



Fall Semester 2008

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# The Natural Enquirer

Department of Biological Sciences, Fort Hays State University, Hays, KS

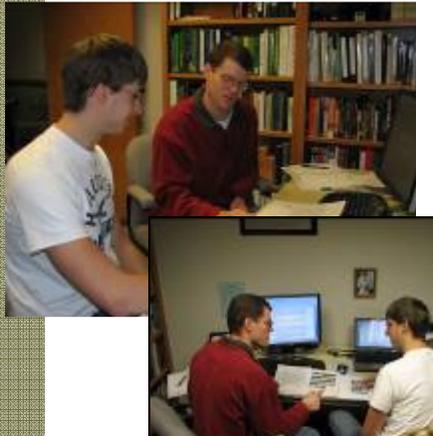
## Special Interest Articles:

- Stream Ecology Field Experience
- Plant Taxonomy Field Experience
- Departmental Seminars
- Much more!

➤ "In a completely rational society, the best of us would be teachers and the rest of us would have to settle for something less."

➤ ~Lee Iacocca

## Undergraduate Student Research Feature



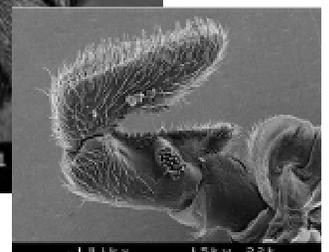
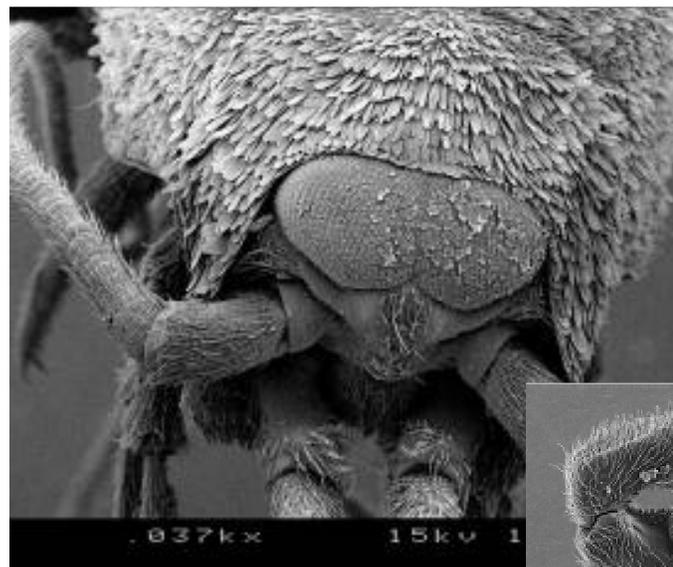
Aaron Pfeifer and Dr. Brian Maricle discuss results of stable isotope research

Aaron Pfeifer is a Pre-Med [Chemistry] major in his junior year at FHSU. This Hays native plans to obtain his M.D. in order to return to Hays to practice emergency medicine. With his faculty mentor, Dr. Brian Maricle of the Department of Biological Sciences,

Aaron is using stable isotopes ( $^{12}\text{C}$  and  $^{13}\text{C}$ ) to assess carbon metabolism in the human body. Aaron has found a previously uninvestigated relationship between carbon isotope values in hair and breath in relation to consumption of caffeine, nicotine, and alcohol.

## New Kansas Insect Species

Dr. Richard Packauskas and undergraduate student Ryan Shofner are currently describing a new species of jumping springtail found in Kansas. Scanning electron micrographs by R. Shofner



Detail of labial palp (mouthpart) of previously undescribed jumping bristletail (Insecta: Microcoryphias).

# Stream Ecology Field Experience

## Ashley Inslee



*"I really appreciated the diversity of habitats we were exposed to."*

On 24 September 2008 the Stream Ecology class took a five day field trip to the Caney River Basin in southeastern Kansas. The Caney River Basin provided an ideal model system for investigations given the size (wadable) and predominant landuse (rangeland). "I really appreciated the diversity of habitats we were exposed to," commented Luke Hind, student. Throughout the five days, four streams were intensively sampled. This included checking invertebrate drift-net traps every hour for a 24-hour period.

