

The Natural Inquirer

FORT HAYS STATE UNIVERSITY DEPARTMENT OF BIOLOGICAL SCIENCES

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Congratulations!

Dr. Yass Kobayashi was presented with the Outstanding Research and Scholarship award on April 27th.

The award is traditionally presented as a surprise during class.... Dr. Kobayashi asked the administrators presenting the award to wait several minutes while he continued his lecture on kidney function!!

Pictured L-R are: Commerce Bank representative Deron O'Connor, Chair of Biology Dr. Greg Farley, interim provost Dr. Chris Crawford, Dr. Kobayashi, CHLS dean Dr. Jeff Briggs, and FHSU president Dr. Mirta Martin.

Nicole Martin, a junior in Biology (pre-Physical Therapy) from Lewis, KS, published the following article: Martin, N.M. and B.R. Maricle. 2015. Species-specific enzymatic tolerance of sulfide toxicity in plant roots. *Plant Physiology and Biochemistry* 88:36-41.

For the past three years, Martin has been working with Dr. Brian Maricle, studying the toxic effects of sulfide on enzymes of respiration in plant roots. They found that in some types of plants, the enzymes were still working even when being poisoned by sulfide.

"Without the activity of this enzyme, respiration cannot be completed, therefore no energy is produced, and the organism either cannot live or has to figure out another way to produce energy," Martin said.

"Understanding mechanisms of sulfide tolerance could have relevance for understanding evolution of life, ecological structuring of some aquatic environments, and also potentially has implications for human health. Some people are exposed to sulfide from sewers, coal-burning plants, landfills, paper mills and wastewater treatment plants, making this work of interest in several contexts.

"Nicole recognized the value of research experience, and she was able to make some of the 'higher' connections to link plant cell biology with physical therapy and, therefore, help her professional development," Dr. Maricle said.

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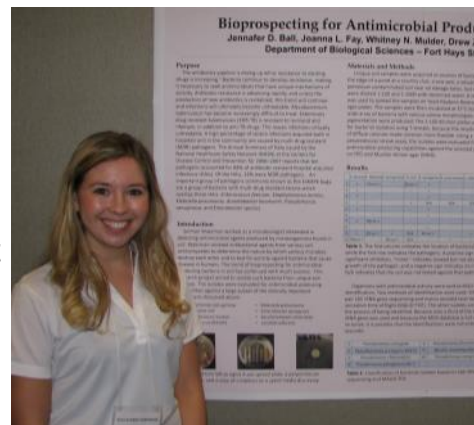
Meetings and Presentations

13th annual K-INBRE symposium, Jan 17-18 2015, Topeka KS



Poster presentations:

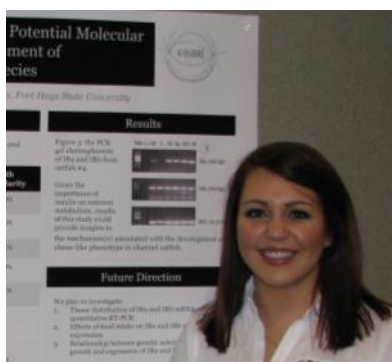
Ball, J. D., J. L. Fay, W. N. Mulder, D. Zimmerman, and S. Zimmerman. Bioprospecting for antimicrobial producing organisms in soil. **Congratulations to Jenna Ball for earning an Honorable Mention with this poster!**



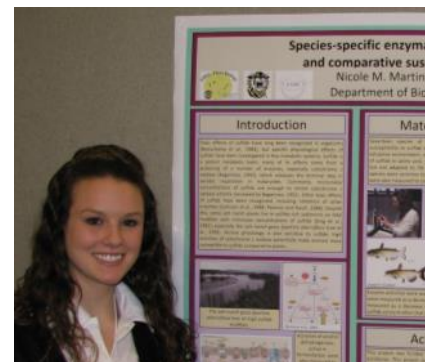
Carter, J. J., G. H. Farley and E. T. Gillock. Ciprofloxacin-resistant bacteria isolated from migratory birds may provide evidence for avian species as vectors of resistant bacteria.



