faculty as an Assistant Professor at Kent State in August, 2021. Dr. Cimino's primary research focus is aversive initiation practices (hazing). He studies the causes and consequences of hazing, integrating experimental and ethnographic methodologies. Dr. Cimino is also broadly interested in the creation and maintenance of secret societies, the treatment of group newcomers, and the underlying psychology that allows groups to endure over time. He has received numerous nominations for teaching awards and we are thrilled to welcome him to KSU!

Dr. Melissa Edler, Research Assistant Professor



Dr. Melissa Edler was featured in an earlier newsletter when she joined us as a grant-funded Research Associate in 2019. Dr. Edler has now officially joined us as a grant-funded non-tenure track Research Assistant Professor and is co-PI on a newly-awarded 5-year NIH grant totaling more than $3.7 million dollars (KSU portion: > $1.2 million). More on this award later in the newsletter.



NEWSLETTER OF THE DEPARTMENT OF ANTHROPOLOGY
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A Message from the Chair

Dr. Mary Ann Raghanti

Mary Ann Raghanti, Professor and Chair, in her lab. Note the band-aid on the left arm of the shirt, promoting COVID-19 vaccines for the KSU community and beyond.

As always, I am thrilled to share some of the department's highlights from the past year! As I sat down to organize the material that I've been collecting for this newsletter, I was absolutely amazed by all that we accomplished, especially considering the fact that we are still in the midst of this global pandemic. I can tell you that I am dazzled by every single member of this department, and when I look at all of them together, I am positively gobsmacked. We remain one of the smallest departments on campus, but our impact- in terms of research, scholarship, and student successes- is magnificent.

One of the most valuable lessons that I've learned during my time at KSU came from Dr. Olaf Prufer ("Uncle"). Olaf would eagerly take credit for every success of every member of this department at every opportunity- beaming and excitedly relaying every accomplishment, big and small, and sharing how he contributed to each person's life, even if it was only peripherally. He once relayed to me a story of something wonderful that a former student did, and as far as I could tell, Olaf's only contribution to that student's life was to insult him for wearing his hat backwards. Nevertheless, Olaf felt he had made an impact (and surely he did), so he took some credit and basked in the glory of that student's achievement.

The light shining on a fellow colleague in no way diminishes the light another receives. Rather, it only amplifies the light that surrounds us all.

As our friends and colleagues, I know that you will share in the joy of the department's recent successes, and I invite you to take credit for all of them with me. There are many!

Follow us on Twitter!

@AnthroKentState

@TheErenLab

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NSF I-Corps and Ohio Department of Education Grant – Primal Points

Drs. Michelle Bebber and Metin Eren, along with collaborators Dr. Michael Fisch and Trent True (KSU College of Aeronautics and Engineering), Dr. Michael Kavulic (KSU Assistant VP, Research Administration), Dr. Albert Green, and Michael Wilson received an NSF iCORP grant.

The NSF Innovation Corps (I-Corps) program "uses experiential education to help researchers gain valuable insight into entrepreneurship, starting a business or industry requirements and challenges.

I-Corps enables the transformation of invention to impact. The curriculum integrates scientific inquiry and industrial discovery in an inclusive, data-driven culture driven by rigor, relevance, and evidence. Through I-Corps training, researchers can reduce the time to translate a promising idea from the laboratory to the marketplace.

NSF is developing and nurturing a national innovation network to guide scientific research toward the development of solutions to benefit society."

This project funded the development of Primal Points-creating modern metal broadheads for bowhunting that resemble prehistoric spear tips.

Left: Examples of metal prototypes alongside stone points.

Alums Amy Dupper & Michael Veres said "I do"!

Recent graduates of our Master's program, Amy Dupper and Michael Veres may have moved on from Kent State, but that move put them closer together. They re-connected after graduation and were married in 2018.
Congratulations, Amy and Mike! KSU Anthropology is overjoyed for your successes and your connection to us and to each other!

Alumni Amy Dupper (MA '13) and Michael Veres (MA '12)

Dr. Linda Spurlock, Expert Witness

October 27, 2020 Dr. Linda Spurlock, Expert Witness for the Prosecution in the murder trial of Eliazar Ruiz, a 4-year-old boy (Romaine vs. the State of Ohio).

The skeleton of Eliazar Ruiz was found in plastic garbage bags in Cleveland, Ohio, in 2017. Initially he was unidentified. Spurlock testified about how she prepared the forensic art that led to his identification, and the methods used to determine his age at death. An important part of her testimony was a persuasive argument that the child did **not** have an abnormally shaped skull, that his brain had been able to grow normally, and that the Defense should not suggest he had behavioral problems. Lastly, she detailed the evidence for defensive wounds on the child's wrists (both a healed fracture and a newer one from around the time of his death).

After a two-week trial, the jury found Romaine Tolbert, then 38, guilty of involuntary manslaughter, kidnapping, endangering children, gross abuse of a corpse and tampering with evidence. He is now in prison for the next 15 years.

Dr. Alistair Key Lands an "okay' Job

Frequent Kent State University Visiting Researcher and close colleague, Dr. Alistair Key is the newest anthropologist at the University of Cambridge, UK! Please join us in congratulating Dr. Key on his new appointment as Lecturer in Paleolithic Archaeology.

Dr. Key is well known in the halls of Lowry as an active member and collaborator in the Experimental Archaeology Laboratory. He and Dr. Metin Eren are co-PIs on a current grant from the Royal Society for their project, "An open access database detailing the comparative sharpness and cutting performance of raw materials used to produce Palaeolithic stone tools".

Dr. Key had received an award from the European Research Commission Marie Curie Fellowship Program that would have funded him to be at Kent State University for two years. That award was deferred when Dr. Key took the position in Cambridge. Alas, Cambridge's gain is Kent State's loss, and we admit that Cambridge is probably not too shoddy of a place to work. Just kidding Dr. Key- we are thrilled for your successes!!

