



Fall Semester 2009

Volume 8, Issue 1

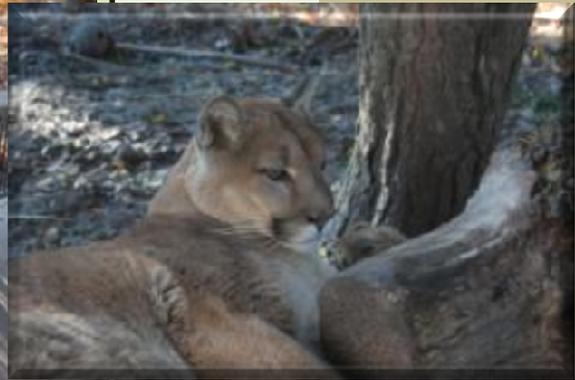
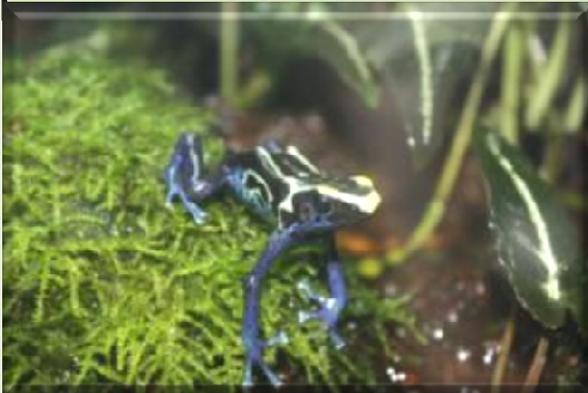
# The Natural Enquirer

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

## Mammalogy Class BIOL 651/651L ventures to Rolling Hills Zoo ~Katie Talbott, Photos courtesy Trey Towers



Mammalogy students viewing wildlife in a created setting (above). Among the many species observed were a Puma (*Puma concolor*, right) and a Yellow and Blue Poison Frog (*Dendrobates tinctorius*, below)



On Saturday, October 31, the Mammalogy class took a tour of the Rolling Hills Wildlife Adventure near Salina. Since it was Halloween, there was an outdoor concert in the zoo, performed by costumed high school students. The students were particularly fortunate to enjoy a lecture and behind-the-scenes look at the reptile house, courtesy of the older sister of one of the students, Tiffany Robben. Most of the animals were out and active, and the students particularly enjoyed the orangutan, anteater, lion and cougar exhibits.

---

*Inside:*

*Alumni News*

*Undergraduate Student Feature: Chelsea Hawk*

*Graduate Student Feature: Justin Hamilton*

*Much more!*

---

## In Memoriam ~ Hyunjoo Gim

*Hyunjoo “Julie” Gim died on November 5, 2009 of a brain aneurysm. Hyunjoo, a 29-year-old graduate student from Suwon, Republic of Korea, started graduate school in August 2009. She was studying pterosaurs under the supervision of Dr. Chris Bennett. Her death had a profound effect on the Department of Biological Sciences. Her infectious smile will be with us forever. ~Dr. Elmer Finck, Chair*



### ~ Comments made by Dr. Christopher Bennett at Hyunjoo’s Memorial Service at FHSU, November 18<sup>th</sup>, 2009

I first heard of Hyunjoo Gim in the Fall of 2008 when I talked to my Korean colleague, Dr. Jong-Deock Lim at the Society of Vertebrate Paleontology meetings in Cleveland. He told me he had a student who wanted to study pterosaurs, the flying reptiles of the Mesozoic Era, with me.

In her application essay, she wrote that she had always loved animals and particularly vertebrates, birds, lizards, tigers, and so forth. Then, when she was 15 she learned about evolution in school, and she became intrigued by the subject. Her interest continued, and in March 1999 she enrolled in Sung-kyun-kwan University in Seoul in life sciences. Then in 2001 she took a Comparative Vertebrate Anatomy course, and became convinced that she wanted to study vertebrate paleontology. In early 2002 she joined the Korea Institute of Vertebrates and began research in vertebrate paleontology under the guidance of Dr. Lim.

