

The Natural Inquirer

FORT HAYS STATE UNIVERSITY DEPARTMENT OF BIOLOGICAL SCIENCES

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Fall Semester, 2018

Justin Roemer wins Hedges Conservation Award

Justin Roemer (B.S., 2016) has been awarded The Nature Conservancy's Lance Hedges Conservation Award. The scholarship, named in memory of the former Director of Conservation for The Nature Conservancy, is available only to interns and other student employees of TNC in Kansas. Roemer was hired as the first intern at TNC's Smoky Valley Ranch in 2014, when he was a FHSU undergraduate working toward his degree in wildlife biology.

As a FHSU Biology graduate student, Roemer conducts research at the Logan County ranch, studying new ways to control purple three-awn, a plant which can cause eye, nose and mouth injuries to livestock. He also works as a seasonal conservation officer for TNC, and has mentored another intern at the Smoky Valley Ranch.



Justin is pictured at Little Jerusalem rock formations, adjacent to TNC's Smoky Valley Ranch.

For more information: <https://www.nature.org/en-us/explore/newsroom/hedges-conservation-award-2018>

Faculty and student publications:

McC Campbell, B. C. and B. R. Maricle. 2018. Natural history of biological soil crusts in prairie ecosystems of the Great Plains: Organismal composition and photosynthetic traits. *Transactions of the Kansas Academy of Science* 121:241-260.

Brendon McC Campbell's photograph was also featured on the cover of the Fall 2018 issue! →

Varvel, N. A., C. J. Hilt, L. C. Johnson, M. Galliard, S. G. Baer, and B. R. Maricle. 2018. Genetic and environmental influences on stomates of big bluestem (*Andropogon gerardii*). *Environmental and Experimental Botany* 155:477-487.

Kramer, D. L., K. L. Maricle, C. J. Hilt, N. M. Martin, A. D. Urban, C. M. Smart, S. G. Baer, L. C. Johnson, and B. R. Maricle. 2018. Drought tolerance in ecotypes of big bluestem (*Andropogon gerardii* Vitman) relates to above-ground evaporative surface area: Results from a common garden experiment. *Flora* 246-247:52-60.

Maricle, B. R. and K. L. Maricle. 2018. Photosynthesis, stomatal responses, and water potential in three species in an inland salt marsh in Kansas, USA. *Flora* 244-245:1-7.



Can you guess which of our alumni delivered this baby orangutan by C-section in September? Turn to page 6 to find out!!

Inside this issue:

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Meetings and Presentations

Ecological Society of America annual meeting, New Orleans, LA, August 2018:

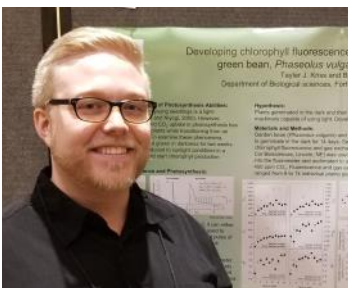
Resiliency of developing grasslands to drought indicated by experimental restorations spanning space and time. S. G. Baer, G. Manning, J. Blair, S. Collins, D. J. Gibson, B. R. Maricle, and L. Johnson. Invited for presentation in the "Restoration and Resilience" Symposium.

Botanical Society of America annual meeting, Rochester, MN, July 2018.

Herbivory preferences among ecotypes of big bluestem (*Andropogon gerardii*). M. S. Pittenger, K. L. Maricle, S. G. Baer, L. C. Johnson, and B. R. Maricle.

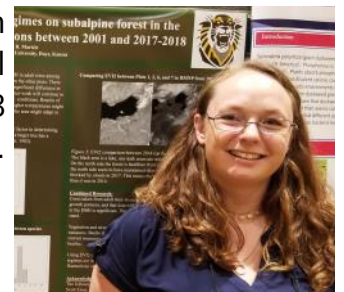
Influence of spilled oil on root aerenchyma and leaf level physiology in wetland species. K. L. Maricle and B. R. Maricle.

Effect of sulfide and lactic acid on cytochrome c oxidase activities in plant roots and catfish liver (poster). N. C. Quispe, K. O. Westerhaus, Y. Kobayashi, and B. R. Maricle.



