

The Natural Inquirer



FORT HAYS STATE UNIVERSITY DEPARTMENT OF BIOLOGICAL SCIENCES

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Fall Semester, 2023

Dr. Gene Fleharty wins 2023 homecoming award

Dr. Eugene "Gene" Fleharty was presented the Nita M. Landrum Award for his contributions to FHSU and its community over his 37 years of service. Established in 1994, the Nita M. Landrum Award recognizes alumni or friends who have provided sustained volunteer service for the betterment of the FHSU Alumni community and/or the university.

During his time as a professor in the FHSU Biology department, Dr. Fleharty mentored 52 graduate students earning their master's degrees, and served as department chair for 11 years. He received the Pilot Award in 1991 and the President's Distinguished Scholar Award in 1990. Alongside Dr. Gary Hulett, Dr. Fleharty helped create "Can Man Survive?" an extremely popular course exploring the interactions of humans and the environment. Today, many former students still express how the course changed their lives.



Dr. Fleharty retired in 1999 but continued supporting FHSU by volunteering at the FHSU Foundation phone-a-thon, and by establishing several funds to assist FHSU students. In support of the FHSU softball complex, Dr. Fleharty and his brothers donated funds to build new bleachers, and he and his wife donated funding for artificial turf. Dr. Fleharty also established the Fleharty Fellowship as a competitive scholarship that supports two Biology graduate students per year with a stipend and tuition waiver.

In conjunction with the Fall alumni awards, **Dr. Fleharty** and **Dr. Hulett** visited the Biology department on September 28th to speak about their "Can Man Survive?" course, and their views on the changing landscape of Biology education.



Michaela Sielaff (M.S. 2023) leads a Junior Museum Explorer science camp hike on the Reynold's Nature Trail at Sternberg Museum, June 23rd, 2023.



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Meetings and Presentations

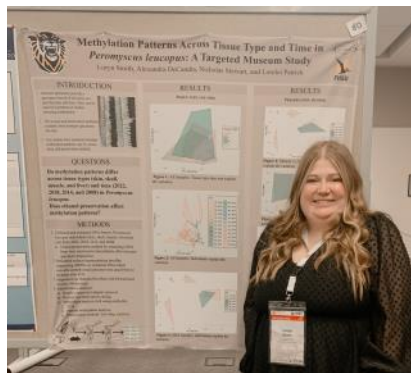
American Ornithological Society and Canadian Society of Ornithologists Joint Meeting, London, Ontario, Canada, August 7-12, 2023.

Brandt, S., and M. Ambardar. Relationships between environmental stressors and Cliff Swallow (*Petrochelidon pyrrhonota*) feather coloration and colony size (Poster).

Kansas Ornithological Society Fall Meeting, Hays, KS, October 6-8, 2023.

Ambardar, M. A preliminary evaluation of bird-window collisions on a college campus (Oral presentation).

Brandt, S., and M. Ambardar. Relationships between environmental stressors and Cliff Swallow (*Petrochelidon pyrrhonota*) feather coloration and colony size (Oral presentation).



9th Canadian Conference on Epigenetics, Banff, Alberta, Canada, November 13-16, 2023.

Smith, L., A. DeCandia, N. Stewart, and L. Patrick. Methylation patterns across tissue type and time in *Peromyscus leucopus*: A targeted museum study (poster).



Christmas Bird Count 2023:

“The Christmas Bird Count took place on December 16. We had 12 participants, including four FHSU biology students, three FHSU faculty/staff members, and members of the Hays community. We saw a total of 54 species, with highlights including Fox Sparrow, Harris's Sparrow, Northern Mockingbird, and Loggerhead Shrike. It was the warmest Hays Christmas Bird Count that I can remember! It also rained a fair bit the couple days beforehand, which made some roads sticky. Overall it was a great day!”

-Dr. Medhavi Ambardar

Publications:

Patrick, L. E., J. M. Duggan, and L. Dizney. 2023. Integrating evidence-based teaching practices into the Mammalogy classroom. *Journal of Mammalogy* 104(4):685–695. <https://doi.org/10.1093/jmammal/gyad011>

Flaherty, E. A., H. C. Lanier, J. Varner, J. M. Duggan, S. Beckmann, C. J. Yahnke, L. P. Erb, **L. E. Patrick**, L. Dizney, K. E. Munroe, and P. K. Connors. 2023. Teaching Mammalogy in the 21st century: advances in undergraduate education. *Journal of Mammalogy*, Volume 104(4): 655–666. <https://doi.org/10.1093/jmammal/gyac121>

Elliott, N. C., K. L. Giles, K. A. Baum, **S. D. Elzay**, and G. F. Backoulou. 2023. Role of parasitoids and landscape structure in aphid population dynamics in winter canola. *Biological Control* 186:105330.