Rolling in the *Grant* Money!
Dr. Rafaela Takeshita

Dr. Rafaela Takeshita in her lab. Note the band-aid on the left arm of the shirt, promoting COVID-19 vaccines for the KSU community and beyond.

Dr. Takeshita has been wildly successful in grantsmanship over the past year! She received a **Gold Award from Kent State's Brain Health Research Institute, a post-PhD Grant from the Wenner Gren Foundation for Anthropological Research** and (drumroll, please) an **NSF award! The grants that she received in the past year total $325,000.00!!!** Each of these awards contribute to her major research focus of adrenarche. She and her collaborators will be examining **"The Role of Adrenarche in the Evolution of Human Life History".**

Humans are characterized by a uniquely extended period of dehydroepiandrosterone (DHEA) secretion, yielding blood concentrations 10-fold those of chimpanzees, our species' closest living relative. This adrenal neurosteroid has been associated with longevity and plays an important role in regulating brain development. A number of non-human primates secrete very low levels of this hormone and the reason for these interspecies differences is unclear. The investigators use comparative primate endocrine, genetic, and morphological data to examine whether DHEA secreted by the adrenal gland may have contributed to brain steroid input during human evolution and provide insights into the biological mechanism of adrenal steroids in primate body and brain. This research fosters international collaboration, supports the training of undergraduate and graduate students, and develops public science outreach activities at zoos.

The developmental period in humans and great apes is marked by middle childhood growth (adrenarche), the post-natal increase in the adrenal hormones dehydroepiandrosterone (DHEA) and dehydroepiandrosterone-sulfate (DHEAS). Both hormones are also secreted in the brain and have been associated with longevity and brain maturation. However, adrenarche is not apparent in lower primates, and the reasons for these interspecies differences are not well understood. This project uses endocrinology, microscopy and genetics in a comparative framework to examine the origins of adrenarche and its potential impact on primate brain and life history traits. Adrenal steroids and the enzymes necessary for steroid synthesis are quantified peripherally in living nonhuman primates as well as centrally in human and nonhuman postmortem brains to determine the connections between age, brain function, and adrenal steroids in primate life history. This study can impact our understanding of adrenal function in regulating primate development and contribute to debates about the role of DHEA in human evolution.

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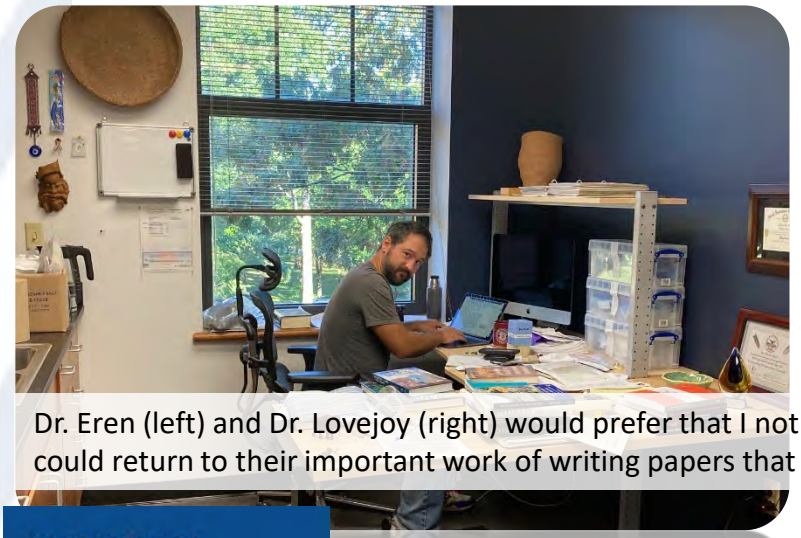
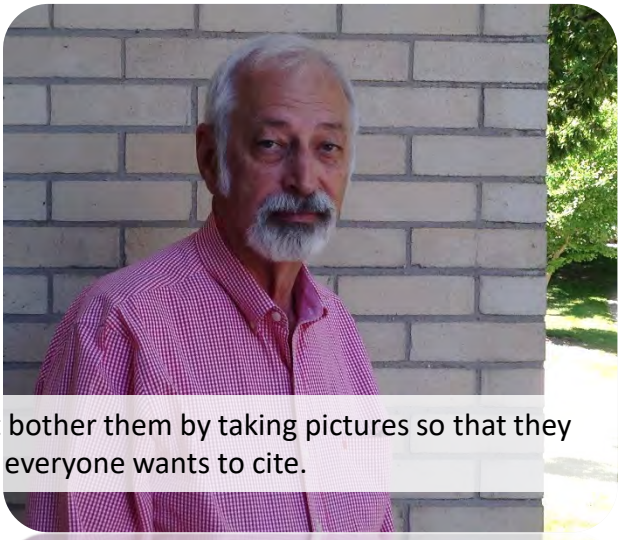
Stanford Names Top 2% Scientists

Dr. C. Owen Lovejoy and Dr. Metin I. Eren are on that list!!

Stanford created a database of the top 2 percent of the most-cited scientists in various scientific disciplines. **TWO** of KSU Anthropology faculty members made the list- Dr. Lovejoy made both the career and single-year lists and Dr. Eren made the single-year list. In case you're keeping score, that's nearly 30% of KSU Anthropology faculty in the Top 2%!





Dr. Eren (left) and Dr. Lovejoy (right) would prefer that I not bother them by taking pictures so that they could return to their important work of writing papers that everyone wants to cite.

KSU's New Faculty Outstanding Research & Scholar Award: Dr. Metin I. Eren

Sponsored by the University Research Council and the Division of Research and Sponsored Programs, this award is intended to recognize Kent State's exceptional researchers and scholars. The awardees are selected based on the quality of their research, creative activities and scholarship and their impact on society. This award is given to faculty who are in their first 10 years at Kent State.

