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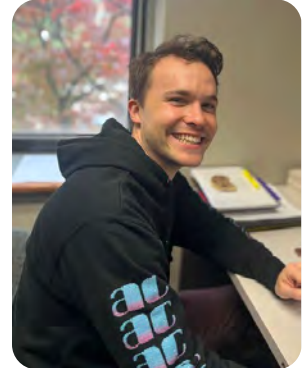
Can you find the black squirrel? Send in your answer and you will be entered into a drawing!

## Inaugural Scholarship Award Winners

We announced the establishment of two student scholarships last year – **The Richard L. Crossman and Fern Crossman Storer Anthropology Scholarship** and the **Richard S. Meindl Distinguished Scholars Award**.



Jacob Baldino



Ryan Strome

Undergraduates **Jacob Baldino** and **Ryan Strome** were the first recipients of **The Richard L. Crossman and Fern Crossman Storer Anthropology Scholarship**. Baldino worked in the experimental archaeology lab during his junior and senior years and just published his first first-authored paper in *Lithic Technology* on clovis spears. He is now a Master's student under Drs. Bebbler and Eren. Strome completed his honor's thesis under Dr. Cimino and is also now a student in our Master's program and is continuing to work with Dr. Cimino..

The first **Richard S. Meindl Distinguished Scholar** was MA student **Michael Bliss**, a member of Dr. Takeshita's lab. During his first year, Bliss applied for, and was awarded, multiple research grants for his summer research project in Ecuador (The Explorer's Club, the American Society of Primatologists, and KSU's Graduate Student Senate). Micheal is studying adrenarche in spider monkeys.





## A Message from the Chair

Dr. Mary Ann Raghanti

**“Shared joy is double joy; shared sorrow is half a sorrow” ~ Swedish proverb**

The last year has been filled with no shortage of reasons to celebrate here in Lowry Hall. Our students, under the tutelage of our amazing faculty, have been flourishing. Our faculty, because they are amazing, continue to dazzle me endlessly.

As I settled in to plan this newsletter, I had the opportunity to review the many successes we’ve enjoyed since the last issue. This reflection always feels me with a sense of pride and accomplishment as I, once again, take a little credit for everything they have done. And now, I share this joy with you because ***shared joy is double joy***.



*Visiting the Cleveland Metroparks Zoo*



*Practicing shutos on front campus*



*Random, but excellent, shot of the felled tree that didn't fit anywhere else*



## Fall of a Titan: Front campus gets a new look

A massive thunderstorm with strong winds tore through Kent, Ohio and surrounding areas the first week of the semester (Thursday, August 22, 2023). When we arrived for work on Friday morning, the view from Lowry Hall was dramatically different.



© Mary McGowan /  
[www.comedywildlife.com](http://www.comedywildlife.com)  
photo



*The tree roots, with Barbara for scale*

The mighty pine tree that stood sentinel in front of Lowry Hall for more than 75 years had fallen. The tree was not evident in photos from Lowry Hall's construction in 1913-14, but it was prominent in photos from the 1950s (below).

We will miss passing under its shadow every day. (although I will not miss cleaning the product of its endless sap showers off my car...).



**Lowry Hall, 1950s**

*(yes, that makes Barbara an official unit of measurement)*

## MeatEater features KSU archaeologists: Do Clovis stone tools cut it (a bison, that is)?

Drs. Bebber and Eren collaborated with Steve Rinella and the crew at MeatEater to find out how an Ice Age stone toolkit would compare to modern tools for butchering a bison.



**From the MeatEater website:** *On a late September day in Montana, a group of my colleagues and I here at MeatEater collaborated with a team of archeologists to butcher a bison using an Ice Age tool kit made of stone. The goal was to create a collection of tools and bones that might help unravel the mystery of how our fellow hunters survived thousands of years ago.*

*Researchers are still analyzing the data collected during this experiment, but we will follow up with the results as soon as the study is published.*

**MeatEater is an outdoor lifestyle company founded by the renowned writer and TV personality Steven Rinella.** Host of the Netflix show MeatEater and The MeatEater Podcast, Rinella has gained wide popularity with hunters and non-hunters alike through his passion for outdoor adventure and wild foods, as well as his strong commitment to conservation. Founded with the belief that a deeper understanding of the natural world enriches all of our lives, MeatEater, Inc. brings together leading influencers in the outdoor space to create premium content experiences and unique apparel and equipment. MeatEater, Inc. is based in Bozeman, MT.

Link to video: <https://www.themeateater.com/conservation/anthropology/butchering-a-bison-with-clovis-points-and-tools>



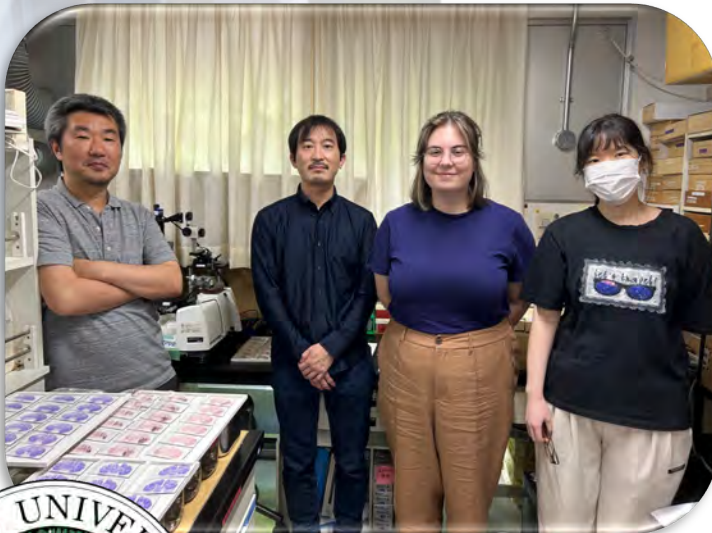
## Research partnerships and study abroad opportunities in Japan