During college she joined Saram-sarang, a social welfare service club of the university, in which she served as Vice-President and helped orphans study at a center for poor students.

She also worked briefly as an assistant to the exhibit curator for the Dino World Adventure Exhibition, and then after graduating in February 2004 with a Bachelors of Science degree in Life Science, she immediately started working as a fossil preparator, preparing specimens for exhibit in various museums. That year she visited the University of Kansas in Lawrence, where she received special training at the Natural History Museum in the preparation of fossil vertebrates, and as a result she became the first trained fossil vertebrate preparator in Korea. She worked on all sorts of specimens, toothed and baleen whales, duck-billed and parrot-headed dinosaurs, sauropod and armored dinosaurs, ostrich-mimic dinosaurs, and even a large sea turtle.

Somewhere along the line, she became interested in pterosaurs, and in 2008 she visited a traveling exhibition of pterosaurs fossils in Tokyo, Japan, and that sealed it. She wanted to go to graduate school and study pterosaurs, and so on Dr. Lim's suggestion applied to FHSU to work with me.

With her passing we have lost, and I think the science of vertebrate paleontology that she loved has lost, because I believe that she would have been a success and made important contributions to the science.



Hyunjoo Gim with fellow graduate students

## Department Outreach and Professional Presentations

### FHSU Biology well represented at the Kansas Ornithological Society Annual Fall Meeting ~Dr. Greg Farley

Following tradition, the Kansas Ornithological Society hosted its annual fall meeting the first Saturday in October. We met this year at Hutchinson Community College. FHSU Biology was represented by undergraduate students Chelsea Hawk and Jordan Hofmeier; graduate students Justin Anderson, Elita Baldrige, Andrée Brisson, Alex Galt, Justin Hamilton, Ashley Inslee, Georgina Jacquez, Stephanie Kane, Trey Towers and Liz Waring, and Drs. Channell, Farley and Finck.

The scientific program was improved by excellent presentations by Alex (Influence of Vegetation on Avian Communities in Small Prairie Pothole Wetlands in Minnesota), Elita (Effects of Environmental Conditions and Distance from the Geographic Range Center on the Abundance of Avian Species), Justin (The Effects of Prescribed Burning on Grassland Nesting Birds on Conservation Reserve Program Areas in Gove County Kansas) and Stephanie (Detection and Trapping of Black Rails [*Laterallus jamaicensis*] at Quivira National Wildlife Refuge). Alex Galt received the Outstanding Student Paper Award (see sidebar), continuing a fine tradition by former biology graduate students. We also had two former graduate students (Tom Flowers '79 and John Schukman '74) present papers on their current ornithological research, as well as a presentation by Curtis Wolf ('05) on the new Wetlands Education Center at Cheyenne Bottoms, which he manages.

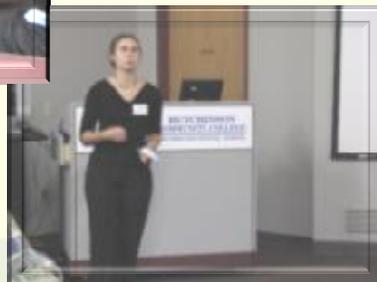
A final FHSU highlight was a chance to visit with Professor Emeritus Dr. Chuck Ely, who travelled from Nacogdoches, Texas.