TRIVIA Question
When it comes to places to eat downtown, Ray's is a favorite hangout for Kent State students. What year did Ray's begin feeding the Kent State community?

Find the answer on the last page

Some of Our Graduate Student Successes!

Master's student Dan Wilcox featured by the Institute for American Indian Studies (IAIS)

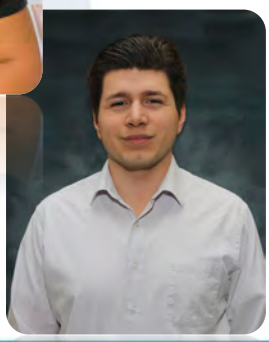
Dan's thesis research examines how soapstone vessels can be used to make maple syrup. His experiments are shedding light on native foodways prior to contact with Europeans.

Sigma Xi Grants-in-Aid: PhD Candidate Danielle Jones

Danielle received a grant from Sigma Xi for a component of her dissertation research, "A comparative analysis of monoamine oxidase-B expression in human, chimpanzee, and macaque brains throughout the lifespan".

Danielle Jones

Danielle Jones also received the Mary Ann Stephens and John R. Graham Award for Excellence in Graduate Research and Scholarship. This award is presented annually to one doctoral student underrepresented in his or her discipline. Normally, one award is made each year and is based on the merit of the applicant's contribution to research and scholarship.



Cody Ruiz

Cody Ruiz, PhD candidate received the David B. Smith Scholarship. This award is presented annually in honor of David B. Smith, a magna cum laude graduate of KSU, to recognize exceptional scholarship and teaching.

Some of Our Graduate Student Success!

STEM Advocacy Institute (SAi) Fellowships
The "SAi Fellows Program seeks to provide mentorship and funding to those with novel early stage ideas which aim to build or strengthen bridges between science and society. Fellows receive the theory, design, implementation, and evaluation knowledge-base to enable them to build impactful and sustainable initiatives. Fellows also receive professional development support." https://stemadvocacy.org/sai-fellows/

2021 SAi Fellow: Rose Leach, PhD candidate will develop a project called HomEvo, an educational board game for high school students to help them learn about the history of human evolution and the basics of natural selection.

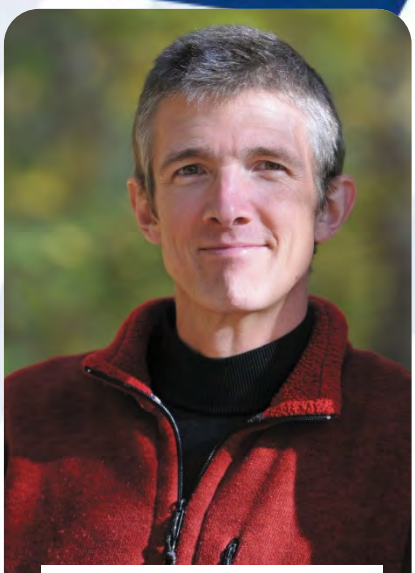
2020 SAi Fellow: Danielle Jones, PhD candidate developed a project aimed at improving mental health and resiliency for high school students. Dani taught a cohort of Upward Bound students over the summer, utilizing her plan. Upward Bound programs are designed to help students overcome class, social, academic, and cultural barriers to higher education.

Rose Leach, PhD candidate also received a SciComm internship with US Geological Survey through the Virtual Student Federal Service highlighting the threat of coastal erosion to the preservation of Pu'uhonua o Hōnaunau National Historical Park in Hawai'i, which contains an important Hawaiian ceremonial site!

Please join us in congratulating PhD candidate Rose Leach again! Rose received the William S. Pollitzer Student Travel Award from the American Association of Physical Anthropologists (AAPA). The theme of this year's essay competition, appropriately, was informed by the COVID-19 pandemic and racial injustice. Specifically, contestants were asked to describe the role that biological anthropologists play in informing the public about the interrelationships between public health and race.

Book Recommendation: Fossil Men

By Kermit Pattison

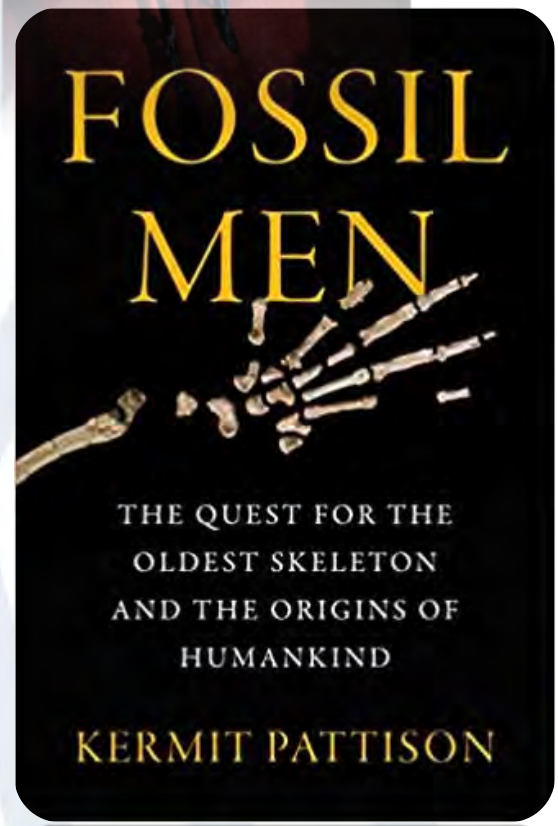


Author Kermit Pattison

Pattison artfully crafted the story of Ardi, highlighting all of the scientists involved. Dr. Lovejoy is featured throughout this page-turner!