Japan officially opened again in summer 2023 as COVID diminished. Members of KSU Anthropology seized the opportunity to reconnect with friends and collaborators at several universities.

We have a long-standing partnership with the Center for the Evolutionary Origins of Human Behavior (formerly, the “Primate Research Institute”) of Kyoto University. Since 2015, fifteen faculty and students have traveled to Kyoto University for various research projects and presentations. Four students, supported by an NSF-IRES grant to KSU Anthropology, visited in summer 2023. Samantha Magrini and Scott McKinny studied platycnemia in the Jomon skeletal collections housed at the Kyoto University Museum. They worked under the supervision of Dr. Masato Nakatsukasa, an expert in primate postcranial morphology. Dakota Smallridge investigated auditory steady-state responses (ASSRs) in marmosets under the tutelage of Dr. Naho Konoike, a specialist in brain mechanisms controlling emotion and mood. Hannah Maycon researched whether the caudate and putamen receive input from different cortical and subcortical areas of the brain. She worked in the lab group of Dr. Kenichi Inoue, an authority in both cortico-cerebellar and cortico-basal ganglia loop circuits. In addition to their primary research, Samantha, Scott, Dakota, and Hannah studied Japanese language and attended seminars on Japanese society and culture. After nine weeks at Kyoto University, they returned to the U.S. with new scientific expertise (and data!), new language skills, and broadened intercultural understanding.



*Dr. Naho Konoike & Dakota Smallridge*



*Dr. Kenichi Inoue, Dr. Hidetoshi Amita, Hannah Maycon & Yan Gao*



*Scott McKinny, Samantha Magrini, & Dr. Masato Nakatsukasa*



One of the IRES committee members, Dr. Anthony Tosi, accompanied our students to Japan and introduced them to their hosts. While there, he met with Dr. Katsuki Nakamura, the director of the Center for the Evolutionary Origins of Human Behavior, and several other faculty to thank them for supporting the collaborations with KSU and to discuss tentative plans for the 2024 IRES cohort. After several days, he left the Center and traveled to the universities of other Japanese partners. He visited Dr. Seiji Kadowaki, a professor at Nagoya University and long-time friend of KSU Anthropology. Dr. Kadowaki took him on a tour of the archaeological collections at the university's natural history museum, showing him Middle and Upper Paleolithic stone artifacts collected from sites in Jordan and a broad collection of tools, arrowheads, and pottery from the Jomon peoples (14,000 – 300 BC) of ancient Japan. Dr. Kadowaki mentioned that he was inspired by the KSU experimental archaeology laboratory and showed Dr. Tosi a room in the museum where he hoped to build a similar lab. He previously discussed this idea with KSU's Drs. Eren and Bebbler with the intention that there would then be, at least, two such laboratories, leading to more collaborations between Kent State and Nagoya University.

Scientists at other Japanese institutions have also welcomed our students for summer internships, and Dr. Tosi visited these colleagues, too, to thank them for their support. He met Dr. Junya Yamagishi at Hokkaido University, Dr. Masami Izuho at Tokyo Metropolitan University, and Dr. Misato Hayashi at the Japan Monkey Centre. They shared warm stories of working with our students on projects including single-cell RNA analysis, microblade studies, and primate behavior, respectively. Dr. Tosi then traveled to two institutions, Yamaguchi University and Chuo University, with which KSU is hoping to develop exchange programs. The institutional connections originated with meetings between Dr. Tosi and officers at the Japan Society for the Promotion of Science – officers who hold dual positions at the two universities. With the approval of KSU's Office of Global Education, Dr. Tosi met with Japanese administrators and students at Yamaguchi and Chuo to promote new opportunities at Kent State.

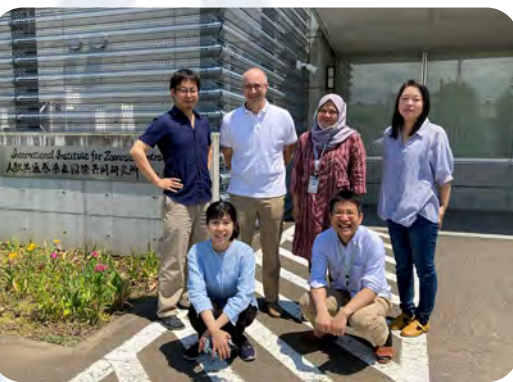
We are deeply grateful to all our Japanese colleagues for their partnership, and to both the U.S. National Science Foundation and the Japan Society for the Promotion of Science for the various grants that support these collaborations.



