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FACULTY HAPPENINGS

Biological Sciences was fortunate to have three faculty members receive awards recently from the university and college for their outstanding performances this past year in their roles in teaching, advising, and research. Dr. Elmer J. Finck was presented with the FHSU Outstanding Faculty Member of the Year Award for 2005-2006, Dr. Eric T. Gillock was named the FHSU Edmund Shearer Faculty Advisor of the Year for 2005-2006, and Dr. Joseph R. Thomasson was awarded the College of Health and Life Sciences 2005-2006 Outstanding Scholar Award.

Dr. Eric Gillock was recently named an adjunct Clinical Associate at St Luke's Hospital of Kansas City as a result of renewing the Clinical Laboratory Sciences agreement between St Luke's and FHSU.

Dr. Jerry Choate was presented the Joseph Grinnell Award for Excellence in Education in Mammalogy at the recent annual meeting of the American Society of Mammalogists (ASM). Choate has been a museum curator and director more than 30 years and has educated mammalogists for nearly 40 years. He has been author or coauthor of nearly 200 publications and was previously awarded the C. Hart Merriam Award by the ASM. It was not until he attended the annual ASM meeting in June that he found out about the award.

"I was having a glass of wine at the ceremony after the banquet and only halfway paying attention as they began to give out awards," said Choate. "Suddenly their words started to sound familiar as they began talking about me and when they announced my name I was speechless. I decided to have a couple more glasses of wine to celebrate."

The Grinnell Award honors ASM's 10th president, Joseph Grinnell, who was the person responsible for introducing mammalogy as an academic pursuit at American universities. The award is awarded to individuals who have made outstanding and sustained contributions to education in mammalogy over a period of at least 10 years.

"This award goes beyond education of students, it's also about educating the general public," said Dr. Jeff

Briggs, dean of the College of Health and Life Sciences. "Dr. Choate's ability to weave instruction, scholarship and service seamlessly into his work establish him as an exemplar of the university professor."

The award consists of a plaque resembling an open book. On the left page is the ASM's emblem and on the right is a message inscribed about Choate. It reads:

"The Joseph Grinnell award for excellence and education in mammalogy is presented to Dr. Jerry R. Choate in recognition of his roles as a teacher, mentor and museum director at Fort Hays State University in which he has shared his knowledge of and enthusiasm for the study of mammalogy for over 35 years. He has been an inspiration to thousands of learners of all ages."

"It's a wonderful honor that I never expected," said Choate. "Out of all the awards the ASM offers, this is the one I wanted the most."

The previous article was modified from a press release from the Office of University Relations.

Dr. Jerry Choate, FHSU mammalogist and Director of the Sternberg Museum of Natural History, was appointed a Research Associate of the Indiana State University Center for North American Bat Research and Conservation. This new organization was founded in part by former FHSU graduate student Dr. Dale Sparks, who now is a member of the research faculty at Indiana State University. The dual mission of the Center is conservation and education with respect to bats.

Dr. Joseph R. Thomasson was asked by the Field Museum in Chicago to provide duplicates of fossil specimens he has collected during his studies in order to "make the Field Museum to be a duplicate repository for your research material". He has agreed to do so, and has sent two boxes of more than 300 specimens that will be permanently housed in the Field Museum collections. Dr. Ian Glasspool, a paleobotanist and curator of the paleobotany collections at the Field Museum, recently told Dr. Thomasson that donating the fossils will "enable us to showcase grasses to the public during Members Night and other behind the scenes events...".

Dr. Joseph R. Thomasson recently completed the initial phase of an SEM study of several rare fossils collected by Oswald Heer in 1852. The fossils, thought perhaps to be grasses, are currently housed at the Department Erdwissenschaften, Zurich, Switzerland, and are being examined as part of a study by researcher Gerard Second at the Centre IRD in Montpellier, France. His study hopes to trace the origin and evolution of grasses related to rice, and he asked Dr. Thomasson for his expertise in determining the exact identification of the fossils.