Justin Hamilton, Stephanie Kane and Elita Baldridge presenting research at KOS



Alex Galt conducting field research at his sites in Minnesota



## KOS Outstanding Student Paper:

### Influence of Vegetation on Avian Communities in Small Prairie Pothole Wetlands in Minnesota

Alexander L. Galt and Elmer J. Finck

A "hemi-marsh" is a semi-permanent wetland with an emergent vegetation-open water ratio of 50:50. Research shows that the hemi-marsh condition has the most diverse avian communities. For this reason, the primary goal of many natural resource managers, throughout the Prairie Pothole Region (PPR), has been to manage existing wetlands and to restore drained wetlands in ways that support this condition. The literature does not address the influence of vegetation on semi-permanent wetlands that are less than 1 ha, yet there are thousands of these wetlands in PPR. We conducted avian surveys and a nest success analysis on 53 small (<0.5 ha), semi-permanent wetlands in the PPR of Minnesota to assess the influence of vegetation on avian communities. Our data showed a positive relationship between the proportion of emergent vegetation and avian diversity, as well as, between the proportion of emergent vegetation and nest success, which suggested that small, semi-permanent wetlands were functioning differently than larger wetlands of the same type. Small wetlands that were once referred to as "vegetation choked" and of low quality habitat are actually fully functional wetlands for avian communities. These results could have major management implications for resource managers in the PPR, because the monetary cost of managing and restoring wetlands, for the hemi-marsh condition, is often high.

**8th Annual Great Plains Infectious Disease Meeting at the University of Kansas School of Medicine**

**Genetic Analysis of Vancomycin-Resistant Gram Positive Cocci Isolated from Wild Songbirds.**

Shingo Ishihara and Eric Gillock.

Meeting also attended by undergraduate Holly Miller

**Kansas Native Plant Society, Pittsburgh, KS Response to flooding in invasive saltcedar (*Tamarix*)**

Kristen A. Polacik and Brian R. Maricle  
Mary Bancroft Scholarship winner

**Society of Wetland Scientists Annual Meeting, Madison, WI**

**Differences in photosynthesis and respiration due to flooding in native and nonnative wetland grasses of central Kansas.** Waring, E.F. and B.R. Maricle.

**Soil Ecology Society Biennial Meeting, Burlington, VT**

**Soil microbial community alterations with disturbance in shortgrass steppe and northern mixed-grass prairie rangelands.** Jordana LaFantasie, Caley Gasch and Stephen Enloe

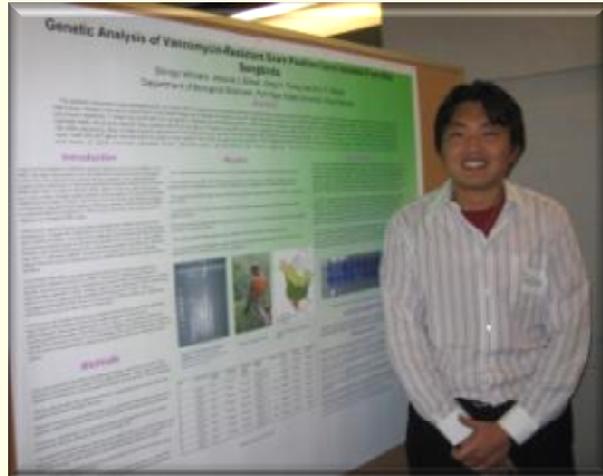
**Combined 69th Annual Meeting of the Society of Vertebrate Paleontology (SVP) and 57th Symposium of Vertebrate Palaeontology and Comparative Anatomy (SVPCA) in Bristol, England**

**The pectoral girdle of *Pterodactylus antiquus*—evolving toward the advanced condition.**

Christopher Bennett

**Kansas Herpetological Society Meeting**

Attended by Dr. Bill Stark, Ashley Inslee, Aaron Makovic, Ryan Schofner, Brian Sowards & Sarah Rages



Shingo Ishihara presents his research at the 2009 Great Plains Infectious Disease Meeting at KU Medical Center



Students and Dr. Greg Farley providing demonstrations at the Quivira NWR Open House Event