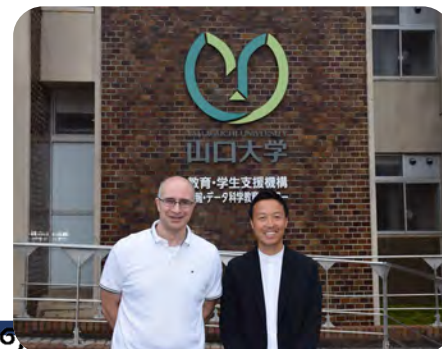
(Left) Dr. Tosi and Ms. Abe (Office of the Faculty of Global Management) at Chuo University. (Right) Dr. Seiji Kadowaki holding ancient Jomon pottery.



At the Commercial Goods Museum, Yamaguchi University. L-R: Ms. Ai Matsunaga, Ms. Kazuko Fukuoka, Dr. Tosi, Dean Sadanori Arimura, Ms. Mami Amamoto.



Researchers at the International Institute for Zoonosis Control, Hokkaido University. Top row (L-R): Dr. Junya Yamagishi, Dr. Anthony Tosi, Dela Ria Nesti, Naoko Kawai. Bottom row (L-R): Dr. Kyoko Hayashida, Dr. Tatsuki Sugi.



(Left) Dr. Masami Izuho and (former KSU undergraduate) Nicholas Gala at Tokyo Metropolitan University. (Right) Dr. Tosi and Mr. Masahiro Ueda (Chief, International Affairs Division) at Yamaguchi University.

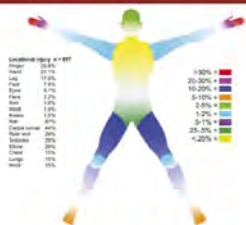


# Flintknapping isn't without risk: Nick Gala's Honors thesis

Written by Jim Maxwell

## AMERICAN ANTIQUITY

Volume 88 • Number 3 • July 2023



They even landed the cover!!

Nicholas Gala, BS '22, completed his honors thesis under the guidance of Dr. Metin Eren. They learned that knapping is far more dangerous than they previously imagined. Their study resulted in a first-author paper for Gala in *American Antiquity*, North America's flagship archaeology journal.

"This study emphasizes how important stone tools would have been to past peoples," Eren said. "They literally would have risked life and limb to make stone tools during a period without Band-Aids, antibiotics or hospitals. But despite those injury costs, past peoples made stone tools anyway – the benefits provided must have been immense."

Dr. Michelle Bebbler collaborated with Gala on how to best visualize and report his data and developed a color-coded figure, which illustrates that injuries are not just limited to the hands. Injury frequency varies, and there are injuries that occur on the entire body, including flintknappers' feet, legs and torso.

"The eye injuries are the most dangerous from my perspective, simply because they seem to be common and could result in loss of sight, which would significantly impact the life of the knapper," Bebbler said. "Stone tools were vital to their daily activities and overall survival. I think overall they were used to a more dangerous lifestyle and also would have had their own ways of treating injuries."



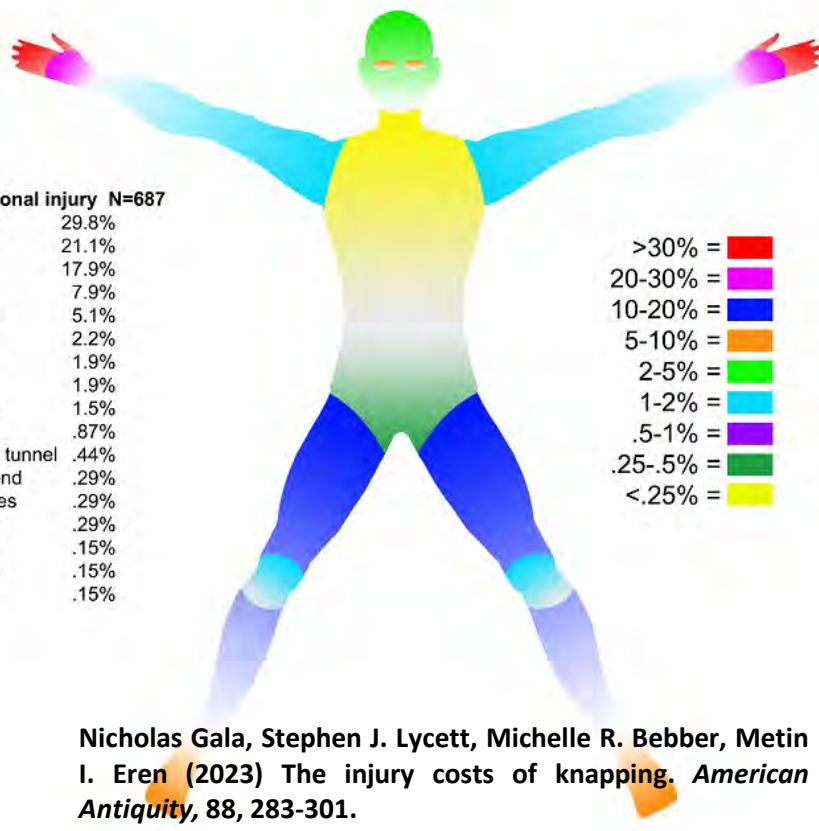
Nicholas Gala  
CLASS OF '22



### Locational injury N=687

Finger	29.8%
Hand	21.1%
Leg	17.9%
Feet	7.9%
Eyes	5.1%
Face	2.2%
Arm	1.9%
Wrist	1.9%
Knees	1.5%
Nail	.87%
Carpal tunnel	.44%
Rear end	.29%
Testicles	.29%
Elbow	.29%
Chest	.15%
Lungs	.15%
Neck	.15%

>30% =	Red
20-30% =	Pink
10-20% =	Blue
5-10% =	Orange
2-5% =	Green
1-2% =	Cyan
.5-1% =	Purple
.25-.5% =	Dark Green
<.25% =	Yellow



Nicholas Gala, Stephen J. Lycett, Michelle R. Bebbler, Metin I. Eren (2023) The injury costs of knapping. *American Antiquity*, 88, 283-301.