Several methods of fish capture and invertebrate sampling were employed, such as seining, riffle kicking, and electro-fishing from a tote-barge and a boat. Over



40 species of fish were identified including the brindled madtom (*Noturus miurus*), which is listed as a species in need of conservation in Kansas. Historically, *N. miurus* were known to inhabit the Caney River in Chautauqua County, but have not been recorded recently. Five species of darters also were observed inhabiting one riffle in the Little Caney

River. Dr. Stark, the professor for Stream Ecology, stated, "The effort that students put forth on the trip was really outstanding. I'm sure that is one of the main reasons we were so successful in finding these rare organisms like the brindled madtom and redfin darter."

However, this experience did not end upon returning to campus. Invertebrate samples were brought back to Fort Hays State University for identification. The class used these data to compare physical characteristics among erosional and depositional habitats, and to examine variation in community structure among these macrohabitats and within the river basin. This information will provide state agencies, landowners, and the general public with current information on the biotic health of the Caney River Basin.



## Undergraduate student in Botany receives two Kansas Garden Club scholarships ~ Jessica Casey

I was born in Hays, KS, but grew up on a farm outside of Bazine, KS. I went to school in Bazine from preschool to my freshman year of high school. My sophomore year, Ransom and Bazine combined to form Western Plains High School. I went there from my sophomore year to graduation. While in high school I was involved in volleyball, basketball, track and field, scholar's bowl, forensics, league academic contest, all school play, student

council, band and choir. I was class officer four years and Basketball Homecoming Queen my senior year. I decided I wanted to study botany my senior year when I helped my older brother gather data for his thesis. I visited Fort Hays State University and decided it was where I wanted to attend. My poster entitled *Micromorphology of Spartina pectinata Using Scanning Electron Microscopy* took third place in the Spring

semester College of Health and Life Sciences Creative Activity Week poster contest in 2008. I have received the Kansas Garden Club scholarship (\$1000) and the Kansas Garden Club bonus scholarship (\$1000) in addition to the Kansas Governor's Annual One Shot Turkey Hunt Scholarship. All scholarships followed a rigorous application process, with one requiring an interview.



Jessica Casey and deer fawn

## Department Outreach: Presentations, Posters and Society and Public Involvement by Faculty and Students

Dr. Elmer Finck took his Wildlife Management class to Plainville to discuss the Plainville Lake project with the planning board in Plainville.

Dr. Bill Stark went on 9/19 to meet with KDWP and private landowners on Caney River to discuss and visit stream survey sites.

Dr. Joe Thomasson took four students (Ryan Shofner, Jessica Casey, Stasya Berber and Justin Anderson) to the Ringneck Ranch Shooting Preserve south of Tipton for a Conservation Leaders for Tomorrow workshop for which he was an instructor. Photos of the workshop are available at [www.clft.org](http://www.clft.org).

Dr. Mary Morgan attended several Core Outcomes Project meetings

Drs. Rob Channell, Jerry Choate and Elmer Finck attended the Central Plains Society of Mammalogists meeting.

Dr. Chris Bennett attended the Society of Vertebrate Paleontology in Cleveland, OH with students: Sebastian Dalman, Jonathan Hammond, Miranda Lucas, Dennis Roth, J.C. Clare, and Pat Clark

Dr. Jordge LaFantasie attended the Wyoming Society for Range Management meeting in Cheyenne, WY for which she which serves on the Student Activities Committee