What "they" are saying:

"[A] riveting account. ... In places, *Fossil Men* seems more reality television show than a work of popular science, as we follow an outrageous cast. ... The story lines border on the insane: There are civil wars, gunfights, at least one grenade rolling around the feet of scientists as they drive into the desert. ... Pattison... is every bit as good as the best scientist-writers. He describes the intricacies of the human wrist and foot with the skill of a poet... [and] explains in clear and compelling prose how scientists build family trees of ancient species." -- *New York Times Book Review*



"Perceptive and revealing. ... Pattison has a commendable and enviable grasp of a wide range of difficult methods and concepts, and he does a fine job of presenting and explaining the many scientific developments that have enriched the way we interpret the hominin fossil record." -- Journal of Human Evolution

"Equal parts biography and adventure novel, Pattison illustrates the colorful characters — flaws and all — whose research has shaped our origin story as we know it today." -- Discover magazine

"[A] lively debut. … Pattison ably combines the adventure yarn with scientific minutiae. … Those interested in human origins should check out this vivid and thorough study." -- *Publishers Weekly*

"Blends science and drama to tell the story of a major paleoanthropology find. ... For anyone interested in fossil hunting, evolutionary science and a hominid skeleton like no other, this book delivers." -- Science News

The Mark F. Seeman ENDOWED Fund for Archaeological Research!

We are thrilled to share the news that the **Mark F. Seeman Fund for Archaeological Research is now <u>Endowed</u>**! This endowment will provide continuous funding to support faculty and student research within the subdiscipline of archaeology.

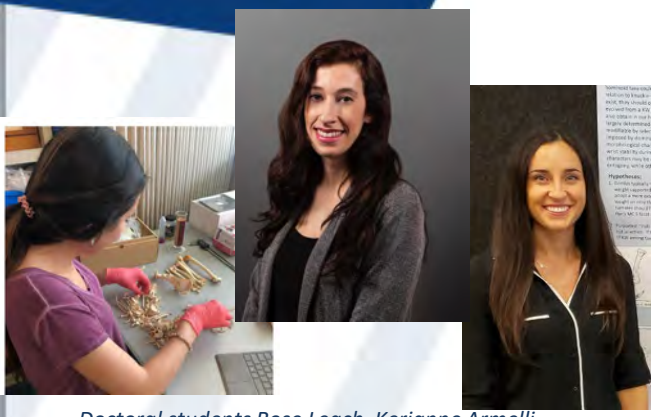
Archaeology's new word working bench and tools

Monies from this fund were used to purchase woodworking tools and equipment for the fashioning of necessary items often used in the Experimental Archaeology Laboratory, like arrows and spears.

Dr. Bebber, lecturing…. (this is just begging for a fill-in-the-caption contest).

Dr. Metin Eren FLINTKNAPPED "KSU" for display in the College of Arts & Sciences Main Office.
Note the band-aid on the left arm of the shirt, promoting COVID-19 vaccines for the KSU community and beyond.

Department of Anthropology Endowed Fund for PhD Student Research



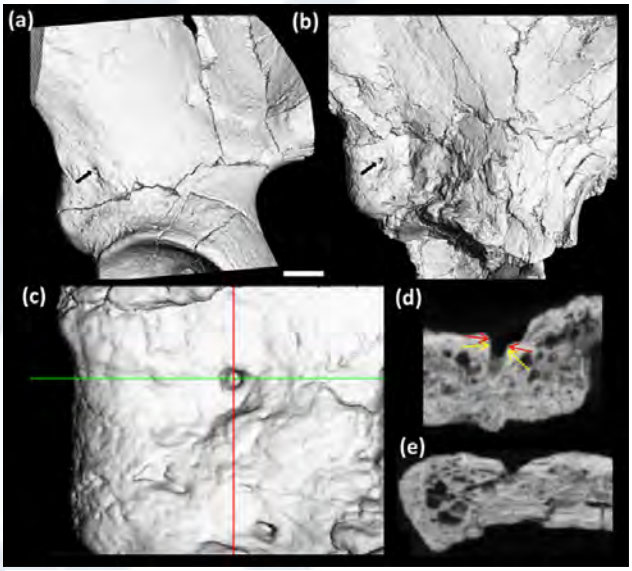
Doctoral students Rose Leach, Kerianne Armelli, Heather Lawrentz

Ph.D. students Heather Lawrentz, Kerianne Armelli and Rose Leach used funds to take a 3D Geometric Morphometrics course from the Transmitting Science Company. This course provided training to conduct shape analysis using 3D models.

Kerianne Armelli: "In this class I was able to learn how to bring my data to life, taking simple measurements and turning them into a 3D reconstruction of primate crania. Being a graduate student interested in sexual dimorphism, learning how to manipulate 3D modeling for shape analysis was very exciting to learn and I can't wait to incorporate my new skills into my future research!"

Ph.D. Candidate Dexter Zirkle used funds to offset the cost of page charges for his *in press* article in *PeerJ*:

Zirkle D., Meindl, R.S., Lovejoy, CO. Upright walking has driven unique vascular specialization of the hominin ilium. *PeerJ.*



CT render of AIF in two major hominin fossils
(a) A.L. 288-1, **(b)** ARA VP-6/500. The AIF is denoted by a small black arrow in each specimen. (**b-e)** ARA VP 6/500 (see Methods). **(c)** Major and minor axes of AIF in surface render. **(d)** Superoinferior section showing approximate points of measurement of diameter at about 0.5 mm depth (Yellow arrows: 1.1 mm), canal diameter is 1.0 to 1.1 mm to about a depth of 1.5 mm. Red arrows show approximate point of measurement of cast using dental calipers (for discussion see text). **(e)** Anteroposterior foramen section showing canal path near foramen.

Left: A figure from the Zirkle et al. publication showing the anterior iliac foramen (AIF, affectionately known as "Zirkle's foramen" in Lowry Hall) in both Lucy (a) and Ardi (b-e).