# Our Endowed Fund for Doctoral Student Research



**Samantha Magrini, PhD student:** "The funds I received went toward the purchase of a 'Mole 3D Scanner' by 3D MakerPro, for the purpose of 3D surface scanning human bones. The scans are part of a project for which I collected the surface data from a collection housed at Kyoto University in Japan. By scanning the bones, it is possible to analyze the shape using morphometric analysis to investigate the development of morphological changes associated with certain habitual behaviors."



**Danielle Jones, now a PhD!** "My award funded my project titled "Monoamine oxidase-B expression in the human, chimpanzee, and macaque brain throughout development and aging". I am testing whether the enzyme monoamine oxidase-B is elevated in humans compared to chimps and macaques. While levels of this enzyme are known to increase throughout life, especially high levels in humans may help explain our susceptibility to neurodegenerative disease."

**Rose Leach Basom, PhD candidate:** "The generous funding from the PhD Research Award was used to pay for quantification analysis at Vanderbilt University for primate samples that were taken for the final chapter of my dissertation. With this funding, I was able to collect the remaining data needed to complete my PhD!"

**Heather Smith, PhD candidate:** "I am studying how cholinergic cells in the upper brainstem connect the reward pathway with the auditory system. With the lipophilic dyes I was able to acquire through this fund, I am attempting to extend my work in rodents to nonhuman primates to understand species differences in brain evolution."

There were five recipients of the 2022-2023 Research Awards from the Endowed Fund for Doctoral Student Research. This fund was made possible by the tireless efforts of Bob Tague, PhD '86 and the generous donations by so many alumni, faculty, and friends.

**Heather Lawrentz, PhD candidate:** "I study the longitudinal interosseous carpometacarpal ligaments and the role they play in stabilization of the great ape wrist. The Anthropology Endowment Fund has made it possible for me to study these tissues *in vitro* by providing the means to purchase a cadaveric chimpanzee hand – a real treasure in the eyes of a comparative anatomist!"





Andrew Smith, Jaymes Taylor (with sledgehammer) and Israel Hershkovitz. Sledgehammers and picks are necessary here because a stone house above some prehistoric layers must be removed. Mango plantation in the background.



Andrew Smith excavating in the main part of the site under a shade tarp



Adam Norris with one of the many stray cats at the hostel



Dr. Linda Spurlock



## Dr. Linda Spurlock and students travel to Israel

This summer four Kent State students (Jaymes Taylor, Andrew Smith, Adam Norris and Emily Curtis) and Dr. Linda Spurlock worked on the Emireh Cave excavations near Tiberias, Israel (close to the Sea of Galilee). The project sought to better understand, through lithic analysis, the transition from Middle to Upper Paleolithic time periods, and to document 20,000-year-old skeletal remains. Students gained experience in excavation, artifact washing and sorting, and documenting finds in three-dimensional space via a total station.



During time off they visited beaches, nearby nature preserves, Jerusalem, and Capernaum.



Emily Curtis excavating in the main part of the site

## Congratulations to our recent graduates!

**Dr. Morgan Chaney (Tosi)**



**Morgan Chaney:** *Primates, poison, and cytochrome P450: Evolutionary dynamism of the CYP1-3 gene families within the primate order.* Dr. Chaney is now a post doctoral scholar with Dr. Christina Bergey in the Department of Genetics at Rutgers University.

**Dr. Danielle Jones (Raghanti)**



**Danielle Jones:** *A comparative analysis of monoamine oxidase enzymes and cannabinoid receptor 1 among primates.* Dr. Jones is the Women in STEM Program Manager in the Flora Stone Mather Center for Women at Case Western Reserve University.

### The Masters:

**Andrew Smith (2023)** Artifact evolution: Does size matter in reductive manufacturing? (Eren)

**Julie Lierenz (2023)** Dead reckoning: Theory of mind and the perception of human remains (Spurlock)

**Eric Galligan (2023)** A quantitative analysis of corked vs. solid wood baseball bats- swing speed and durability (Eren)

**Lawrence Mukusha (2023)** An experimental microwear approach for understanding microscopic 'length-wise' striations on clovis lithic points (Eren)



## PhD Student Emilee Hart takes Second Place!



Emilee proudly displaying the prototype for her new saliva collection device

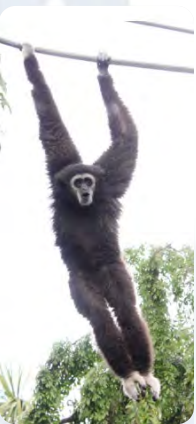


Emilee Hart, Doctoral Candidate in Human Evolutionary Biology in the School of Biomedical Sciences won Second Place in the Three Minute Thesis Competition. Her presentation on 'The Color Changing Gibbon' outlined her dissertation research that she is conducting in Dr. Rafaela Takeshita's lab in the Department of Anthropology.