Greening rate and photosynthetic development of leaves in corn and bean (poster). T. J. Kriss and B. R. Maricle.

Influences of drought and disturbance regimes on subalpine forest in the Rocky Mountain National Park: Comparisons between 2001 and 2017-2018 (poster). C. A. Hanson and B. R. Maricle.



Society of American Foresters regional meeting, Hays, KS, October 2018.

Influences of drought and disturbance regimes on subalpine forest in the Rocky Mountain National Park: Comparisons between 2001 and 2017-2018 (poster). C. A. Hanson and B. R. Maricle.

Awards:

Student research grant awards:

Effects of ethanol, sulfide, and lactic acid on enzymes of respiration in catfish and plant tissue. N. C. Quispe and B. R. Maricle. K-INBRE Summer Scholars Program, \$4000.

Bioprospecting for antimicrobial properties of phytoalexins in Kansas aquatic and emergent plants. T. J. Picking and B. R. Maricle. Graduate Scholarly Experience Grant, \$405.

The impact of land use on honey bee (*Apis mellifera*) forage. R. P. Engel and B. R. Maricle. FHSU Graduate Scholarly Experience Grant, \$350.

Awards, continued:

Congratulations to the Biology department's four 2019 **Undergraduate Research Experience (URE) grant awardees**. This year's competition was extremely competitive with 20 applicants!

Ms. Claudia Da Silva Carvalho: "Isolation of calcium-dependent natural products among soil microbes in Kansas".

Dr. Medhavi Ambardar: "Voices in the night: Estimating bird migratory activity via nocturnal flight calls".

Dr. Nicholas Stewart: "Investigation of environmental characteristics on female meiotic drive within the *Drosophila virilus* subgroup".

Dr. Amanda Adams: "Effects of pond restoration on bats, fish, and aquatic invertebrates: demonstrating the importance of water quality on ecological systems to students and the public".



Diedre Kramer, Biology department graduate student, received the **George Toland Award for Ecological Research on North American Herpetofauna** at the 45th annual KS Herpetological Society meeting in Emporia, KS on November 3-4. She presented her thesis research, which is investigating the spatial ecology and population demographics of the ornate box turtle (*Terrapene ornata*) at Quivira National Wildlife Refuge in an effort to develop long-term monitoring protocols for wildlife species using natural resources on the refuge.



Jacob Alexander, a sophomore in Biology, was awarded the **Howard K. Gloyd & Edward H. Taylor Scholarship** at the 45th annual KS Herpetological Society meeting in Emporia, KS on November 3-4. Jacob presented his research, which he has been conducting on the Dr. Howard Reynolds nature trails at the Sternberg Museum for the past two years. His research is a long-term monitoring project on the herpetofauna of the area, focusing on both temperature and mark-recapture data. The goal is to gain a better understanding of the herpetofaunal resources on the trails, as well as understanding these animals' use of artificial cover, to gain a more accurate picture of population sizes.

Entrepreneur Direct fellowship:



Claudia Carvalho, third from left, pictured with other Entrepreneur Direct fellowship recipients and Peter Werth, center.

On November 8, Entrepreneur Direct, a speaker series conducted by FHSU's Center for Entrepreneurship, featured Peter Werth, a FHSU alumnus and founder/CEO of ChemWerth Inc. FHSU's Werth College of Science, Technology, and Mathematics is named for him. The Entrepreneur Direct program awarded fellowships to several faculty members, including **Claudia Carvalho, an instructor in the Department of Biological Sciences.**

Ms. Carvalho (B.S. 2007, M.S. 2009) worked as a Biology lab instructor at Baylor University from 2009-2015, and is currently pursuing a Ph.D. in Public Health from Walden University. Her research interests include isolation and characterization of soil microorganisms producing antimicrobial agents, and studying the perceptions and knowledge of antibiotic stewardship among individuals from rural communities. Her project for Entrepreneur Direct will address the problem of medication non-adherence in patients, and its impact on antibiotic resistance.



Twelve people participated in the **2018 Christmas bird count** on December 15th, observing and recording 50 species of birds in and around the Hays area!

David Levering and Dr. Medhavi Ambardar spot a bird at the Christmas bird count (Photo by Dr. Kim Perez).



Congratulations to **Dr. Mitch and Morgan Greer** on the birth of baby Guthrie, born December 17th !