Sandhi, R. K., V. Pickens, E. Bello, **S. Elzay**, et al. 2023. Entomology beyond research and education: 2022 student debates. *Journal of Insect Science* 23(3):1-8. <https://doi.org/10.1093/jisesa/iead036>

Elliott, N. C., K. L. Giles, K. A. Baum, and **S. D. Elzay**. 2023. Quantitative study of aphid natural enemies in central Oklahoma canola fields. *Southwestern Entomologist* 47(4):821-828. <https://doi.org/10.3958/059.047.0403>



On November 9th, Dr. Michael Gruenstaedl's Botany class toured the Elam Bartholomew herbarium collections at Sternberg Museum with Professor emeritus Dr. Joe Thomasson.



Biology students and faculty conduct field research at Fort Leavenworth Military Base.



L-r: Nora Lazerus, Jacob Alexander, and Dr. Bill Stark

Dr. Bill Stark, instructor Nora Lazerus, graduate student Jacob Alexander, and undergraduate student Isaac Fox, in partnership with the U.S. Department of Defense, have been documenting small mammal, reptile, amphibian, and insect populations located on the Fort Leavenworth Military Base, in Leavenworth County, KS.

Ecological surveys continued throughout the summer as part of Alexander's M.S. research project. The group routinely checked 150 mammal traps and arrays of insect pitfall traps. Preliminary herpetology surveys involved walking through forested areas looking for reptiles and amphibians, in preparation for more



extensive surveys in the future. The study will also compare native vegetation areas to those with non-native vegetation.

Fort Leavenworth plans to construct a wetland in the lower Missouri River basin area, but local species must be inventoried before construction can begin. "It's a really good opportunity for us to support some student research ac-



Isaac Fox works on insect identification at Sternberg Museum.

tivity and also to help the Department of Defense meet their mandates. They have to consider environmental impacts as they modify and use the resources on the military base," Dr. Stark said.

Before this study, the most recent records of reptiles and amphibians on base date back to the late 1930s and 1940s. The most recent mammal records are from the 1950s.

"Usually, you want to keep a five or ten-year cycle on documenting specimens," Alexander said. "Timely monitoring makes it possible to identify changes that occur and allow us to investigate why the change occurred." Depending on grant funding, the Biology department's partnership with Fort Leavenworth Military base could continue for several years. (courtesy of Tiger Media Network).

Welcome to our newest faculty member, Dr. Ifelayo Adefuye!

Dr. Adefuye's research interests include cancer biology and bioinformatics.



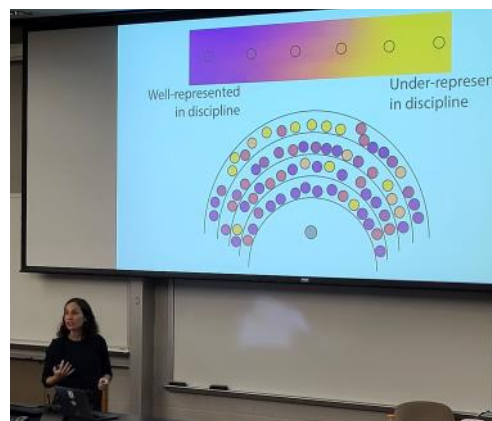
"My academic journey began at King's College London, where I delved into the captivating field of pharmacology. Eager to deepen my expertise, I then pursued a master's degree in Drug Discovery at the Medway School of Pharmacy in Kent, UK. This experience not only honed my skills but also immersed me in the dynamic and innovative sphere of pharmaceutical research.

My insatiable curiosity about biological systems led me to Rutgers, The State University of New Jersey, where I pursued a Ph.D. in Bioinformatics. This field was a perfect fusion of my passion for biology and the technological advancements of the digital era. The challenging program provided me with not just a degree, but a new perspective on the interplay between biology and information technology.