Emilee's 3MT abstract:

Sexual dichromatism is rare among mammals but is most frequently found in the primates, especially in the Hylobatidae taxonomic group also known as the Small Apes. They are a rare and endangered group of primates found in Southeast Asia. The Northern White-Cheeked Gibbon (*Nomascus leucogenys*) is an example of this sexual dichromatism where the adult males have black fur with white cheeks and the adult females are blonde with black fur around the crown of their head. Did you know that all Northern White-Cheeked Gibbon infants regardless of sex are born blond matching the mother? At around a year old, both sexes will turn to that typical black fur color pattern with the white cheeks seen in the adult males. Emilee's dissertation research examines the endocrine life history of these gibbons and she hypothesizes that these color changes are caused by hormones, specifically DHEAS.

Humans, and many other primates like these gibbons, have the typical sex hormones such as estrogen and testosterone that derive from the gonads, but primates also have a certain amount of adrenally derived sex hormones. In the primate adrenal, there is a mutation that has resulted in the adrenal production of this pro-hormone, DHEAS, which then goes on to convert into those adrenally derived sex hormones. How is this all related? Well, in development there are two developmental stages of the adrenal gland that produces this DHEAS. This development and activation of the adrenal gland is also known as 'adrenarche' and has only ever been identified in the Great Apes including humans so far, but Emilee believes delayed adrenarche is also present in Lesser apes.



# Atlatl weapon use by prehistoric females equalized the division of labor while hunting

by Jim Maxwell

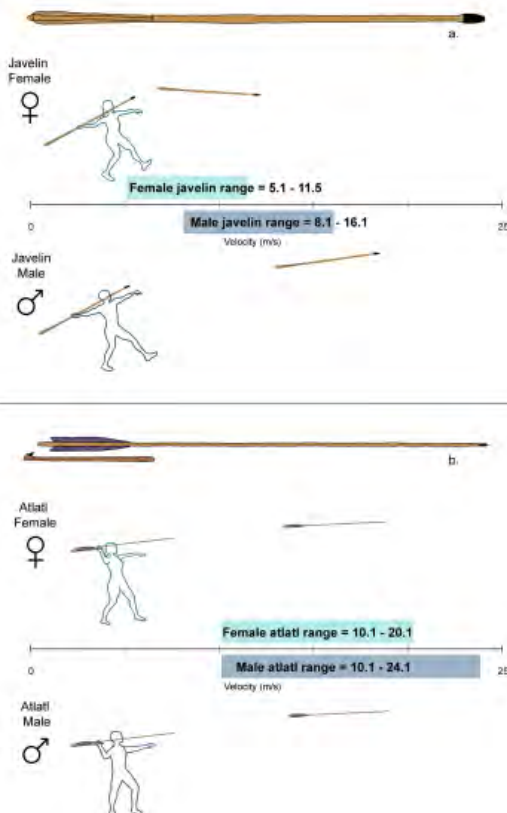


Dr. Michelle Bebbler led a study [“Atlatl use equalizes female and male projectile weapon velocity,”](#) published in the journal Nature: Scientific Reports.

The atlatl is a handheld, rod-shaped device that employs leverage to launch a dart, and represents a major human technological innovation used in hunting and warfare since the Stone Age. The first javelins are at least hundreds of thousands of years old; the first atlatls are likely at least tens of thousands of years old.

“One hypothesis for forager atlatl adoption over its presumed predecessor, the thrown javelin, is that a diverse array of people could achieve equal performance results, thereby facilitating inclusive participation of more people in hunting activities,” Bebbler said.

Bebbler’s study tested this hypothesis via a systematic assessment of 2,160 weapon launch events by 108 people, all novices, (many of which were Kent State students) who used both javelins and atlatls. The results are consistent with the “atlatl equalizer hypothesis”, showing that the atlatl not only increases the velocity of projectile weapons relative to thrown javelins, but that the atlatl equalizes the velocity of female- and male-launched projectiles.



“This result indicates that a javelin to atlatl transition would have promoted a unification, rather than division, of labor,” Bebbler said. “Our results suggest that female and male interments with atlatl weaponry should be interpreted similarly, and in some archaeological contexts females could have been the atlatl’s inventor.”

“Many people tend to view women in the past as passive and that only males were hunters, but increasingly that does not seem to be the case,” Bebbler said. “Indeed, and perhaps most importantly, there seems to be a growing consilience among different fields – archaeology, ethnography, and now modern experiments – that women were likely active and successful hunters of game, big and small.”

Since 2019, every semester Bebbler takes her class outside to use the atlatl. She noticed that females picked it up very easily and could launch darts as far as the males with little effort.

“Often males became frustrated because they were trying too hard and attempting to use their strength to launch the darts,” Bebbler said. “However, since the atlatl functions as a simple lever, it reduces the advantage of male’s generally greater muscle strength.”

“Given that females appear to benefit the most from atlatl use, it is certainly within the realm of possibility that in some contexts females invented the atlatl,” Bebbler said. “Likewise, in some primate species, females invent tool technologies for hunting as documented amongst the Fongoli chimpanzees.”



