

The Natural Inquirer



FORT HAYS STATE UNIVERSITY DEPARTMENT OF BIOLOGICAL SCIENCES

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Biology graduate accepted to multiple medical school programs



Mark Faber has been accepted to medical schools at the University of Kansas, Arizona State University, Washington University in St. Louis, UCLA, University of Nebraska, and Duke University in Durham NC. Mark plans to attend Duke University School of Medicine, starting in Mid-July, 2022.

Mark graduated from FHSU in May 2021 with a B.S. in Biology/Health Professions and minors in Psychology and Chemistry. He is currently enrolled in the graduate program in Biology. Mark also served as FHSU student body president, and competed in pole vault with men's track and field. His hometown is Colby, KS.

Mark recently took time to answer some questions for The Natural Inquirer:

Q1. Were there any classes at FHSU that stood out as really beneficial, as you were preparing to apply to medical school? Did you have a favorite class?

A: "There were several classes that I thought were beneficial as I prepared for medical school and primarily the MCAT (Medical College Admissions Test). The first was Genetics as I felt like I learned a lot of the tested information in that class, and I was extremely impressed with Dr. Stewart's use of open educational resources and the number of different tools that he utilized to ensure that students were able to learn in the most efficient way for them. (Quite honestly impressed across the board with the biology department's use of OER). Dr. Stewart made sure to post videos, articles, and homework problems on top of his lectures. This meant that no matter the circumstance I had resources available to answer my own questions as I progressed through the class. Other classes that were beneficial for my preparation were Biochemistry (with Dr. Balthazor), Physics (with Dr. Buffington), and Embryology (with Dr. Bennett). Each of these classes was taught by a teacher that I greatly respect and who went out of their way to make sure that each student understood the content."

Q2: What extra-curricular activities did you participate in that you feel helped your chances?

A: "The most impactful involvements that I felt affected my application and its competitiveness were the American Healthy Heart Association, Student Government Association, and Athletics. I was a co-founder of AHHA with Anthony Ventura and through it, we gained a large student organization size and worked hard to solve problems that we found on the FHSU campus. One such issue that we worked to solve was

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for insulin-dependent students to have access to affordable insulin. We set into place the Insulin Aid Program and moreover, we had many guest speakers that were able to broaden our education to real-world experiences and careers. Through SGA I made some incredible connections with other high achieving students as well as with the FHSU administration. It increased my public speaking abilities, which I believe correlated to my ability to interview well when I received interviews with several different medical schools.

Athletics pushed me both physically and mentally, as a pole vaulter I often tell people that it is 90% mental and the other 10% is in your head. What I mean by this is that everyone is athletic in collegiate sports, but what truly sets an incredible pole vaulter apart is the mindset to continually work at the technique that is quite difficult to perfect. Pole vaulting grew my ability to positively think about all situations, helped me persevere in the face of adversity, and it taught me to give my all in whatever it is that I am doing. (Pole vaulting does not go well if you only give 80%)."

Q3: Do you have any words of advice for our current Health Professions students?

A: "My words of advice come from the experience of doubt that I had in myself throughout my undergrad. I continually thought that I would not be competitive once I decided to apply for medical school. The truth is that anyone can be competitive in the vast pool of medical school applicants if they persevere and invest in themselves by working as hard as they can in academics and extracurriculars. The line that I use is "don't be afraid to fail". I needed to know this because when we push ourselves far enough that failure is a possibility that means, by definition, we are pushing ourselves hard enough to achieve something incredible.

Along with this, failure is the best teacher and once you fail you then have the best vision of how to be successful the next time around. I also cannot advocate enough the importance of getting involved in extracurriculars, community service projects, and internships. (If you can coincide these with your desired health profession field that is even better)."

Thank you for answering our questions Mark, and congratulations!!



Dr. Mark Meier, veterinarian and owner of Hays Veterinary Hospital, visited the department earlier this spring to speak with Biology Club. Dr. Meier discussed the process of applying to Vet school, and Veterinary Medicine as a career.

Student News:



Jade Chapman will be participating in a two week study-abroad trip to Ireland with the FHSU Department of Geosciences in May, 2022. Jade is currently a sophomore pursuing a Biology/Natural Resources major with a minor in art.



Mikayla Conaway has accepted a position as an animal keeper with the Animal Adventure Park, Binghamton, NY. Starting in June 2022, Mikayla will be working in the Main Park and soon to open Safari Park, which provides animal husbandry, medical upkeep, animal training, and general care to lions, hyenas, wolves, bears, giraffes, reindeer, and more. Mikayla graduated in May 2022 with a B.S. in Biology/Natural Resources. Her hometown is Denver, CO.