### Presentations

- Ecological Society of America, Milwaukee, WI: Effects of creek drying on shallow- and deep-rooted trees in western Kansas. Maricle, B.R., S.R. Zwenger, A.M. Pfeifer, and R.W. Lee.
- Texas Society of Mammalogists, Texas Tech Center at Junction. "The contact zone between two species of short-tailed shrew (*Blarina*) in Iowa and Missouri," C. W. Thompson, R. S. Pfau, E. J. Finck, J.R. Choate, and H. H. Genoways.
- Southwestern Association of Naturalists, University of Memphis. "Kansas Mammal Atlas: Project Background" J.R. Choate K. L. Phelps, C. J. Schmidt, T. W. Taggart, and M. G. Johann; and "Kansas Mammal Atlas: Results to Date" J.R. Choate, C. J. Schmidt, K. L. Phelps, T. W. Taggart, and M. G. Johann.
- American Society of Mammalogists, South Dakota State University. "The contact zone between two species of short-tailed shrew (*Blarina*) in Iowa and Missouri" C. W. Thompson, R. S. Pfau, E. J. Finck, J.R. Choate, and H. H. Genoways; "Kansas Mammal Atlas: Project Background" J.R. Choate, K. L. Phelps, C. J. Schmidt, T. W. Taggart, and M. L. Johann; and "Kansas mammal atlas: results to date" J.R. Choate, C. J. Schmidt, K. L. Phelps, T. T. Taggart, and M. L. Johann. Poster: "Isolated populations of *Cryptotis parva* at the periphery of its range" J.R. Choate, Z. J. Schwenke and J. K. Frey.

*"To protect your rivers, protect your mountains."  
Emperor YU,  
China, 1600 B.C.*

## Graduate Student News

### Monies awarded:

- **Christian Edwards** \$250 (Dr. Greg Farley, sponsor) from The Office of Scholarship and Sponsored Projects in Fall, 2008
- **Jason Black and Dr. Elmer Finck** (\$5000) to study potential Avian Influenza in waterfowl at Cheyenne Bottoms Wildlife Area

### Scholarships/Honors:

- **Ashley Inslee** was presented with the 2008 Howard K. Gloyd/Edward H. Taylor Scholarship for \$275.00. This is a Kansas Herpetological Society award for research honoring two great biologists with strong ties to the state

### Publications

#### ○ **Scott Groeper:**

- **Groeper, S.R.**, P.J. Gabig, M.P. Vrtiska, J.M. Gilsdorf, S.E. Hygnstrom, and L.A. Powell. 2008. Population and spatial dynamics of resident Canada geese in southeastern Nebraska. *Human-Wildlife Conflicts* 2:270–276.
- Fricke, K.A., M.A. Cover, S.E. Hygnstrom, **S.R. Groeper**, H.H. Genoways, K.M. Hams, and K.C. VerCauteren. 2008. Historic and recent distributions of elk in Nebraska. *Great Plains Research* Vol 2 No. 2.
- Hygnstrom, S.E. **S.R. Groeper**, K.C. VerCauteren, C.J.. Frost, J.R. Boner, T.C. Kinsell, and G.M. Clements. 2008. Literature review of mule deer and white-tailed deer movements in western and Midwestern landscapes. *Great Plains Research* Vol 2 No. 2.
- Crank, R.D., S.E. Hygnstrom, **S.R. Groeper**, and K.M. Hams. 2009. Landowner attitudes toward elk management in the Pine Ridge region of northwestern Nebraska. *Human-Wildlife Conflicts*.

#### ○ **Zachary Schwenke**

- James N. Stuart, Jennifer K. Frey, **Zachary J. Schwenke**, John S. Sherman.(in press). "Status of the nine-banded armadillo in New Mexico", to be published in *The Prairie Naturalist*, Volume 39(3/4).



Graduate Student Jason Black Sampling at Cheyenne Bottoms Wildlife Area



Graduate Student Elita Baldrige checking traps.



Graduate Students At The FHSU Biology Bird Banding Station supervised by Dr. Greg Farley. From left to right are Christian Edwards, Todd Buckley and Elita Baldrige



**Congratulations to Graduate Students successfully completing their oral comprehensive oral examinations:** Christian Edwards, Carol Grover and Claudia Carvalho

**Congratulations to Jerad Gorney for successfully defending his thesis entitled:** "Cefotaxime Resistant Bacteria Isolated from a Wastewater Treatment Plant" in October. He plans to finish his M.S. during the fall 2008 semester.