Throughout my career, I have taught various biomedical science courses at different universities, including Bioinformatics, Genetics, Molecular Biology, and Anatomy and Physiology. The year 2023 marked a significant turn in my career as I joined FHSU. This move represented not just a change in location, but a new chapter in my professional life. At FHSU, I teach Anatomy and Physiology, Cancer Biology, and other related subjects. My research is centered on cancer, utilizing bioinformatics and computational tools to unravel complex biological mysteries.

Outside the academic realm, my life is filled with different kinds of adventures. Family road trips offer me a sanctuary, a way to step away from academia and indulge in the joys of exploration. These journeys with my loved ones are not mere travels; they are cherished episodes in my life's story, replete with laughter, discovery, and invaluable memories".

On October 26th, Dr. Cissy Ballen from Auburn University presented "Promoting Equitable Classrooms by Humanizing Science".



In November, Chris Crawford (B.S. 2022) visited the Biology department's weekly journal club from Wichita, KS. Chris is currently attending the Kansas College of Osteopathic Medicine, and returned to talk with pre-med students about his experiences in medical school.

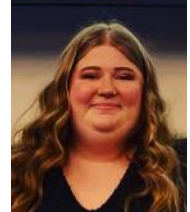
Grad Student News:

Congratulations to Mackenzie and Loryn, who completed their Master's Degrees!

Mackenzie Reh ("Creating a comprehensive life history account for Chthuhuan green toads, *Anaxyrus debilis*, in western Kansas range"). Mackenzie has accepted a position with Kansas Department of Wildlife and Parks as the Director of the Pratt Education Center and Museum.



Loryn Smith ("Methylation patterns across tissue type and time in *Peromyscus leucopus*: A targeted museum study").



And congrats also to **Sonja Brandt**, who passed her oral exams this semester!

Brendon Mason (M.S. 2024) has accepted a position as an Aquatic Biodiversity Biologist with the Kansas Department of Wildlife and Parks in Pratt, KS. He will lead survey crews across the state, sampling various watersheds for fishes, freshwater mussels, and other invertebrates. These surveys are performed so that KDWP can monitor populations of these organisms and determine if aquatic communities are changing over time. This information will help state and federal personnel make decisions on management, and reintroduction efforts of species in need of conservation that exist within Kansas.

Other student news:

Reegan Geer (B.S. 2023) has accepted a position as a Water Specialist Coordinator at Sac & Fox Nation in Reserve, Kansas. As an undergraduate, Reegan worked as a student ambassador for FHSU admissions.

Congratulations to these students, who have been accepted to professional programs:

Evann Deal (B.S. 2024), accepted into the Physician Associate Program at Wichita State University.

Baylee McKenna (B.S. 2024), accepted into the Occupational Therapy program at the University of Kansas Medical Center.

Oktoberfest

Biology club members (l-r) Audrey Rymer, Jonathan Ferguson, Jaden Carlson, and Kyler Semrad sell t-shirts and cold drinks while working at the Biology club booth during Oktoberfest on September 29th.



The Werth College of Science, Technology, and Mathematics fall 2023 awards all went to Biology faculty members this year.



Dr. Medhavi Ambardar received the Outstanding Service Award, **Hilary Gillock** received the Outstanding Teaching Award, and **Dr. Lori Patrick** received the Outstanding Scholarship Award.

Dr. Medhavi Ambardar was recognized for her contributions to the State of India's Birds report. The report compiles data from 30,000 birdwatchers, including Dr. Ambardar's eBird platform observations conducted while she visited India in 2017. The report describes trends in bird ranges and abundance over long and short-term time periods, to help identify species of conservation priority in India.



Alumni News:



Dr. Whitney Taylor (B.S. 2013) has accepted a Cardiothoracic Surgery fellowship with Allegheny Health Network in Pittsburgh, PA. Dr. Taylor graduated from KU School of Medicine in 2018, and completed her surgical residency at University of Arkansas for Medical Sciences in 2023.



Dr. Tej Man Temang (M.S. 2016) has accepted a position as Assistant Professor of Environmental Horticulture at York College of PA (Spring Garden Township, PA).

Katie Flax (B.S. 2017) spoke at the 2023 Noyce Summit in Washington, DC as a member of the "Voices from the Field" panel. Katie currently works as the Math teacher for Western Plains Junior High and High School in Ransom, KS.