Vanessa Flores-Sanchez has accepted a 6-month animal care internship at Turpentine Creek Wildlife Refuge in Eureka Springs, AR, starting August 15, 2022. Vanessa will be living on-site, feeding exotic cats, doing behavioral training, tracking animal behavior, habitat maintenance, and educational tours. The refuge works towards seeing an end to the illegal exotic cat trade and educating the public about its importance. Vanessa graduated from FHSU in May, 2022. Her hometown is Denver, CO.



Michael Holmes has accepted a position with KS Department of Wildlife and Parks working at Perry State Park near Topeka, KS, starting in June 2022. Michael graduated in May 2022 with a B.S. degree in Biology/Natural Resources, and his hometown is York, NE.



Mario Rodriguez has been selected for a Nature Conservancy internship this summer at Smokey Valley Ranch, a 19,000 acre preserve in Logan County, KS. Mario will be assisting with bird surveys for the Nature Conservancy.



Abigail Stewart has been accepted into the Veterinary Medicine program at Iowa State College, starting in August, 2022. Abigail graduated with a B.S. degree in Biology/Health Professions and a minor in Chemistry in May 2022. While at FHSU she was on the Cross Country and Track teams for four years, earning all-MIAA honors. Her hometown is Emporia, KS.



Students in Zoology lab work on dissecting sharks.



Meetings and Presentations

20TH Annual K-INBRE Symposium, January 13-14, 2022 (Virtual)

Posters:

Faber, M., Z. Nelson, L. Smith, A. Ruelas, and N. Stewart. Bacterial evolution in Aquatic *bacillus* in response to human induced stress.

Nelson, Z., S. Harrison, N. Stewart, and M. Greer. 16S & ITS soil microbiome metagenomic analysis of native & old-world bluestem invaded grasslands across the Midwest.

Pfannenstiel, J., and N. Stewart. Changes in meiotic drive with increased temperatures.

Reynolds, I., and E. T. Gillock. Bioprospecting soil microorganisms for antifungal compounds.

Smith, L., M. Simmons, K. Zahnter, and N. Stewart. Karyotype evolution and meiotic drive of hybrid *Drosophila* fruit flies.

The Kansas Natural Resource Conference, February 3-4, Manhattan, KS

Posters:

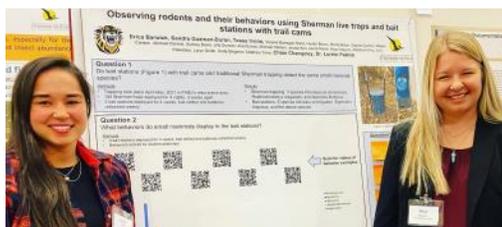
Nelson, Z., S. Harrison, N. Stewart, and M. Greer. 16S and ITS metagenomic soil analysis of native and old-world blue-stem invaded grasslands.



Champney, C., and L. Patrick. Diet of Maternal Big Brown Bats vs. Bachelor Big Brown Bats in Kansas.



Rodriguez, M., and L. Patrick. Bat activity over Prairie Dog colonies in Kansas.



Barwick, E., S. Guzman-Duran, T. Irvine, V. Barragan-Horta, H. Brown, M. Brzon, D. Carlson, R. Carlson, M. Daniels, S. Davis, L. Duncan, A. Evans, M. Holmes, J. Keil, J. Marsh, R. Meyers, M. Miller, A. Pakkebie, L. Smith, C. Stegman, M. Tanis, C. Champney, and L. Patrick. Observing rodents and their behaviors using Sherman live traps and bait stations with trail cams.



Sielaff, M., C. Schmidt, and L. Patrick. Bat activity and insect biomass at McConnell Air Force Base versus nearby parks in Wichita, KS.

Meetings and Presentations, continued



Duncan, L., M. Sielaff, C. Champney, and L. Patrick. Documenting the Genetic Diversity of Kansas Bats.

Jayhawk Audubon Society

Clark, E., B. Stark, and M. Ambardar (presenter). An updated status report on the Ferruginous Hawk in Kansas. February 28, 2022 (Invited presentation).

The John Heinrichs Scholarly and Creative Activity Days (SACAD) April 20, 2022, Hays, KS (Hybrid format).

Posters:

Conaway, M., and T. Phelps-Durr. Comparing Hydroponic Systems.

Xu, M., A. Anderson, and T. Phelps Durr. Preparing a CRISPR Vector to Mutate the ASYMMETRIC LEAVES2 (AS2) Gene in *Arabidopsis*.

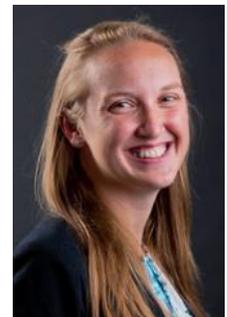


Saying Goodbye



Dr. Nick Stewart has accepted an Assistant Professor position at Southern Oregon University in Ashland, OR, starting in Fall 2022.