## Undergraduate News

- Undergraduate senior Garrett Huck was admitted to the Doctor of Dental Surgery (D.D.S) program at the University of Missouri Kansas City School of Dentistry .
- Undergraduate senior Kyle Reed was admitted into the Doctor of Physical Therapy (D.P.T.) program at Wichita State University.
- Shingo Ishihara, an undergraduate student and Dr. Eric Gillock received a grant from the Kansas Idea Network for Biomedical Research Excellence (K-INBRE) for a study entitled "Isolation of Tylosin-Resistant Bacteria from Cattle Feedlots and Pastures: Cross-Resistance to Human Macrolides".
- Tanner Welsch, an undergraduate pre-medical student, spent eight weeks at the Mayo Clinic during the summer of 2008 on an all-expenses paid biomedical research internship.
- Tyler Schrant, undergraduate senior, was accepted into the Occupational Therapy program at the University of Kansas School of Allied Health



Rangeland Management students studying native rangeland plants at the Biology Relict Area

## Biology Club off to a Great Start~Tiffany Robben, Vice-President

The Biology Club is off to a great start this year with many fresh faces joining the club! With 14 this year and two great advisors, the Biology Club is ready to "take the bull by the horns" and start completing many projects. Some of these projects include building an outdoor classroom site by the Sternberg Museum, aluminum can recycling in Albertson hall, repairing bike trails along Big Creek, and possibly teaching or tutoring kids at the local elementary schools. We have also started doing community service projects and so far we have 15 hours of the 20 required hours met. One community service project that we will continue to do is walking dogs at the High Plains Humane Society here in Hays.



Biology Club booth at Oktoberfest, 2008

### Members: Kyle Cook (President)

([wkcook@scatcat.fhsu.edu](mailto:wkcook@scatcat.fhsu.edu)), Tiffany Robben (Vice President), Katie Wildgen (Treasurer), Kelli Henderson (Secretary), Joshua Crowe, Holly Miller, Jordan Schmeidler, Rance Schreibvogel, Genna Shuler, Chelsea Hawk, Jonathan Rather, and Erin Dugan

Graduate Student Members: Kristen Polacik and Trey Towers

Co-Sponsors: Drs. Brian Maricle and Jordana LaFantasie

One of the very first things our club did this year was hold a booth at Oktoberfest. We sold our famous roasted corn and Biology related t-shirts. Both were a big hit, and people really enjoyed the shirt designs. It was a very successful day for us! We have leftover t-shirts in the male design (Dik-Dik). If you would like one please contact Tiffany Robben by email: [tmrobben@scatcat.fhsu.edu](mailto:tmrobben@scatcat.fhsu.edu). The money from fundraising will be put towards taking the whole Biology Club on a trip to a biology related adventure, like a zoo. We plan to do this in the spring.

We also plan to have an observatory night for the Biology Club. Depending on how the observatory on top of Albertson works, we might invite others to another observatory night. In the spring semester we will begin work on the outdoor classroom site at the Sternberg Museum. If you would like to help, please let us know.

The Display case on the 1<sup>st</sup> floor and the Biology Club bulletin board on the Second floor will soon be updated to give visitors a taste of our Department. Please feel free to contact us if you need any information about our projects or if you have opportunities for us.



## Faculty News

### Tiger and Friends and Family Day~ Dr. Finck

Tiger and Family Day was a huge success, with the department being nicely showcased to more than 25 prospective students and their parents, as well as the families of two current students. A very big thank you to Rob Channell, Mark Eberle, Elmer Finck, Jordge LaFantasie, Rich Packauskas, Elita Baldrige, Ryan Pinkall, Georgina Jacquez, and P. Allen Casey for making the event such a rousing success.