<https://www.nsfnoyce.org/profiles/flax-katie/>

<https://www.nsfnoyce.org/2023-noyce-summit/>



Dr. Lori Patrick took her Mammalogy class on a field trip to Smoky Valley Ranch in September. With assistance from SVR Director Justin Roemer (M.S. 2019), the students live-trapped small mammals, deployed trail cams, and set up mist nets to survey bats in the area.

Sternberg Museum of Natural History welcomes new collections manager

The Sternberg Museum of Natural History welcomes **Dr. Jackson Roberts** as the new zoology collections manager. "We are excited for Jackson to join us because he fits into the culture and personalities we have at the museum," said Sternberg Director Reese Barrick. "It's not every day that you find somebody who's excited that our museum has rattlesnakes. We look forward to welcoming him and his family to Hays."



Barrick said Roberts will assume the position left vacant after the untimely death of Curtis Schmidt, who held the position from 2011-2022. Roberts will oversee the care and management of Sternberg's extensive and growing zoological collections, which include: Herpetology (16,000+ specimens), Mammalogy (45,000+ specimens plus 2 holotypes), Ichthyology (750,000 specimens), Ornithology (4,500 specimens), Mussels (5,000+) and Entomology (100,000+ insects). Collections consist of fluid-preserved specimens, skins, dry skeletons, histological, and frozen tissues. The collections focus on the Great Plains of the U.S.

"My family and I are beyond excited to join the Sternberg family," Roberts said. "As Sternberg's new zoology collections manager, I am incredibly lucky to continue the legacy for which the Sternberg's live and research collections are known, as well as expand the volume and access to the collections to connect the community with the amazing biodiversity of the Great Plains."

As an undergraduate, Roberts worked with Dr. Michael Collins at Rhodes College in Memphis, TN, surveying southeastern birds for avian malaria. He earned his M.S. degree from Auburn University in Auburn, AL, with Dr. Ash Bullard focused on trematode parasites of freshwater turtles. His PhD research at Louisiana State University focused on the systematics and taxonomy of New Guinean snakes, specifically two different groups: the New Guinea Worm-eating Snakes (Elapidae: Toxicocalamus) and the New Guinea Keelbacks (Natricidae: Tropidonophis). At LSU, he contributed to the Museum of Natural Science through outreach, research, and continued growth of the collection.



Dr. Medhavi Ambardar and Hilary Gillock were interviewed in June for the Tiger Media Network article, "Understanding this spring's moth invasion" by Lauren Becker.

<https://tigermedianet.com/?p=73178>



Biology department faculty in August, 2023.

(l-r): Dr. Michael Gruenstaeudl, Dr. Rob Channell, Dr. Ifelayo Adefuye, Dr. Sarah Elzay, Dr. Amanda Adams Tarailo, Dr. David Tarailo, Dr. Lori Patrick, Ms. Nora Lazerus, Ms. Hilary Gillock, Dr. Eric Gillock, Dr. Claudia Carvalho, Dr. Matt Galliard, Dr. Bill Stark, Dr. Tara Phelps-Durr (chair), Ms. Diana Staab, and Dr. Chris Bennett. Not pictured: Dr. Medhavi Ambardar. Photo by Peony Weber.

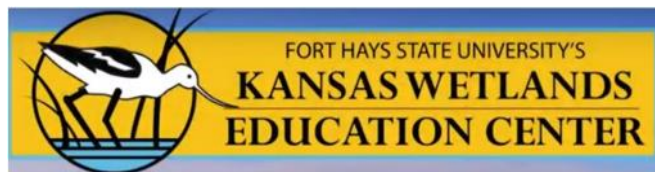


Dr. Michael Gruenstaeudl's Bioinformatics class works on a project together.



Dr. Michael Gruenstaeudl's Botany lab examines plants on campus.

Dr. Michael Gruenstaeudl's Botany class collects algae samples from Big Creek in November.



Middle and High School students participating in Field Biology Day Camp on July 21 banded doves with Tom Bidrowski (KDWP Migratory Game Bird Specialist), installed Wood Duck Houses at Cheyenne Bottoms with KDWP manager Jason Wagner, and learned about the Cliff Swallow research project from Biology Graduate Assistant **Sonja Brandt**.



KWEC held their annual **Butterfly Festival** on September 23. Activities included catching, tagging, and releasing monarch butterflies, and launching flower seed "bombs"!



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