We want to continue increasing the amount of the principal in the account (and, more importantly, increasing the amount of awards to doctoral students). Our long-term goal is to augment the fund by $10,000 every seven years. We can achieve this target if 15 people donate $100 each year. Please consider being one of the 15 people. You do not have to donate every year, but consider doing so once every other year. Here is information on how you can help. Checks should be made payable to: *Kent State University Foundation*. You can also pay by Mastercard or Visa; call the Foundation Office at 330-672-2222. Include our account number – 34363 – on your check or letter accompanying your payment. The title of our account is "**Department of Anthropology Endowed Fund-Graduate Student Research**." The postal address is: Kent State University Foundation, P.O. Box 5190, Kent State University, Kent OH 44242. To donate online: www.kent.edu/philanthropy/outright-gifts-cash-check-or-credit-card

NIH R01 Grant: Alzheimer's Pathology in a Primate Model

Dr. Mary Ann Raghanti and **Dr. Melissa Edler** received a 5-year NIH R01 for their project, "Alzheimer's Disease Pathology in a Primate Model". They will work with a multi-institutional team that includes researchers at The University of Texas MD Anderson Cancer Center (Dr. William Hopkins), The George Washington University (Dr. Chet Sherwood), Duke University (Dr. Elaine Guevara), and Emory University (Dr. Sanjeev Gumber). The total award is $3,778,453.00 with the portion awarded to KSU totaling more than $1.2 million.

By combining resources, the team of researchers will be able to delve deeper into understanding how to counter the cognitive loss in AD using chimpanzees. The team previously discovered that aging chimpanzees spontaneously develop the two primary pathologies of AD, amyloid plaques and neurofibrillary tangles.

The University of Texas MD Anderson Cancer Center and Emory University house living chimpanzees that are retired from research, and researchers will use enrichment activities that the chimpanzees voluntarily participate in to collect information about their cognitive status.

Drs. Raghanti and Edler will examine neuropathological changes in the postmortem brains. The brains were collected upon death and the data will be compared to the cognitive data as well as epigenetic and other measures.

"In the human brain, you see plaques and tangles, and you have massive neuron death, which is associated with cognitive loss in those with Alzheimer's," Raghanti said. "But in the chimpanzee brain, we have similar types of pathology, but we're not seeing that level of neurotoxicity found in human AD. It doesn't have the same cascade effect in chimpanzees. If we can figure out what's protecting them from these downstream effects, we might be able to identify what renders the human brain so susceptible, and in doing that, we can identify targets for therapeutic intervention in humans."

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Farris Family Innovation Award: Dr. Michelle Bebber

In 1952, a local high schooler, David G. Mitten, unintentionally discovered archaic remains which overtime had naturally become hidden. Recognizing the significance of the undocumented archaeological site, Mitten turned over his findings to trained professionals who had the knowledge and expertise essential to preserving the ancient artifacts and continuing the excavation process.

Buried a few feet underground were substantial amounts of animal bones and man-made arrowheads; however, that was, quite literally, just scratching the surface.

Nearly 70 years later, the **Stow Rockshelter**, located in Summit County, Ohio, is still under exploration by local archeologists and history fanatics looking to uncover venerable moments frozen in time.

Michelle Bebber, Ph.D., assistant professor in the Department of Anthropology applied for the Farris Family Innovation award to fund her upcoming excavation project.

"We needed the financial support for this field project and it is of great educational value to the undergraduate and graduate students who get to apply their studies in a hands-on way," Bebber said. "It's a great opportunity to have such a historically significant site right in our back yard."

Artifacts found date back to nearly eight thousand years ago, but there is significant evidence to suggest that there is more to be found.

"We plan to excavate vertically so we can find more that date back even further," Bebber said. "It's a slow process with lots of documentation, but it is always worth it when we discover evidence of people from ten thousand years ago."

The project begins in August of 2021 and has been approved for three years of continuing excavation.

Archaeology Out & About!!

Dr. Metin Eren featured on **NPR's All Things Considered** "Humans may not have hunted woolly mammoths to extinction those thousands of years ago".

Dr. Eren and colleagues used experimental archaeology to demonstrate that clovis points could not penetrate the hair, hide, and flesh of a woolly mammoth to cause any real damage. Their experiments used a mechanical spear thrower to launch the clovis pointed spears into clay. The more likely scenario for the small number of sites where mammoth bones and tools were found together is that people scavenged already-deceased animals. Indeed, Dr. Eren cautions that if you do throw a clovis point at a mammoth, you should probably start running because you likely just annoyed a very large beast.

https://www.npr.org/2021/09/21/1039393846/humans-may-not-have-hunted-woolly-mammoths-to-extinction-those-thousands-of-year

Dr. Michelle Bebber

Dr. Michelle Bebber featured in **Science Magazine**, "Ancient Native Americans were among the world's first coppersmiths".

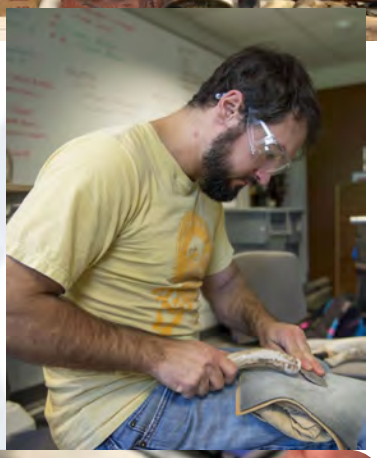
Dr. Bebber made replicas of copper arrowheads and knives to analyze why the Old Copper Culture came to an end. "Bebber's work replicating Old Copper–style arrowheads, knives, and awls suggests they weren't necessarily superior to the alternatives, especially after factoring in the time and effort required to produce metal implements. In controlled laboratory tests, such as shooting arrows into clay blocks that simulate meat, she found that stone and bone implements were mostly just as effective as copper. That might be because Great Lakes copper is unusually pure, which makes it soft, unlike harder natural copper alloys found elsewhere in the world, she says. Only copper awls proved superior to bone hole punchers." https://www.science.org/news/2021/03/ancient-native-americans-were-among-world-s-first-coppersmiths

Archaeology Out & About!!