Probable fossil monocot leaf collected by Oswald Heer in 1855 in Miocene sediments in Austria. Upper fossil leaf is about 1 cm wide. This was one fossil examined by Dr. Thomasson with the scanning electron microscope.

While Dr. Thomasson was able to report to him that the initial fossils examined are probably monocots, not enough detail was preserved on them to conclusively identify the fossils as grasses.

Travel Opportunity to New Zealand In Early Summer 2007

In summer 2005, Dr. Mary Morgan participated in an anthropology course in New Zealand, and also spent a week in Tasmania. Last summer she took two students on a Biology course in the Natural History and Indigenous Peoples of Tasmania and New Zealand. In 2007, the course will be offered again with a focus on Ecology in New Zealand. Participants will help monitor kiwi re-introduction at a 32,000 acre fenced reserve, collect data related to the effect of removing mangroves from an estuary, and spend three days assisting with research in a Marine Reserve. An evening will be spent with the Maori, learning about their culture and their very strong interest in conservation. There will be

opportunities to snorkel or scuba dive, visit active volcanic areas and observe birds, whales, dolphins and seals. An optional extension features a week in Tasmania, where you can pet devils and wombats, follow an aerial walkway in the Tasmanian World Heritage Area, take the 100-meter slide into the Dismal Swamp, and participate in twilight tours to see platypus and other indigenous fauna in the wild. Be sure to check the next issue for photos from the 2005 and 2006 trips along with an itinerary and pricing!

In April the 79th annual convention of the Kansas Associated Garden Clubs, Inc. was held in Hays with national officers from Wisconsin and Colorado in attendance. One of the main events of the convention was a tour of the Elam Bartholomew herbarium given to the group by Dr. Thomasson. In recent years the Kansas Associated Garden Clubs, Inc. has provided a number of scholarships to graduate and undergraduate students studying in botany oriented fields in our biology department. Many thanks for their support.

ALUMNI HAPPENINGS

Fiery Concerns for an FHSU Alumnus

This following are excerpts from an article that originally appeared in Audubon Magazine in September 2003. Dr. Linda Kennedy grew up in rural Kansas and received BS and MS degrees in biology from Fort Hays State University.

In less than an hour, flames had reduced nearly 8,000 acres of grasslands to smoldering stubble and ash. Still, this historic blaze, undoubtedly centuries overdue, may have been the salvation of a unique and little-known ecosystem in the highlands of southeastern Arizona.

When Dr. Linda Kennedy drove through the ranch gate, she saw a wall of dust and smoke heading her way. She doesn't remember feeling scared or brave but she did keep driving. As Kennedy neared Bald Hill, a grassy knoll in a rolling open valley that stretches up into southern Arizona's huachuca and mustang mountains, it became obvious that the fire, fanned by rapidly shifting, 40-mile-an-hour winds, was racing forward on both sides of the road, mowing down the ranch's expansive grasslands. Rather than reversing course, Kennedy hit the accelerator, squinted harder through the fog of soot, and roared down the rocky, dirt-crustured two-and-a-half-mile driveway toward the ranch buildings.

"I didn't want the fire to be chasing me!" she recalls. Flames danced around her Ford Explorer, and the smoke turned steering into an act of faith. "There was only one place I was afraid I might get trapped, and that was a curve with trees on both sides of the road. The

undergrowth was burning, but none of the trees had fallen, so I had no problem getting through."

That was about noon, on April 30, 2002, the day a wildfire blazed over 90 percent of Audubon's Appleton-Whittell Research Ranch, an 8,000-acre grassland sanctuary in the Sonoita Valley of Arizona, where Kennedy lives full-time as the Assistant Director. At once rugged and slightly built, she is a plant biologist and 51-year-old grandmother who looks 10 years younger.....

Read the rest of this intriguing article in Audubon Magazine, September 2003 or at <http://magazine.audubon.org/features0309/fire.html>.