### Introducing New Faculty: Hilary Gillock

Hello, my name is Hilary Gillock, and I am a new instructor in The Department of Biological Sciences. I received my bachelor's degree in wildlife biology from Kansas State University in 1994. After working as an entomology technician at the USDA Grain Marketing and Production Research Center in Manhattan, I moved to Raleigh, NC in 1998 with my husband, Eric, to attend graduate school at North Carolina State University. My masters thesis, completed in 2001, was entitled, "*Entomophaga maimaiga* at the southern edge of the gypsy moth infestation". I then worked as a biological technician for USDA APHIS in Raleigh, and when Eric was hired as a Biology faculty member at FHSU, we moved to Hays.

Since May, 2002, I have worked as the assistant editor of *The Prairie Naturalist*, a quarterly scientific journal published at FHSU. I taught a summer Graduate Topics in Biology class, Insect Identification, in 2005, and the Forensic Entomology unit of the FHSU Girl's Summer Math and Science Camp in 2006 and 2007. Currently I teach Human Biology.

#### Monies awarded:

- Dr. Brian Maricle \$1190 from The Office of Scholarship and Sponsored Projects in Fall, 2008
- Dr. Bill Stark \$1190 from The Office of Scholarship and Sponsored Projects in Fall, 2008
- Dr. Eric Gillock and undergraduate student Shingo Ishihara received a grant from the Kansas Idea Network for Biomedical Research Excellence (K-INBRE)

#### Honors:

- Elmer J. Finck received the First Distinguished Service Award from the Central Plains Society of Mammalogists at their 20<sup>th</sup> Annual Meeting in October 2008 in Warrensburg, MO. He was a co-founder of the CPSM in 1989 and subsequently served as President and Past-President.
- Elmer J. Finck, was elected to the Board of Directors of the American Society of Mammalogists at its 88<sup>th</sup> annual meeting held in June at South Dakota State University in Brookings

#### Publications

- Phelps, K. L., C. J. Schmidt, and **J. R. Choate**. 2008. Presence of the evening bat (*Nycticeius humeralis*) in westernmost Kansas. Transactions of the Kansas Academy of Science 111:159-160.
- Schmidt, C. J., **J. R. Choate**, and K. L. Phelps. 2008. Wandering Canada lynx (*Lynx canadensis*) in Kansas. Transactions of the Kansas Academy of Science 111:161-162.
- **Farley, G. H., and J. R. Choate** (eds.). 2008. *Unlocking the unknown: Papers honoring Dr. Richard J. Zakrzewski*. Fort Hays Studies, Special Issue 2, 153 pp.
- **Maricle, B.R.** and R.W. Lee. (in press) Mechanisms of sulfide and anoxia tolerance in salt marsh grasses in relation to elevational zonation. Proceedings of the Third International Conference on Invasive *Spartina*, San Francisco, CA, November 2004
- **Maricle, B.R.**, O. Kiirats, R.W. Lee, and G.E. Edwards. (in press). Effects of salinity on photosynthesis in C<sub>4</sub> estuarine grasses. Proceedings of the Third International Conference on Invasive *Spartina*, San Francisco, CA, November 2004
- **Bennett, S. C.** Ontogeny and *Archaeopteryx*. 2008. Journal of Vertebrate Paleontology, 28:535-542

## Saba Wetlands: A Field Experience in Plant Taxonomy



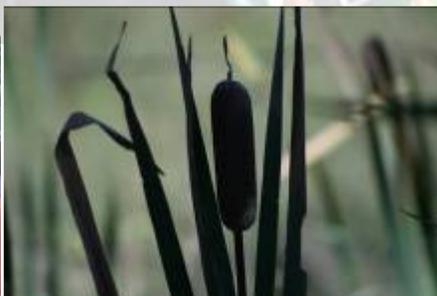
Dr. Joe Thomasson took the Plant Taxonomy class to the Saba Wetlands (Ellis County) to observe wetland plant species and hydric soils, both of which are characteristics used for wetlands delineation. Students observed plants in the families Poaceae, Lemnaceae, Salicaceae, Cyperaceae, Orchidaceae and many others. Thomasson states, "It is a really unique environment that is rarely seen in grassland settings; it is a fun place to go and see a small wetland in what otherwise is a dry grassland."

"It's a lot better to go out in the field; you can learn a lot more with first-hand experience."