Congratulations!



Eli Lohrmeyer has been accepted at Creighton University School of Dentistry in Omaha, Nebraska. Eli is a senior in Biology from Ellis, KS, graduating in May 2019.



Braiden Werth has been accepted at Southern College of Optometry in Memphis, Tennessee. Braiden is senior in Biology from Hays, graduating in May 2019.

Congratulations to these graduate students for passing their oral exams this semester:

Mohammad Abdelhameed
Maram Alsmady
Holly Anderson
Tayler Kriss

Taffra Picking
Jared Ridder
Brittany Rogness

And to these graduate students for defending their Masters theses:

Angelica Sprague: "Identification and characterization of tri-colored bat and northern myotis hibernacula in Kansas."

Kyle Schumacher: "A proposal to incorporate multi-spectral imaging into long-term grassland breeding bird monitoring protocol at Crescent Lake NWR, Nebraska."

Rashmi Acharya: "Distribution of porcine endogenous retrovirus (PERV) variants in domestic and feral pigs."

Fisheries management class field trip (September 29-30)

Dr. William Stark was very happy with this year's Fisheries Management class on their fall field trip. He described the students as: "impressive under the duress of awful weather. They put their heads down and smiles on and collected an impressive amount of data. In 36 hours they



drove 3 hours and slept about 4 hours. During the remaining time they deployed and ran 13 trapnets and 7 gillnets, electrofished three 40-acre ponds, and measured weights and lengths of 1700 fish as the wind howled around them. Of the many good field trips I have been part of, this weekend with Fisheries Management was one of the best with regard to student participation, effort and attitude."

Alumni news:

On September 7th, **Dr. Laura Whisler** (B.S. Biology, 2004), was called to the Sedgwick County Zoo to deliver a baby orangutan by C-section.

Dr. Whisler and Dr. Janna Chibry, both practicing OB-GYNs at Wichita's College Hill Obstetrics and Gynecology, were asked to come assist Daisy, a pregnant 36-year-old Sumatran orangutan, who was having birthing complications. Drs. Whisler and Chibry are on call for the zoo whenever one of its apes goes into labor, but they've never been needed until now. Both Daisy and her baby, which has since been named Lily, are doing well. For more information, click below:

<https://www.kansas.com/entertainment/ent-columns-blogs/keeper-of-the-plans/article218730195.html>



Dr. Laura Whisler on right.



(Pictures courtesy of Sedgwick County Zoo and Wichita Eagle).

Ernesto Flores (M.S. Biology, 2018) has been hired as a full-time Environmental Associate in the Fisheries Division, Kansas Department of Wildlife Parks and Tourism, in the Emporia Research office.



Macy Moyers, a junior in Biology from Great Bend, was accepted to the **Disney College Program** at Walt Disney World in Orlando, FL. "I am glad that I have the opportunity to go beyond the usual type of learning experience and learn and work in a place that I would never be able to experience otherwise", said Moyers. Her internship runs from May 2018-January 2019.



The program provides participants the opportunity to live, earn and learn while at Disney. They also have the option of taking courses and seminars through Disney while there. During the seminars, participants learned about the diverse departments within Disney's animal, science and environment team and were given the opportunity to meet cast members in those areas.

"As a participant in this series, I gained field experience at Disney's Animal Kingdom and the Living Seas in Epcot," she said. Moyers was previously a life guard at Disney's Typhoon Lagoon, where she was stationed for five months. She now works at the food and beverage service in Tomorrowland at Magic Kingdom. On her days off, she enjoys exploring Walt Disney World and Orlando with the friends she has made there.

Moyers is currently a full-time FHSU virtual student while on her internship, and hopes to attend dental school after she graduates. "Disney, as a company, has a main focus on their guest service", she says. "It would be advantageous for me to incorporate these guest service skills with my future in patient care."



The annual **KWEC Butterfly Festival** took place Saturday, September 15. Activities included a puppet magic show, netting and tagging monarch butterflies, and observing exhibits like bee hives, fluorescing scorpions, giant walking sticks, and monarch chrysalises. Information on butterfly-friendly plants and composting were available from the Barton County Master Gardeners group, along with examples of butterfly-friendly plants in the KWEC pollinator garden.



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