**Quivira National Wildlife Refuge Open House ~Dr. Greg Farley**

Biology students and faculty assisted with the annual Quivira National Wildlife Refuge open house on Saturday, October 10th. The event is hosted by the Friends of the Refuge group and consists of tours, demonstrations, supper and a visiting speaker. Greg Farley and Bill Stark were accompanied by graduate students Elita Baldrige, Alex Galt, Justin Hamilton, Georgina Jacquez, Stephanie Kane and Kristen Polacik for the fun-filled event on a beautiful fall day. We had a display of student research posters on animals, microbes and plants in an effort to inform the public of ongoing research discoveries in FHSU Biology. We also had a display table with bird skeletal material, study skins and mounted birds that the students used to educate interested visitors, and a demonstration on mist-netting, identifying and measuring birds. A few snakes we encountered also 'volunteered' to participate, and were enjoyed by both the biologists and visitors!

## Central Plains Society of Mammalogists

The faculty, students, and alumni from FHSU continue to be a major force in the CPSM. Seventeen individuals attended the 20<sup>th</sup> annual meeting of CPSM in Emporia, KS at Emporia State University on October 9 and 10, 2009. Three graduate students gave presentations. Justin Anderson gave an oral presentation entitled "Effects of burning and grazing treatments on small mammals in Central Platte River Valley, Nebraska". His co-authors were: Dr Elmer J. Finck from FHSU and Dr. Felipe Chavez-Ramirez from the Whooping Crane Maintenance Trust in the Platte River Valley of Nebraska. Georgiana Jacquez gave an oral presentation entitled "Climate change: future implications for montane mammal distributions". Her co-author was Dr. Rob Channell from FHSU. Jennifer O'Neill gave a poster presentation entitled "Variation in the southern short-tailed shrew (*Blarina carolinensis*): A preliminary report." Her co-authors were Dr. Jerry R. Choate, Emeritus Faculty, FHSU, and Dr. Elmer J. Finck. Katie Talbott, an FHSU graduate student, serves as the student representative on the Board of Governors. Dr. Rob Channell serves as Webmaster and is a member of the Board of Governors. Dr. Elmer J. Finck, a co-founder of the CPSM, finished a replacement term as Past-President and as a member of the Board of Governors. Dr. Jerry R. Choate received the Outstanding Service Award. Four of Dr. Choate's former students are active member of CPSM: Brian Bartels, Educator at the Sternberg Museum, serves as Secretary/Treasurer and serves on the Board of Governors, Dr. Vicki Jackson, assistant professor of biology at Central Missouri State University, served as President and member of the Board of Governors, Dr. Lynn Robbins, professor of biology at Missouri State University, is the Missouri representative on the Board of Governors, and Dr. Greg Wilson, assistant professor of biology and executive director office of research and grants at University of Central Oklahoma, is the Oklahoma representative on the Board of Governors and served as Chair of the Outstanding Service Award Committee

## Graduate Student News



As a surprise gift after passing his orals, Shingo and Dr. Gillock received their newly tie-died lab coats from Stephanie Kane and Kristen Polacik.

### Oral Examinations

Congratulations to graduate students successfully passing their oral examinations this fall!

Georgina Jacquez - 9/14	Shingo Ishihara 10/23
Elita Baldrige - 9/18	Lizz Waring 10/26
Trey Towers - 10/12	Jason Black 10/30
Justin Anderson 10/15	Alex Galt 11/06

## FHSU Graduate Student Awards



Outstanding thesis awardees with their major advisors. From left, Dr. Farley, Christian Edwards, Dr. Stark, David Bender, Claudia Carvalho, Dr. Gillock. Not pictured, Shannon Nilz, Jerad Gorney

Congratulations to the awardees!

### Outstanding Thesis Award

- Claudia Carvalho
- Jerad Gorney
- David Bender
- Christian Edwards: Honorable Mention
- Shannon Nilz: Honorable Mention

### Graduate Teaching Assistant Award

- Alex Galt

## Thesis Defense

Congratulations to Ryan Schmitz for successfully defending his thesis entitled:

‘Spatial and temporal patterns of bald eagle (*Haliaeetus leucocephalus*) winter habitat use along the Upper Mississippi River corridor’



Graduate Student Stephanie Kane holds her study species, the black rail (*Laterallas jamaicensis*), on which she presented data at the Kansas Ornithological Society meeting this fall.