FHSU Alumnus Presented With National Park Service Award

*The following was taken from the Grand Island Independent newspaper on 26 June 2006. Original title: A Friend to Nature
Written by: Robert Pore*

When Robert Harms learned he was recipient of the National Parks Service's Friends of the Missouri River Award, he was working on the river he's trying to preserve.

"I was completely surprised and very honored," said Harms, who is the lead fish and wildlife biologist for the U.S. Fish and Wildlife Service's Nebraska Ecological Services Office in Grand Island.

The distinction was given to him by the staff of the Missouri National Recreational River office in O'Neill. The honor recognizes Harms' longstanding efforts in promoting, protecting and enhancing parts of the Missouri River in Nebraska and South Dakota. It has been designated by Congress as a wild and scenic area with unique natural values.

According to Paul Herdren, who heads up the O'Neill office, during the past year, Harms has assisted the National Parks Service on a number of difficult natural resources issues, several complex federal environmental protection law matters and coordination with an array of federal, state, and local agencies and individuals. Harms gives a lot of credit for the accomplishments on the Missouri River to the staff of the Missouri National Recreational River. "Them giving me this award really meant a lot to me because there are a lot of committed folks with the National Parks Service that work on the Missouri River," Harms said. "It was very flattering to get the award and being acknowledged as part of the team up there."

Trying to restore and maintain a natural balance on a river like the Missouri, which has been dramatically altered by man, is challenging. "On big river projects, there is always a lot of interests involved that bring in a diverse group of people," he said. "Sometimes there are misconceptions and miscommunications that sometimes add to the difficulties."

What makes the Missouri National Recreational River unique to Harms is that it offers a natural beauty ranging from the forested buff-colored chalkstone bluffs to gently rolling range bottomland with its own assortment of plants and animals. The goal is to restore this part of the river to be much the same as it was for the Plains Indian tribes and what Lewis and Clark first saw. "It is really a unique segment of the Missouri River," Harms said. "It is relatively a wild river." Its ever-changing nature encompasses islands, shifting sandbars, sloughs, and treacherous, deadly snags.

Harms has worked closely with the National Parks Service on the Missouri River for the last five years. He has also been a biologist for the U.S. Fish and Wildlife Service for the last five years.

A native of Iowa, he received his Bachelor of Science degree in biology from Buena Vista College in Storm Lake, Iowa, and his master's degree in biology from Fort Hays State University in Hays, Kan.

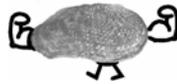
Harms "I have always wanted to be a biologist as long as I can remember," Harms said. "When I was in high school, it was a dream of mine." A youthful love of fishing and hunting along the river led to his desire to be a biologist.

Harms received his master's degree in 1992 and went to work for the Missouri Department of Conservation. He also worked as a biologist for the Army National Guard in Missouri, managing natural resources at Guard training sites. Prior to working for the U.S. Fish and Wildlife Service, he worked for Nebraska Game and Parks as a biologist. Along with his conservation work on the Missouri River, Harms has also worked on the Platte River. Harms is motivated in his work as a biologist by the knowledge that these resources he works to protect are for the public's benefit.

GRADUATE STUDENTS

Graduate student Cody Thompson presented the results of his research at five professional meetings during the spring and summer of 2006. His paper or poster, titled "Identification and characterization of the contact zone between two species of short-tailed shrews (*Blarina*) in southern Iowa and northern Missouri," was presented at the annual meetings of the Kansas Chapter of The

Wildlife Society, the Kansas Academy of Science, the Iowa Academy of Science, and the American Society of Mammalogists as well as at the Sigma Xi Science Research Showcase, which was held on the campus of Fort Hays State University. Coauthors of the presentations were Drs. E. J. Finck, J. R. Choate, and H. H. Genoways (University of Nebraska).