Drs. Bebber and Eren hosted Arch-KID-Ology: Experimental Archaeology Live Stream

This was an "educational program is designed to introduce middle school and elementary students to the excitement of experimental archaeology! We will be "live streaming" a virtual tour of the Kent State University experimental archaeology lab while doing demonstrations of pottery making, flintknapping, and metal forging. The live stream will include a segment of time in which students will be given an opportunity to ask questions of Dr. Eren and Dr. Bebber, both while they are working (via text) or afterwards during a "talk-back" session. It is our opinion that this kind of interactive approach will engage many students who will enjoy the chance to meet the experts and interact with them in real time."

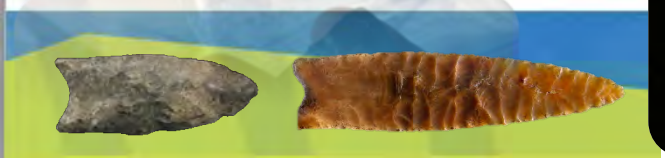
https://www.archaeological.org/akronkent-society-to-host-arch-kid-ology/



Dr. Eren featured on WKSU, "Stone tools discovery in Ohio could be the largest Ice Age cache found in North America"

When Dr. Eren joined Kent State University, he was contacted by **Scott Centea**, who worked in KSU's Office of the University Architect. Scott asked Dr. Eren to look at a collection of stone tools that was found by his father-in-law. The collection, 165 stone tools in total, was found in Mount Vernon, Ohio. Dr. Eren and a team of collaborators then spent 5 years analyzing the find and concluded that this was a Clovis cache that was buried by the first stone-age Americans over 13,000 years ago.

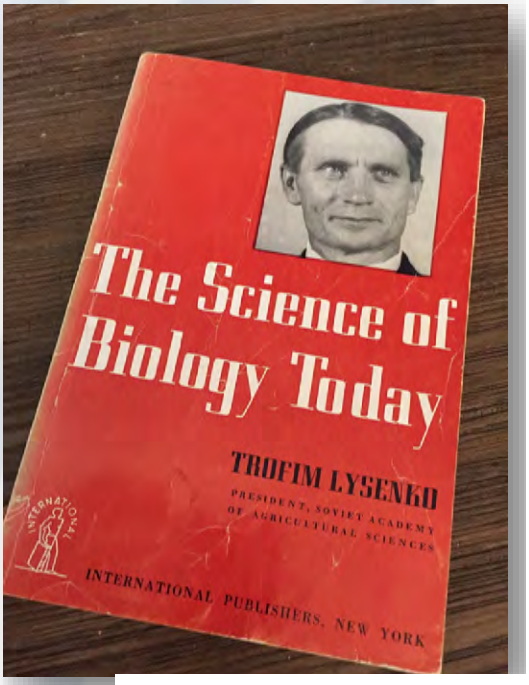
https://www.wksu.org/arts-culture/2021-06-09/stone-tools-discovery-in-ohio-could-be-the-largest-ice-age-cache-found-in-north-america



A Lesson on Science & Politics

Dr. Richard S. Meindl

Most of you remember Professor Olaf Prufer who taught both archaeology and cultural anthropology from 1968 until his passing in 2008. The Cleveland headquarters of the Communist Party of the United States was a few blocks from the West Side Market, and Olaf would sometimes visit both on his traditional Saturday morning road trips. Knowing my interest in the history of the biological sciences in Europe, he presented me with a copy of a rare 1948 pamphlet from the CPUSA. Pictured here, it reports the complete address of Trofim Denisovitch Lysenko to the Lenin Academy of Agricultural Sciences of the U.S.S.R. upon his ascension to its presidency that year. As pure propaganda it would have made Joseph Goebbels or the pundits of Fox Cable News proud.



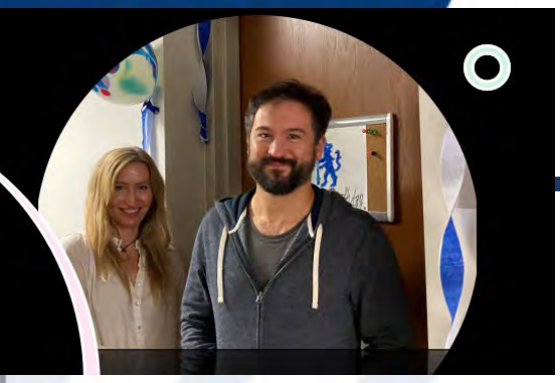
Some background: Vladimir Lenin himself had appointed scientist Nicolai Vavilov to direct the government campaign to raise the level of Soviet agriculture and the health and well-being of its peasantry. Under Vavilov's botanical prowess and brilliant organizational skills, the country eventually employed some 20,000 people in a network of research institutes and experimental stations that spanned ten time zones. Many of these communist workers were creative, scholarly, Mendelian geneticists, and they put Soviet Russia well on the path to joining Britain and the United States in the modern sciences of experimental agronomy, biometry, and genetics. But Lysenko himself rose to power and destroyed all this, banishing many important Soviet scientists to gulags, or worse, including Vavilov who died in prison in 1943.