---

“Biology has at least 50 more interesting years.”  
~James Watson

---

## Graduate Student Feature ~ Justin Hamilton

Justin Hamilton grew up in Kirksville, Missouri. His interest in wildlife started at an early age while hunting with his family. Justin received a Bachelors of Science degree in Wildlife Ecology and Conservation from Northwest Missouri State University in the spring of 2007.



Justin Hamilton at his research field sites in Gove County, KS

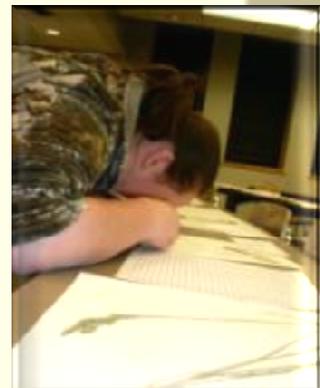
While working on his undergraduate degree Justin held several seasonal positions with various conservation agencies such as the United States Fish and Wildlife Service, the Missouri Department of Conservation, and the University of Missouri. Justin started graduate school at Fort Hays State University in the fall of 2007. His thesis involves working with the Kansas Department of Wildlife and Parks studying the “Effects of prescribed burning on grassland nesting bird in Gove County, Kansas.” Justin will be defending his thesis in the spring of 2010 and hopes to work at the state or federal level as a wildlife biologist.

# Undergraduate Student News

➤ Undergraduate sophomore Holly Miller and Dr. Eric Gillock received a grant from the Kansas IDeA Network of Biomedical Research Excellence (K-INBRE) for their proposal entitled "Analysis of Invertebrate Organisms for the Presence of PrP Prion Genes"

## FHSU Rangeland Plant Identification Team to Compete at Society for Range Management/Weed Science Society Joint Annual Meeting

Four students with strong initiative, talent and a love for plants and rangelands have formed the Fort Hays Rangeland Plant Identification team and will compete at the annual Society for Range Management International Meeting in Denver, CO in February. Coached by Dr. Jorge LaFantasie, who also competed on a Range Plant ID team as an undergraduate, these four students are learning minute characteristics of 200 of the most common rangeland plant species in North America. The contest covers species from Chihuahua, Mexico to Alberta, Canada, and from Illinois to California, and all of the rangelands in between. They need to be able to identify these species in a pressed



Jessica Casey confirms the identity of a specimen using a high-powered handlens



Rangeland Plant ID team members Keanan Kroetch (above), Jessica Casey (not pictured), Zachary Roth (above right) and Chelsea Hawk (far right) take a tough quiz during practice



and dried state, in any phenological stage and from nearly any portion of the plant's aboveground anatomy. A daunting task, but these students are up to the challenge. They will travel to Denver for the meeting to compete in this and another contest, the "Undergraduate Range Management Exam," in addition to attending symposia, technical sessions

and numerous networking and job seeking opportunities. Good luck, Plant ID team!

➤ Michael Bagwell, senior undergraduate biology major, was admitted to the Doctor of Physical Therapy program at the University of Kansas!

## Undergraduate Student Feature: Chelsea Hawk



---

“It’s a lot of time and effort but it’s definitely worth it!”