Evans, P., M. Vides and Y. Kobayashi. Identification of Beta and Alpha adrenergic receptor mRNA and their tissue distribution in channel catfish.



Leiker, A., C. Nash, and Y. Kobayashi. Insulin receptor mRNA in channel catfish: A potential molecular marker to investigate development of obesity using non-model fish species.



Martin, N. M., Y. Kobayashi, and B. R. Maricle. Species-specific enzymatic tolerance of sulfide toxicity in plant roots and comparative susceptibility between plant and catfish tissue.

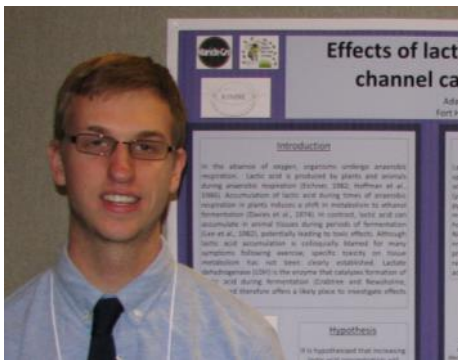
Meetings and Presentations, continued:

K-INBRE Posters:

Nash, C., P. Evans, and Y. Kobayashi. Stearoyl-CoA desaturase mRNA in channel catfish: A potential molecular marker to investigate development of obesity using non-model fish species.



Urban, A. D., Y. Kobayashi, and B. R. Maricle. Effects of lactic acid on anaerobic respiration in channel catfish (*Ictalurus punctatus*) liver.



Vides, M., P. Evans, and Y. Kobayashi. Use of AMP protein kinase as a potential molecular marker to investigate development of obesity in non-model fish species.



Vides, M., B. Watkins, S. Suppes, and Y. Kobayashi. Identification and characterization of TRAPPC 11 mRNA in channel catfish: a potential genetic marker to investigate obesity-related metabolic disorders using non-model fish species.

Dr. Bill Stark, Dr. Elmer Finck, Angelica Sprague, Holly Wilson, Mitchell Meyer, Samantha Pounds, and Taylor Rasmussen attended **Kansas Natural Resource Conference** on January 29-30 in Wichita, KS.

Poster presentations:

S. Pounds and E. J. Finck. A Survey of Small Mammals In Western North Dakota.

T. Rasmussen and E. J. Finck. Status of the Franklin's Ground Squirrel (*Poliocitellus franklinii*) in Kansas.

Meetings and Presentations, continued:

February 11, 2015, was **Undergraduate Research Day** at the Capitol Rotunda in Topeka, KS, featuring undergraduate student posters from FHSU, KU, KSU, WSU, PSU, ESU, and Washburn University.

J. D. Ball, J. L. Fay, W. N. Mulder, D. Zimmerman, and S. Zimmerman. Bioprospecting for Antimicrobial Producing Organisms in Soil.

M. Meyer and E. J. Finck. Black-Footed Ferret (*Mustela nigripes*) Dispersion in Western Kansas.

Kaitlin Moore, Oaklee Abernathy, Whitney Mulder, and Jenna Ball attended the **Missouri and Missouri Valley branch of the American Society for Microbiology annual meeting** on March 26-28, 2015, at the University of Nebraska–Lincoln.

W. N. Mulder, J. L. Fay, J. D. Ball, and O. Abernathy. Bioprospecting for Antimicrobial Producing Organisms in Soil. **Second place in undergraduate poster competition.**



L-R: Jenna Ball, Whitney Mulder, and Oaklee Abernathy.



The 10th Annual **John Heinrichs Scholarly and Creative Activities Day** was April 29th on the FHSU campus.

In the Graduate Student Empirical category, Cassandra Brown placed 2nd with: "The Tarnished Penny: An Insight into Occupancy Modeling on a Refuge-based Scale".