Lysenko had attended one of these stations in the late 1920s, won an appointment in Azerbaijan, and reported original successes in agricultural production that were never really replicated. Nevertheless, Lysenko soon came to enjoy the image of the rough-hewn peasant scientist, which fit the plans and won the support of Premiers Joseph Stalin, and later Nikita Khrushchev, well into the 1950s. The Lysenko affair is probably the most instructive example of how science and politics do not mix, because Lysenko's science was, to put it delicately, bogus. Lysenkoism had by the 1930s developed subtle anti-Mendelian doctrines in favor of a Lamarckian notion of artificial selection of cereal crops—a faulty view of heredity and evolution that our bioanthropology students today fully understand. The invasion by Nazi Germany halted this attack on genetics, however, once the war was over, Lysenko and his cronies championed openly the importance of "acquired characteristics" in agricultural science. In fact, he included this remark toward the end of his 1948 address: "By ridding our science of Mendelism-Morganism-Weismannism we will expel fortuities from biological science" (p. 59). The final remark was a shout-out to his patron: "Glory to the great friend and protagonist of science, our leader and teacher, Comrade Stalin" (p. 62).

Lysenko fell from "Dictator of Genetics" (1948-1952) to "Charlatan of Genetics" by 1964. He died 45 years ago this month. However, Russian biological science, missing an entire generation of geneticists, will never recover.

Ings, Simon (2016) *Stalin and the Scientists: History of Triumph and Tragedy 1905-1953*. Faber & Faber Ltd.
Lerner, I. Michael (1968) *Heredity, Evolution and Society*. Freeman & Co.

NSF Grant: Collaborative Research: Does prehistoric stone tool 'backing' result in improved adhesion?



Drs. Metin Eren and Michelle Bebber, along with collaborators J Pargeter, M. Fisch, and B. Buchanan received an NSF award for their project, "Collaborative Research: Does prehistoric stone tool 'backing' result in improved adhesion?"

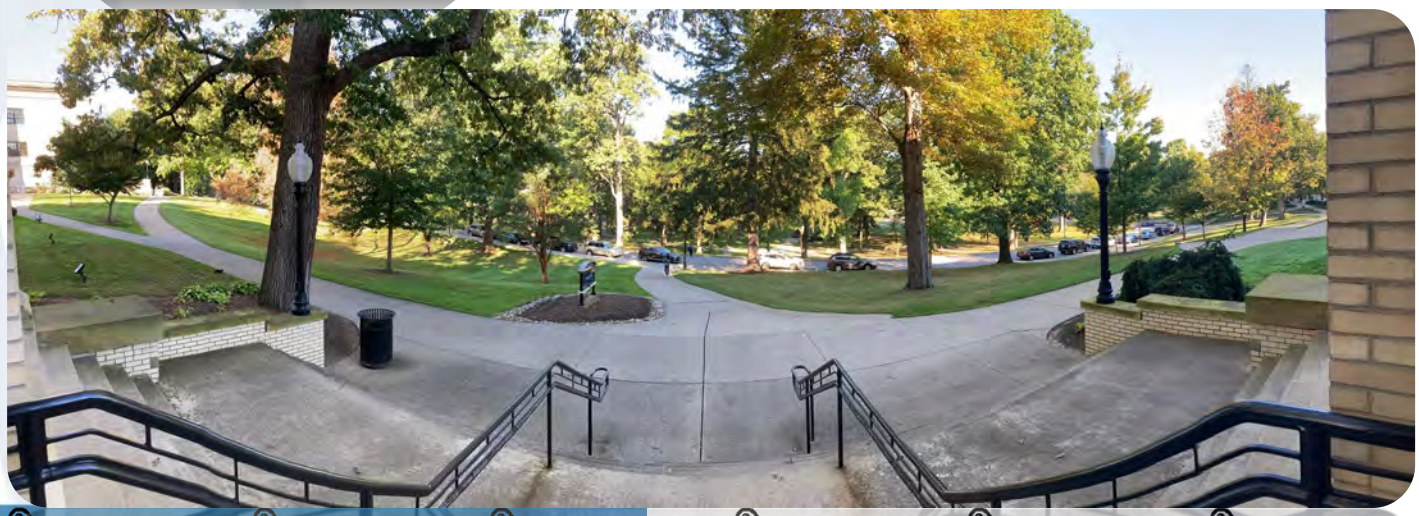
Humans have the capacity to modify their environments through a large set of inter-generationally transmitted engineering skills. The archaeological record addresses questions about the origins of these skills and can test hypotheses about why, when, and where they evolved. Building from this broader context, this project examines whether prehistoric people discovered, and then transmitted, a way to increase adhesion between individual components of their toolkits called "backing" (blunting). This research impacts human technological evolution by exploring if backing influenced stone tool function. This project takes a substantial inter-disciplinary step forward via the integration of archaeology, materials sciences, 3D morphometrics, and adhesive engineering in both controlled and actualistic experiments. The experimental collections generated from tests will be available for general study. The data will be permanently stored and freely accessible for download in the Open Science Framework (OSF) and through public education and outreach activities. Since backed stone tools are frequent implements found at sites relevant to the broader late Pleistocene human global dispersals, this project will advance understanding of the behavioral and technological adaptations that determined how our species came to colonize the planet.

The stone tool manufacturing technique of "backing" refers to the blunting of a flake's edge(s) at, or near to, a 90° angle. Backed tools have a long prehistory, extending over 250,000 years. But why blunt a sharp edge that toolmakers can otherwise use for a variety of practical tasks, such as butchery, engraving, or processing plant material? One functional hypothesis is that backing enabled early humans to attach stone tools more effectively to wooden handles. If the functional hypothesis is true, then backing represents a significant Stone Age innovation in adhesion engineering. This project involves a systematic program of robust, controlled experimental tests investigating the apparent adhesion advantages of backed versus un-backed tools used as projectile weapon inserts. This project constructs backed and un-backed tools using four common rock types: chert, quartz, quartzite, and heat-treated silcrete. These tools are then used in four controlled tests to understand whether backed tools offer significant adhesion advantages over un-backed flakes. Regardless of a positive or negative result, this project has implications for understanding human behavioral evolution, technology, and tool use.