## Dr. Melissa Edler receives (another!) NIH award to study Alzheimer's Disease

Researchers from Kent State University and The University of Texas MD Anderson Cancer Center were recently awarded a two-year National Institute on Aging grant (1R21AG080216-01) for \$625,478. Supported by the National Institutes of Health's Alzheimer's Disease Initiative funds, **Dr. Melissa K. Edler**, research assistant professor in the Department of Anthropology at Kent State, will investigate the effects of age and Alzheimer's disease (AD) pathology on neurotransmitter gene and protein expression in postmortem chimpanzee brains.

Older apes experience mild decline in cognition and motor skills, and their brains bear remarkable similarities to elderly humans. Chimpanzees also exhibit the pathologic lesions observed in the brains of AD patients, but in contrast to humans, they lack significant cell loss and dementia symptoms. These findings indicate a specific vulnerability in humans or a protective mechanism in chimpanzees. Therefore, examining age and species alterations in neurotransmitters may elucidate why chimpanzees lack severe cognitive decline despite the presence of AD lesions.

In addition, co-investigator Dr. William D. Hopkins, professor and interim director and chair of the Department of Comparative Medicine at The University of Texas MD Anderson Cancer Center, will assess age-associated changes in cognition, motor, and social tasks in a cohort of captive geriatric chimpanzees. Together, Edler and Hopkins will identify if age-related behavioral changes are associated with modifications in neurotransmitter levels in chimpanzees.

This work will fill a crucial gap in our evolutionary knowledge of the influence of aging and AD pathology on neurotransmitters in chimpanzees, our closest living relative. Moreover, this study will provide a unique opportunity to examine cognitive, motor, and social variation between aging chimpanzees and humans.



# Wired for Gluttony

What REALLY makes us human

PNAS

Raghanti, MA, Miller, EN, Jones, DN, Smith, HN, Munger, EL, Edler, MK, Phillips, KA, Hopkins, WD, Hof, PR, Sherwood, CC, Lovejoy, CO (2023) Hedonic eating, obesity, and addiction result from increased neuropeptide Y in the nucleus accumbens during human brain evolution. *PNAS*, 120 e2311118120

Increased neuropeptide Y in the nucleus accumbens of humans relative to other primates may partly explain human susceptibility to hedonic eating, obesity, and addiction, a study finds.

The nucleus accumbens is a brain region that is central to food intake, reward and motivation, social and sexual behavior, and substance abuse. Within the nucleus accumbens, neuropeptide Y plays a role in reward and is involved in emotional behavior, alcohol and drug addiction, and fat intake. To shed light on human brain evolution, Mary Ann Raghanti, C. Owen Lovejoy, and colleagues performed a comparative analysis of neuropeptide Y within the nucleus accumbens across a wide range of primate species, including humans, great apes, and monkeys. The results revealed that neuropeptide Y innervation – the ratio of nerve fibers relative to neurons -- is greater in the human nucleus accumbens compared to all other primate brain regions examined. According to the authors, increased neuropeptide Y within the human nucleus accumbens may have played a role in rendering humans exceptionally vulnerable to eating disorders and substance abuse. Moreover, an increase in neuropeptide Y-driven fat intake may have provided critical nutrients for brain expansion, potentially increasing the reward pathway's responsiveness to various targets, and likely representing a central creative force throughout human evolution during the past several million years.

~Janelle Weaver, Freelance science writer for PNAS

*We provided several options for the issue's cover art. None were chosen. They also changed the title to remove 'wired for gluttony'. "Philistines", to quote Robert Sapolsky. Lovejoy preferred the stark stack of donuts (lower image). Raghanti favored the more anatomical perspective (top).*

## TRIVIA Question

Our official mascot is Flash the Golden Eagle. Which of the following was NEVER a Kent State mascot?

- a) Dalmation
- b) Silver fox
- c) Cave Man
- d) Horse



Find the answer on the last page



*American Antiquity* (2023), 88, 144–162  
doi:10.1017/aaq.2023.6

## ARTICLE

# Building the Ohio Hopewell Chronology: An Incremental Approach to Historical Reckoning

Mark F. Seeman<sup>1</sup>  and Kevin C. Nolan<sup>2</sup> 

<sup>1</sup>Department of Anthropology, Kent State University, Kent, OH, USA, and <sup>2</sup>Applied Anthropology Laboratories, College of Sciences and Humanities, Ball State University, Muncie, IN, USA

**Corresponding author:** Mark F. Seeman, Email: [mseeman@kent.edu](mailto:mseeman@kent.edu)

(Received 27 July 2022; revised 27 November 2022; accepted 22 January 2023)