Pistolgrip Mussel Update:

Seasonal Movement of the Pistolgrip Mussel (*Tritigonia verrucosa*)

By Eric Starkey
September 2006

After a successful 12 months of data collection our last sample was completed in July. July was a good sample since we recovered 34 out of 45 individuals, or 76 % of all individuals remaining in the study site. Out of the 11 missing individuals 4 have not been seen since the onset of the study. The greatest distance moved by an individual between June and July was 2.16 meters. Individual 042 wins the award for the greatest distance traveled in one year, 38.81 meters! In May I analyzed some of the microhabitat data and found that water velocities at the substrate level and also at 6/10 of the depth are influential on mussel movement. In addition, substrate compaction seems to play a significant role in the distance individuals move.

Other summary statistics:

- No significant difference between male and female movement
- No significant difference in movement among cages of different densities
- Water Temperature and Discharge are significantly correlated with distance moved

I am currently in the process of analyzing the rest of the microhabitat data, and other summary statistics. Final results will be coming to a thesis defense near you, some time relatively soon..... To anyone that is interested: in the future it may be possible to return to the site and relocate individuals, all individual markings remain. In conclusion, I would like to thank everyone that participated in this project, your hard work and camaraderie has made this a great experience.

Ben Wheeler was awarded a \$300 student travel grant through the Kansas Chapter of The Wildlife Society to present a poster at the annual conference of The Wildlife Society this September in Anchorage, Alaska. The poster, entitled "Grassland bird response to grassed strips in agricultural fields" is on his thesis topic and is

coauthored by his advisor, Elmer J. Finck, and Randy D. Rodgers of the Kansas Department of Wildlife and Parks.

Massasaugas in Kansas

By David Bender

Massasauga rattlesnakes (*Sistrurus catenatus tergestinus*) are common vipers in eastern and central Kansas, yet very little is published on massasauga biology in Kansas. I spent the summer trapping massasaugas in central Kansas to gain insights on foraging activities between two populations occupying grasslands and wetlands. I hypothesize that snakes occupying different habitats will feed on different types of prey, possibly across orders. Snakes were captured in a grassland site 12 miles south of Ellsworth, Kansas and the marshland of Cheyenne Bottoms in Barton County.

Snakes were captured from May through August using several different techniques. Four arrays consisting of three-25 foot hardware cloth arms and ten funnel traps each were erected every week in both habitats to capture massasaugas passively. Transects were also walked throughout both study sites to increase sampling efforts and sample size. Finally, snakes were captured on perimeter roads surrounding the study sites, where the snakes congregate for thermoregulation.

Another key component of the research was to identify other "non-lethal" techniques to force regurgitation. Flushing, palpation, and refrigeration were performed on gopher snakes (*Pituophis catenifer*), common king snakes (*Lampropeltis getula*), prairie king snakes (*Lampropeltis caligaster*), racers (*Coluber constrictor*), and plains garter snakes (*Thamnophis radix*). The best technique from this part of the study will be used to retrieve contents from the massasaugas next field season.

I am also working with Dr. Lisle Gibbs from Ohio State University on a long term project with the genus *Sistrurus*. I collected venom and tissue samples from all of the rattlesnakes captured over the summer. Dr. Gibbs is comparing venom structures of different populations of rattlesnakes across the country.

I've spent fourteen weeks capturing rattlesnakes in Cheyenne Bottoms and Ellsworth counties. A total of 84 massasaugas have been captured. The results from the regurgitation techniques are also inconclusive, but further research will be continuing this fall and next summer. More updates to follow!

Rich Zwenger was awarded the Fleharty Fellowship for the 2006-2007 academic year and recently completed his oral examination. Congratulations Rich!

MEETINGS & WORKSHOPS

Mark Eberle was invited to present an Ecology and Evolutionary Biology seminar to about 40 faculty and graduate students at Kansas State University on 7 September 2006. His presentation on "Changes in Plains Streams Associated with Landscape Changes in Western Kansas: 1854-2003" provided a summary of long-term historical data on activities such as development of row-crop agriculture and construction of impoundments correlated with periods of changes in streams and their biota, specifically fishes and mussels, in a 66-county area of western and central Kansas. After the seminar, he visited with a group of faculty and post-docs at K-State about their current research projects on stream ecosystems in the central plains.