Dr. Emily Weber has accepted a tenure-track position at North Carolina Wesleyan University in Rocky Mount, NC, starting in Fall 2022.



Good luck Nick and Emily!!

Graduate Student News:

Congratulations to these graduate students, who completed their master's degrees this semester:

Kirsten Granstrom-Arndt: Influences of grazing habitat structure on avian community composition and nesting bird density within Cheyenne Bottoms, KS.



Sarah Hallyburton: Increasing detection sensitivity for rare and endangered species in Kansas through development of an aquatic environmental DNA sampling protocol.

Sarah has accepted a position as a Microbiologist 1 with the North Carolina Wildlife Resources Commission where she will be working with the state's Conservation Geneticists in a variety of tasks that range from the collection and analysis of eDNA among aquatic species in need of conservation to micro-satellite identification of individual elk in the state's expanding herd. Sarah earned a B.S. degree in Fisheries, Wildlife and Conservation Biology from North Carolina State University. Her hometown is Kernersville, NC.



Lauren Jarboe: Ephemeral pool size effect on tiger salamander abundance.

Lauren has accepted a position with USDA Wildlife Services in southeast Missouri. Lauren will be using drones as part of a large-scale animal control effort focused on invasive hogs. While completing her master's degree, Lauren earned her drone pilot certification (UAS rating) from the Federal Aviation Administration. Lauren earned a B.S. degree in natural resources management from the University of Tennessee at Martin. Her hometown is Evansville, IN.



Nora Lazerus: Efficacy of non-lethal molecular methods in elucidating distribution of gray treefrog complex (*Hyla versicolor/chrysoscelis*) in Kansas.

Nora has accepted a position as Instructor in the Department of Biological Sciences at FHSU, beginning in Fall 2022.



Allison Pardis: Effects of aggressive reed (*Phragmites australis*) on aquatic communities in a Kansas reservoir.

Allison has accepted a position as a Project Manager with Trout Unlimited in North Central WA, starting in May 2022. Her projects will help restore and preserve habitat for salmon and native fishes in the Upper Columbia River. She will work collaboratively with many other conservation organizations, state and federal entities, and private landowners to carry out TU's mission to conserve, protect, and restore North America's coldwater fisheries and their watersheds. Her projects will focus on water transactions and instream flow reservations, irrigation improvements to improve instream flow, barrier removal and improvements to ensure anadromous and native fish passage, and restoration projects to enhance fish habitat and improve instream conditions. Allison earned a B.S. in Earth Science and a B.A. in Environmental Studies from Montana State University. Her hometown is Helena, MT.

Zach Nelson: An ITS & 16S soil metagenomic analysis of native & old-world bluestem invaded grasslands.

Herpetology class field trip



Also, check out the Biology department's Facebook page to see the awesome video that Chloe Champney made of this trip!

<https://www.facebook.com/FHSUBioScience/>



Alumni news:

Courtney Kaba, DDS, (B.S., 2016) graduated from UMKC Dental School in Kansas City, MO, and has accepted a position at Cedar Lodge Dental in Hays, KS.

Braiden Werth, OD, (B.S., 2019) graduated from Southern College of Optometry in Memphis, TN, and has accepted a position at Eye Specialists PA in Hays, KS.

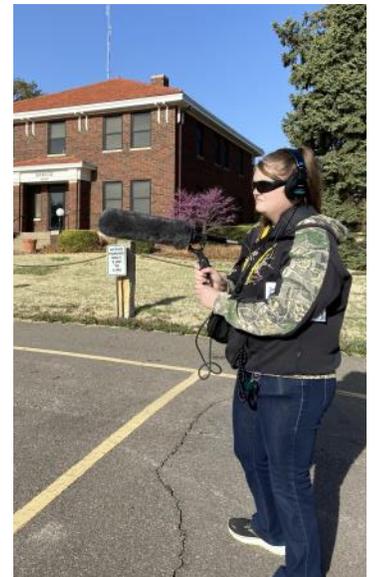
See Braiden talk about his experiences in optometry school here:

<https://www.youtube.com/watch?v=ch8q5CaZDhQ>

Ornithology class field trips



Setting up mist nets →



Recording bird calls with a shotgun microphone at the K-State experiment station



Looking at Sternberg Museum's preserved collections



The Biology Department graduation party was Friday, May 13th 2022, featuring pizza, cake, and lots of give-aways! Congratulations to our prize winners, pictured below with Biology chair Dr. Tara Phelps-Durr.



← Party planners (l-r): Amanda Adams, Medhavi Ambardar, Claudia Carvalho, Hilary Gillock, and Cinthya Lechuga



The Hays bison herd has grown by one!

The rare white bison "Ghostbuster" gave birth Sunday, May 15th, 2022 to a white bison calf.

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www.instagram.com/fhsbioscience/

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We're on the Web!
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