## Abstract

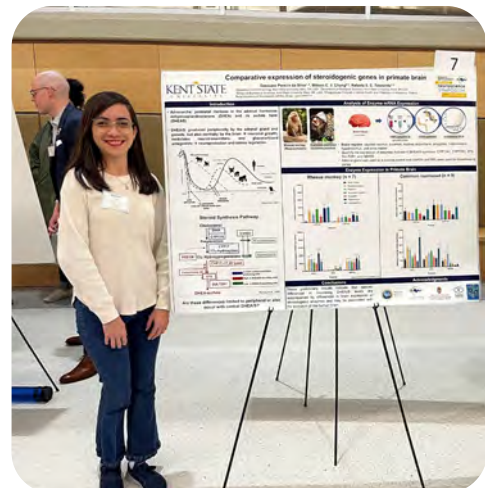
Ohio Hopewell is an archaeological concept that is known worldwide but that suffers from “a disarray of radiocarbon results” (Lynott 2015:60). Here, we establish a comprehensive dataset of 425 14C dates from Ohio Hopewell sites and apply formal chronometric hygiene criteria to all dates. We then iteratively assess the temporal placement and span of the six most important Ohio Hopewell sites—the Hopewell Mound Group, Liberty, Mound City, Seip, Tremper, and Turner. A staged relaxation of hygiene criteria for our best three categories (Classes 1–3) permits alternate but generally consistent conclusions. As the first large-scale analyses of Ohio Hopewell temporality since the publication of IntCal20 (Reimer et al. 2020), the available data show a ritual complex that begins 90 or more years later than generally has been recognized circa 2010 14C BP, or as Bayesian modeled, AD 90–120. Our analysis reveals site histories of differing spans, more late dates than early dates, and with most Hopewell activity ending across these sites circa 1640 14C BP, or as Bayesian modeled, AD 395–430. An increased consideration of contingency in contemporary temporal reckoning increases the utility of the historical narratives that we as archaeologists can construct.



## Meet Visiting Researcher Gessiane Pereira from Brazil

Gessiane Pereira joined the Takeshita lab at Kent State University in 2022 as a visiting scholar to work on part of her PhD dissertation entitled: "Monitoring senescence and stress levels in neotropical primates". Gessi has a Bachelor's degree in veterinary medicine and a Master's degree in diagnostic imaging techniques from the Federal Rural University of Amazon (UFRA), Brazil. She successfully defended her dissertation in 2023 and is now Dr. Pereira!

She received funding to cover her travel expenses and stipend from the Brazilian agency Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) and she worked on enzyme immunoassays, PCR, and qPCR techniques. While here, she attended two academic conferences: Midwest Primate Interest Group (Ann Arbor, MI) where she presented a project from her dissertation, and the BHRI neuroscience symposium, where she presented preliminary data on the PCR work that she did here. Her BHRI poster, entitled, "Comparative expression of steroidogenic genes in primate brain" was awarded second place!



Drs. Eren, Bebbber, and colleagues from the University of Cambridge, University of Buffalo, University of Tulsa, the Polar Rock Institute in Columbus, and the British Antarctic Survey published a paper in *Antiquity* that was featured in *The Economist*. The multidisciplinary team demonstrated that stone tool lookalikes occur in Antarctica -- a place we know Stone Age humans did not inhabit. If "stone tools" can occur via geological and other natural processes in Antarctica, then geological and other natural processes have likely produced "stone tools" around the world. If so, then many early archaeological sites in Africa, Europe, Asia, Australia, and the Americas recognized by the presence of stone tools may not be archaeological at all.

ANTIQUITY 2023 Vol. 97 (392): 472–482

<https://doi.org/10.15184/aqy.2023.4>

## Research Article



## Antarctica as a 'natural laboratory' for the critical assessment of the archaeological validity of early stone tool sites

Metin I. Eren<sup>1,2,\*</sup>, Michelle R. Bebbber<sup>1</sup>, Briggs Buchanan<sup>3</sup>, Anne Grunow<sup>4</sup>, Alastair Key<sup>5,\*</sup>, Stephen J. Lycett<sup>6</sup>, Erica Maletic<sup>4</sup> & Teal R. Riley<sup>7</sup>

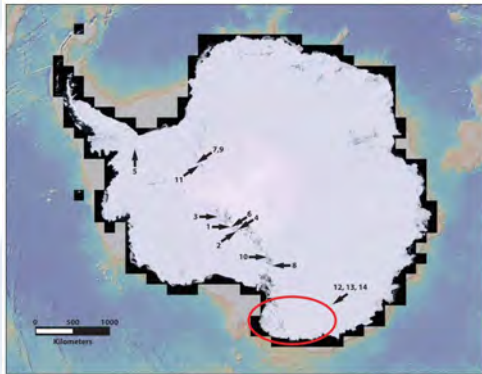
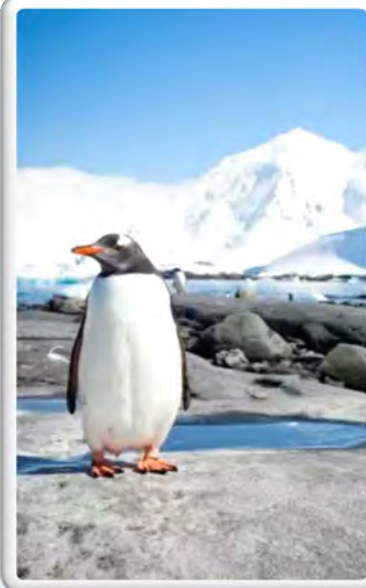


Figure 3. The geographic locations where the presented specimens were collected. For specimen identification, see Table 1. Source of base map: Polar Rock Repository (<https://prr.iam.edu/>) (figure produced by M.I. Eren).