Dr Eric Gillock, Dr Eric Strauss, and graduate student Rich Zwenger attended the Joint Annual Meeting of American Society for Microbiology Missouri and Missouri Valley Branches and the Midwest Microbiology Educators Conference on April 7th and 8th in Kansas City Missouri.

Dr. Jerry Choate coauthored a poster with former FHSU graduate student Justin Hoffman (now a PhD candidate at the University of Nebraska) and Dr. Hugh Genoways (University of Nebraska) at the annual meeting of the American Society of Mammalogists. The poster was titled "Long-distance dispersal and population trends of moose in the central United States.

Dr. Jerry Choate was the initiation speaker for the FHSU chapter of The Honor Society of Phi Kappa Phi. His presentation was titled "Scholars and Service."

PUBLICATIONS

As part of his continuing, long-term research program on the evolution and systematics of the mammalian genus *Blarina*, Dr. Jerry Choate published a monograph titled "Taxonomy of short-tailed shrews (genus *Blarina*) in Florida." Coauthors for the publication were Dr. R. A. Benedict (Central University of Iowa) and H. H. Genoways (University of Nebraska).

UNDERGRADUATE RESEARCH

'Exotic' Research on FHSU Campus By: Ryan Williams

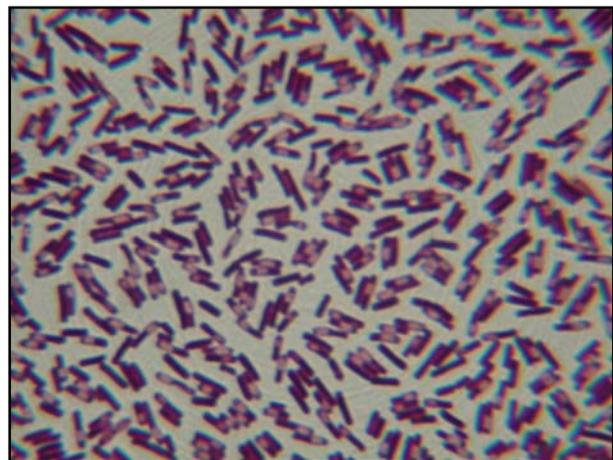
As a continuing project for the past 1 ½ years, Kyle Tutak and I, have been monitoring the apparent thriving introduced population of *Podarcis sicula*, (Italian Wall lizard), on the campus of Fort Hays State University.

Over the time period of the project, we improved our methods of capturing and marking the individuals, in turn these improvements will help us provide better estimates of the population size on the campus. This last semester, Spring 2006, has been the most productive trapping/capture period we have conducted, which can be accredited to our improved techniques and our ability to gain help from other individuals in the Fall 2006 Herpetology class.

The most recent capture period left us with a total of 89 individuals marked between Albertson, McCartney, Sheridan, and Picken Halls. The majority of these captures were hand captures by the several outings with the Herpetology class. The pitfalls contributed approximately 15-20 captures out of the 89 total. This might sound like a low number, but it was far more effective than other trapping attempts made by us in previous trapping periods with different techniques such as wire mesh funnel traps.

These 89 individuals were captured within a one month period from the end of March to the end of April. The best time for capturing seemed to be around late morning or early evening. During these times the lizards were most seen and were starting to slow down in activity which made capture easier. During our research, we also observed a large portion of the lizard populations going arboreal. They would climb to the tops of shrubs <4 feet high. We hypothesized that they were doing this to increase thermoregulation efficiency, decrease predation, and possibly increase their likelihood of finding food.

CLOSING PICTURE



This is a picture of the bacteria *Bacillus badius* isolated from a feedlot by graduate student Rich Zwenger for his research. It was identified by using the first 500bp of the 16S rRNA by MIDI labs.