Congratulations to Recent MA Graduates!

Shout out to Barbara Davis, the heartbeat of the department, who keeps all of us in line and everything running like a well-oiled machine!
Note the band-aid on the left arm of the shirt, promoting COVID-19 vaccines for the KSU community and beyond.

Roxanne Steinmuller (2021) Neuron and glial density changes across the lifespan in humans and chimpanzees (Raghanti)
Samantha Magrini (2021) Bone Growth: The wake of the growth plate? (Spurlock)
Samuel Thomas (2021) Adventure in the classroom: An ethnographic study of the Expedition Academy (Fotiou)
Damon Mullen (2021) Comparison of maximum forces required to penetrate ballistics gelatin, meat, and clay to assess variation among target mediums in arrow penetration studies (Bebber)
Kayla Metzger (2021) An examination of chronic alcoholism and bone pathology in the Hamann-Todd human osteological collection (Spurlock)
Michael Wilson (2021) Thermoplastic vs. organic-based adhesives in experimental prehistoric ballistics weaponry testing (Eren)



Updates on our Partnership with Kyoto University, Japan

July 2021 marked the five-year anniversary of our formal collaborations with the Primate Research Institute of Kyoto University. Some notable achievements in this window include **14 external grants & fellowships and 15 publications in peer-reviewed journals**. Building on these successes and the forging of several lab-to-lab collaborations, the renewal of the MOU was quickly approved in August by both institutions for another five years!

Despite COVID-related complications, the Kent-Kyoto partnership has continued to grow in the last academic year, especially as it relates to graduate student involvement. PhD candidates Morgan Chaney, Cody Ruiz, and Danielle Jones authored or coauthored three recent inter-institution publications, and candidates Cody Ruiz, Rose Leach, and Emilee Hart presented their research (virtually) at the 15th International Symposium on Primatology & Wildlife Science, hosted by Kyoto University last March. A number of these students will also conduct summer internships next year in Japan under our NSF-IRES grant. Jones, Leach, and Hart will be joined by Kerianne Armelli, Samantha Magrini, and Anna Mika. These six students will conduct projects in neuroscience, skeletal anatomy, or primate behavior under the direction of Japanese mentors. (Leach and Mika will work with Dr. Takeshi Nishimura, one of the winners of the 2020 Ig Nobel Prize for his research on helium-breathing alligators!) In preparation for their trip, our students have taken a semester of Japanese language and a seminar in Japanese society & culture *in addition to their normal research and teaching responsibilities*. They are currently polishing their summer 2022 research agendas with joint guidance from their Kent and Kyoto advisors, and excitedly planning weekend sightseeing excursions among themselves.

In previous years, several of our students' internships have been partially or fully funded by grants from the Japan Society for the Promotion of Science (JSPS), the Japanese counterpart to the NSF. Our experience working with the JSPS enabled us to assist a researcher outside of Kent State to also join our broader collaboration. We helped guide the successful JSPS summer application of Elaine Miller at George Washington University – a PhD student of Dr. Chet Sherwood who, in turn, is a long-time collaborator of our very own Professor and Chair, Dr. Mary Ann Raghanti.

The JSPS works closely with the NSF to help build bridges between Japanese and American researchers. The Washington, D.C. office observed their 30th anniversary in September with a virtual celebration including talks from previous fellows, officers, and representatives from the Japanese embassy. Dr. Tosi was kindly invited, and he gave a presentation on the booming success of our partnership with Kyoto University. The support of the JSPS and the NSF have been critical to the development of our collaborations with our Japanese colleagues. We are profoundly grateful to both agencies.

Alumni Spotlight: Katherine Ford Russell, Ph.D. '96

Our feature program graduate for this issue is Dr. Katherine Russell, who is currently Associate Dean in the College of Behavioral and Social Sciences and Research Professor in the Department of Anthropology at the University of Maryland. She developed an interest in anthropology while obtaining her Bachelor's degree at Harvard in 1985 and during her junior and senior years was also a research assistant in excavations of colonial life at St. Catherines Island, Georgia with Prof. Clark Larsen. After graduation she continued as his graduate assistant at Northern Illinois University where she obtained her M.A. degree in 1987. Clark recommended Kent State to her for her Ph.D. studies, and she joined us that year. As with many of our graduates she studied human gross anatomy at NEOUCOM (as it was known at that time) with Steve Ward and served as a laboratory assistant in the course as well as teaching gross at the Case Western Reserve School of Medicine from 1988 to 1992. She also taught gross anatomy briefly at the Kwame Nkrumah University of Science and Technology in Kumasi, Ghana in 1990. Her research work at Kent State centered around the assessment of age at death and long bone development in both adults and subadults using the Libben and Todd-Haman Collections, and she completed her dissertation with Owen Lovejoy and Rich Meindl in 1996. Her dissertation was "Determination of age-at-death from dental remains." Following graduation, she joined the medical school faculty at the University of Massachusetts at Dartmouth where she served as the course director for the gross anatomy course until 2000. During that time, she was also a member of the Massachusetts (Massport) Mass Disaster Team. She joined the faculty of the University of Maryland in 2001 as Director of Undergraduate Studies in the Department of Psychology. She became Associate Dean of the College of Behavioral and Social Sciences in 2007 and has also served as Associate Director of the Honors College and Executive Coordinator of the Banneker/Key Scholarship Program, which is Maryland's most prestigious merit scholarship for academically talented students. Katherinefordrussellaskew, as she is affectionately known to some of our faculty, joined us for the 2016 reunion organized by Bob Tague and as always delighted everyone with her amazingly positive outlook on just about everything. She presents an exceedingly successful career as a focus of emulation for all of our current students!

Dr. Richard Meindl & Dr. Katherine Russell
(aka Katherinefordrussellaskew)

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