---

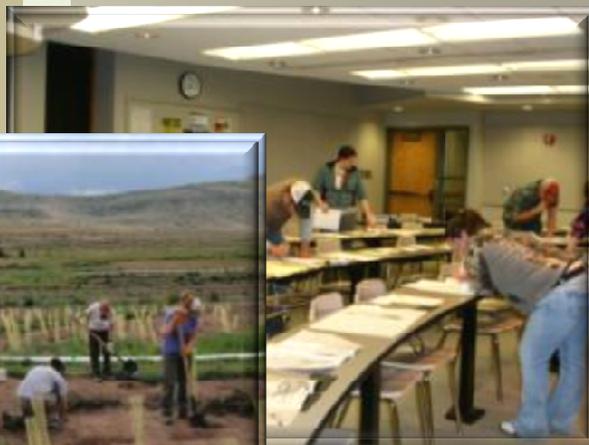
Originally from Hays, Kansas, Wildlife Biology Senior Chelsea Hawk grew up in an active, outdoorsy family that camped, boated and made a lot of trips to Colorado. This outdoor oriented childhood played a major role in her interest in biology; enough that when asked, she states, “I just couldn’t see myself doing anything else!” She began her academic career in biology at Western State College in Gunnison, Colorado and returned to FHSU her sophomore year. Two years later she is preparing

to graduate this spring and move forward in her career; ideally she would like to work for a federal agency as a field/wildlife biologist with emphasis on research and field work in the mountains. She considers graduate school to be a potential option in the future, but would like to add to her field experience first.

Chelsea is very active in the department and elsewhere. She participates in Biology Club, helped with Ecomeet at the Sternberg Museum and belongs to KOS, CPSM, SRM and the FHSU Range Plant Identification team. At Western State, she also belonged to the Women’s Snowboard Club!

She is working on a research project in collaboration with Stasya Berber, Ryan Shofner and Katie Wildgen that aims to tease apart subtle size differences in spikelets of *Eragrostis trichodes* and *E. spectabilis*. Their results, based on 400 samples, will help land managers to better understand the key characteristics necessary for separating the two species when they are collected in less than ideal condition.

She provides the following sage advice to new biology majors: “Get involved and try new things! Don’t be afraid to spend time at school and ask for help when needed. Get to know as many people as possible and take time to study...especially for biology students. It’s a lot of time and effort but it’s definitely worth it!”





# Faculty News

## Publications

Maricle, B.R. and A.M. Pfeifer. 2009. Ascorbate concentrations and osmolalities in orange and apple juices. *Transactions of the Kansas Academy of Science* 112:77-86

Pfeifer, A.M., R.W. Lee, and B.R. Maricle. 2009. Effects of diet, drugs, and activity levels on  $\delta^{13}\text{C}$  of breath and hair of humans. *Transactions of the Kansas Academy of Science* 112:150

Polacik, K.A. and B.R. Maricle. 2009. Response to flooding in invasive saltcedar (*Tamarix*). *Transactions of the Kansas Academy of Science* 112:150

Waring, E.F. and B.R. Maricle. 2009. Effects of flooding on light harvesting and  $\text{CO}_2$  fixation in native and nonnative wetland grasses of central Kansas. *Transactions of the Kansas Academy of Science* 112:157

Hone, D. W. E., C. Sullivan, and S. C. Bennett. 2009. Interpreting the autopodia of tetrapods: Interphalangeal lines hinge on too many assumptions. *Historical Biology*, 21:67-77

Bennett, S. C. 2009. The pectoral girdle of *Pterodactylus antiquus* — evolving toward the advanced condition. *Journal of Vertebrate Paleontology*, 29(Suppl. to #3):61A

## Monies Awarded

### Elizabeth F. Waring

Fleharty Fellowship recipient, 2009-2010  
KAS Student Research Grant, 2009, \$1000  
WSSA Student Travel Grant, 2010  
FHSU Graduate School travel grant, \$250  
FHSU Graduate School mini-grant, \$249

### Elita Baldrige

Fleharty Fellowship recipient, 2009-2010

### Kristen A. Polacik

KAS Student Research Grant, 2009, \$922  
KNPS Mary Bancroft Scholarship, 2009, \$1000  
WSSA Student Travel Grant, 2010  
FHSU Graduate School mini-grant, \$200