Undergraduate Clinton Helms noted, when asked about the value of such field trips, "It's a lot better to go out in the field; you can learn a lot more with first-hand experience." Wesley Sowards, who nearly missed sinking to his knees in muck beneath a thick mat of reed canarygrass (*Phalaris arundinacea*) rhizomes agreed with Helms. Of the rhizome mat and its minor "hazardous" potential, Thomasson states, "...the occasional student falling in up to their waist is interesting."

Photos Courtesy P. Allen Casey



## Alumni News

Former graduate student **Sam Zwenger** (MS 2007) and Dr. Eric Gillock recently had a paper accepted for publication. The paper is entitled "Bacteria Isolated from Sewage Influent Resistant to Ciprofloxacin, Chloramphenicol and Tetracycline" and will appear in the Journal of Environmental Science and Health, Part A next spring.

Former graduate student **Lance Thurlow** (MS 2005), who is now in the fourth year of his Ph.D. program in microbiology at Kansas State University, recently won the Michael Scott Watkins Award for Outstanding Graduate Student Teaching.

**Dr. Stephen H. Sheck**, who earned his B.S. in Biology and M.S. in Biology under the direction of Dr. Gene Fleharty was honored with the Alumni Achievement Award from the FHSU Alumni Association. This award recognizes graduates with exceptional service contributions to their community, state or the nation. Dr. Sheck is currently Dean of the College of Liberal Arts and Sciences at Western Oregon University, and is stated to be "...an outstanding manager, scholar, teacher and leader with a strong commitment to the liberal arts..." by Dr. Jem Spectar, former provost of WOU.

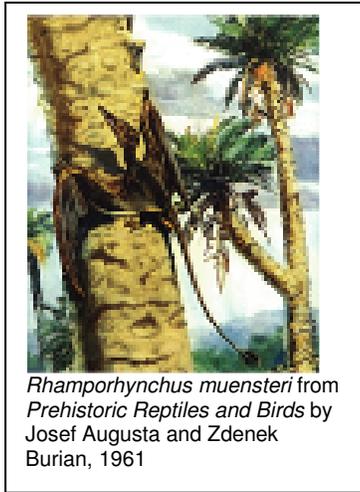
**Biological Sciences Seminar, October, 2008**  
**“Consequences and Tradeoffs in Managing Rangelands for Heterogeneity”**

**Dr. Justin Derner: USDA-ARS, Cheyenne, WY**  
 ~ by Kevin J. Wood

Dr. Derner showcased the purpose of heterogeneity. It is important because it is the basis for conservation of diversity at broad scales. He distinguished between habitat fragmentation and heterogeneity. Fragmentation is non-natural disturbance that is novel to the ecosystem, and heterogeneity is management guided by knowledge of historical ecosystem drivers. In defending heterogeneity, he enumerated the aversion to its practice. For most people, predictability and constancy are important, which encourages moderate “management to the middle” practices. This causes an underrepresented number of habitats for wildlife. Other effects of heterogeneity based management include direct economic costs, increased risks, more flexibility, and greater drought mitigation. Land management scenario simulations were performed for SE Wyoming northern mixed grass prairie. By using a full spectrum of grazing intensity, he was able to use different plans to adjust costs and profits and parcel level heterogeneity.

Unlike many science presentations I've attended, this one avoided esoteric topics that had little application to the general community. With new technology, more people to feed, and much discussion of the effects of carbon on the environment, this topic appears very important to many people.

**Pterosaur Research in Europe: New Finds on Old Specimens**



*Rhamporhynchus muensteri* from *Prehistoric Reptiles and Birds* by Josef Augusta and Zdenek Burian, 1961

Dr. S. Christopher Bennett presented an overview of results of a long-term research program on the pterosaurs of the Jurassic Solnhofen Limestones of southern Germany and of a research trip to Germany and France last May. The trip was funded by the Graduate School Internationalization program, The College of Health and Life Sciences and The Biological Sciences Department.

**Biology Holiday Party**



**HAPPY HOLIDAYS!**



Tracy Towers