Mitchell Meyer placed 3rd with: "Black-Footed Ferret (*Mustela nigripes*) Dispersion in Western Kansas."

Graduate and Undergraduate Student News:

Congratulations to **Samantha Pounds** and **Taylor Rasmussen** for completing their oral exams this semester!

Also, congratulations to the following students, recently accepted into professional school!

Melissa Vides: Northeastern State University (Oklahoma) School of Optometry.

Brianna (Watkins) Teel: Iowa State University School of Veterinary Medicine.

Kerriann Shaw: University of Nebraska Medical Center Physical Therapy program.

Keriann, a starting forward and co-captain for the championship FHSU women's basketball team, was also named Student Athlete of the Week in January, and was a finalist for the prestigious Torch Award.

Katharine Showalter (Alexander, KS) and **Tucker O'Hair** (Andale, KS), both majoring in Biology and Secondary Education, were selected for the **National Science Foundation's Robert Noyce Scholarship**. They will each receive \$12,000 during the 2015–2016 school year. Tucker will graduate in May 2016, but Katie's scholarship can be renewed for a second year. **Alysia Schwarz** (Grinnell, KS) received the Noyce Scholarship for 2014–2015, and it was renewed for 2015–2016. Previously, Karli Henning (Great Bend, KS) and Julie Weber (Garden Plain, KS) received the award during the 2013–2014, the first year the scholarship was awarded at FHSU. Karli and Julie are now teaching.

The Noyce Scholarship Program was established to increase the number of quality teachers at the secondary education level (grades 6-12) in the subjects of biology, chemistry, earth sciences, math, and physics who teach in high-needs areas, such as rural and inner-city schools. The scholarship is available to juniors and seniors. In addition to financial support, the awardees receive special instruction in topics related to teaching in high-needs schools, such as using distance-learning technology and financial issues facing small, rural schools. In return for the scholarship, the awardees must complete their major in science or math education and teach for 2 years in a high-needs school for every year they were awarded the scholarship.

A committee of representatives from the FHSU Science and Mathematics Education Institute and the departments of Biological Sciences, Chemistry, Geosciences, Math, Physics, and Teacher Education select the awardees based on their GPAs (overall and in their science or math major), written personal statements, and letters of recommendation. Congratulations to Alysia, Katie, and Tucker!

Immersive Ecology

Dr. Bill Stark has organized a new field experience group for students called “Immersive Ecology”, which he describes as:

“a diverse, hands-on, professional growth and development experience that allows students to gain a unique perspective and appreciation for an aspect of their natural resource degree program. This opportunity is available after 12 weeks of traditional lecture and lab foundational preparation. This year’s students participated in an intensive 5-day immersion in fish species diversity and habitat associations in six different physiographic regions (High Plains, Flint Hills, Ozark Highlands, Arkansas Highlands, Ouachita Highlands, and Coastal Plains). Students became proficient in using a variety of capture techniques appropriate to the diverse topography and unique faunas to get "up close" to 89 different species of fishes, many of which are highly specialized to specific environments or quite rare. Students work in a cooperative environment, in a primitive camping but highly mobile investigative model that allows for maximal interaction with the target diversity and associated habitat (no hotels, camp grounds, or restaurants).”

Experiences from this year’s trip are documented on the group’s Facebook page (FHSU Immersive Ecology: Fish Diversity).



Eastern narrowmouth toad



Orangebelly darter



Three-toed Amphiuma



FORT HAYS STATE UNIVERSITY'S
**KANSAS WETLANDS
EDUCATION CENTER**

KWEC news

(Info and photos courtesy of wetlandcenter.fhsu.edu and www.facebook.com/wetlandcenter)



The 2015 Wings 'N' Wetlands Festival was held on April 24-25, in Great Bend, KS. The festival included guided tours of Cheyenne Bottoms and Quivera National Wildlife Refuge at the height of spring migration. Details and the 2015 Bird Sightings Checklist can be found at:

<http://wetlandcenter.fhsu.edu/wings-n-wetlands-birding-festival/>



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