### Shingo Ishihara and Dr. Eric Gillock

Grant from the Kansas IDeA Network of Biomedical Research Excellence (K-INBRE) for their proposal entitled "Genetic Analysis of Vancomycin-Resistant Gram Positive Cocci Isolated from Wild Songbirds"

## Introducing:

New Kansas Wetlands  
Education Center Manager

In July 2009, Curtis Wolf took over as site manager at FHSU's Kansas Wetlands Education Center at Cheyenne Bottoms. The KWEC was opened in April 2009 and is operated as a branch museum of Sternberg Museum of Natural History. Curtis received a Bachelor of Science degree in Biology (Wildlife and Fisheries emphasis) at FHSU in 2002 and his Master of Science degree in Biology at FHSU in 2005, studying freshwater mussels. Before taking the job at the KWEC, Curtis was a biology instructor at Barton County Community College in Great Bend. In addition to supervising the day-to-day operation of the facility, Curtis supervises a staff, including 4 FHSU Department of Biological Sciences graduate students. Curtis saw the KWEC job as a wonderful opportunity to combine his passions of biology and education. He also was excited to come back to work for his alma mater and the faculty of the Department of Biological Sciences. Curtis lives in Great Bend, KS.



# Alumni News

**Brad Austin** graduated in the spring of 2008 with my masters in biology His research project was ecology-based; he investigated how desiccation of stream beds affects nitrogen cycling. He was recently accepted to a PhD program at the University of Arkansas in Fayetteville, in the Department of Biological Sciences. His major advisor is Dr. Michelle Evans-White, who also served on his master's thesis committee. His PhD project aims to understand how drilling for natural gas is affecting streams in Arkansas. He will be measuring metabolism as an indicator of stream health.



Brad Austin, FHSU Biology Alum

Dr. Eric Gillock and graduate student Shingo Ishihara attended a seminar at the Division of Biology at Kansas State University about capsular polysaccharides and genes involved in the evasion of immune response by the bacterium *Enterococcus faecalis*. The seminar was presented by former FHSU Biological Sciences student Lance Thurlow (B.S. 2002, M.S. 2005) and represented the public portion of the defense of his Ph.D. dissertation. Congratulations, Dr. Thurlow!



Streak plate and electron micrograph (4400x, right) of an organism isolated from salt crusts at Quivira NWR (above) by Claudia Carvalho

## Recent Biology MS

Graduate, Claudia Carvalho, who studied "Cultivation and Characterization of Halophilic Bacteria from Quivira National Wildlife Refuge" has secured employment with Baylor University in Waco, TX as the microbiology teaching lab coordinator, with an option to commence work on her PhD. Congratulations, Claudia!

## FHSU Biology MS Graduate honored with FHSU Alumni Achievement Award ~Julie Ballenger, PhD

Dr. Ballenger graduated with an MS in Biology in 1988. She is currently professor in the Biology Department at Columbus State University in Georgia and has acquired numerous titles and awards during her career. During her visit to the FHSU campus, Dr. Ballenger presented "A Road Less Traveled: Incorporating International Field Experiences into a Biology Curriculum," which detailed a highly successful program instigated and directed by herself and a colleague. The program provides overseas experiences in biology to both majors and non-majors at Columbus State University in exotic and diverse locations such as Africa, Costa Rica and Australia. Congratulations on your award, Dr. Ballenger!

# Conservation Leaders for Tomorrow

Conservation Leaders for Tomorrow, held at Ringneck Ranch near Tipton, KS, was attended by Biology graduate students Stephanie Kane, Kristen Polacik and Ashlee Inslee and Dr. Joe Thomasson.



From left, Stephanie Kane, Dr. Thomasson, Kristen Polacik and Ashlee Inslee (below).

“Play is the beginning of knowledge.”

## Finals Week Festivities

(photos courtesy of Trey Towers)

### Biological Sciences Holiday Party



Flannel Friday! Faculty and Graduate students adorned in their flannel on a cold winter day in December.