The process of choosing the right materials is arduous



Rare photo of Master flintknapper Peter P. Penguin

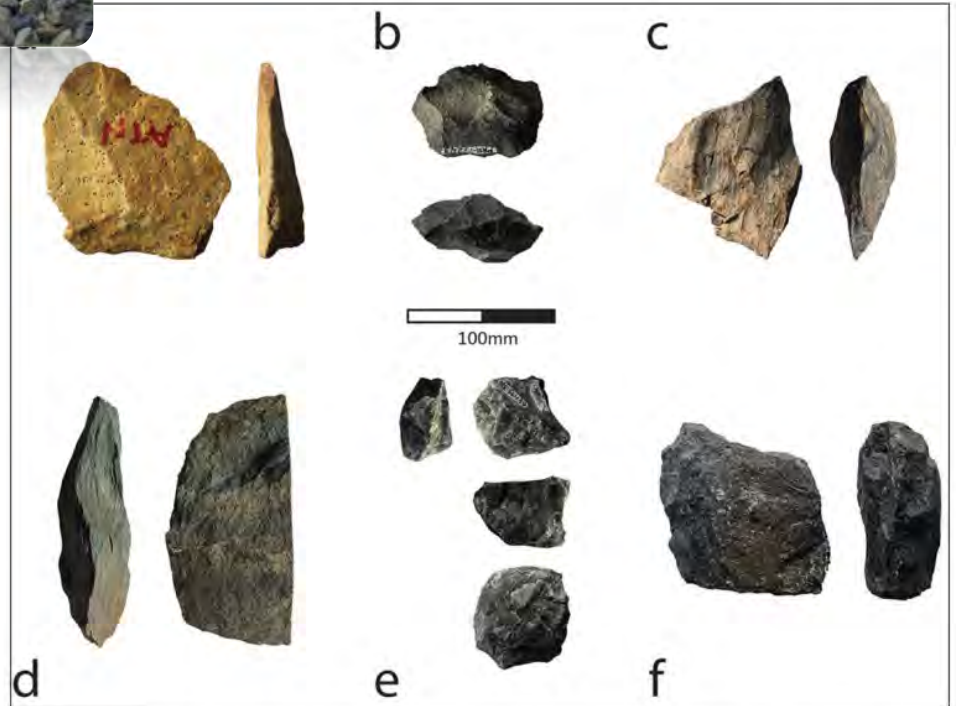


Figure 2. Examples of Antarctic rock samples that bear resemblance to proposed human- or non-human primate-made stone tools: a) PRR-37153, 'large flake'; b) PRR-17243, 'discoid core'; c) PRR-37115, 'core'; d) PRR-23389, 'biface'; e) PRR-56439, 'bipolar core'; f) PRR-34869, 'chopper'. For more specimens and images, see the online supplementary material (OSM) (figure produced by M.I. Eren and M.R. Bebbber).



## Alumni Spotlight: Scott Simpson, Ph.D. '92



Our feature program graduate for this issue is Dr. Scott Simpson, who is currently Professor of Anatomy at Case Western Reserve University in Cleveland. Scott developed an interest in the biological aspects of anthropology while an undergraduate at the University of New Hampshire and started his MA work at KSU in 1981. His earlier work was on survivorship on the Georgia Coast where he developed a special interest in how teeth can supply critical data about growth and survivorship, and where he earned an early award for displaying “the most savage tan”. His work focused on dental defects as a measure of biological stress. He soon followed with a number of papers on a variety of dental issues which have remained his primary area of study to date, although his work has branched widely and has now included major field work in Ethiopia as well. His KSU dissertation demonstrated that canine eruption times are similar in humans and earlier hominids (especially *Australopithecus afarensis*) and distinct from the patterns seen in Chimpanzees and Gorillas where the canine, serving as the “social tooth”, is the last to erupt because it signals the individual’s initiation into the aggressive role of males in polygynous social configurations. While his first position after graduation took him to a gross anatomy position away from Northern Ohio (to Palmer College in Davenport, Iowa) he returned almost immediately (1994) to the CWRU medical school where is now Professor. He has been a primary member of the “Ardi Team” that published a series of papers on *Ardipithecus ramidus* in 2009 (declared the “Science Breakthrough of the Year” by the journal *Science*). Those publications were fostered by two world trips to various sites in Europe and Africa aboard the “Getty Jet” (a private Boeing 727 belonging to Gordon and Ann Getty). Scott was credited with the most insightful comment concerning those journeys as “I didn’t know this much marble could fly”. While he has long served as a major component of the field team responsible for the recovery and publication of Ardi from the Middle Awash, he has also been a member of another team searching for early hominids (hominins if we must) in the close by Gona region, also from the Afar, where he recovered another critically important specimen—an adult female pelvis of *Homo erectus*. That same Gona team has recovered additional important specimens of the postcranium of *Ardipithecus* as well. His work on the postcranium led him to publish a recent major paper on the selective “purpose” of knuckle walking in apes in the *The Anatomical Record*. He has now published over 60 papers and book chapters and has recently co-edited a book on the *Latest Methods in Reconstructing Cenozoic Terrestrial Environments and Ecological Communities*, with Springer. He recently returned from yet another tour of Ethiopian fossils in Addis. His special interests include camping and wine.

**TRIVIA ANSWER**  
Dalmation  
(It was once a golden retriever though)

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