



Bioluminescence



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Chairman's Corner



Dr. Jenna Hellack retired from the Department of Biology at the end of the spring semester, so you are seeing a new face on the front of Bioluminescence! As the new Chair, I have big shoes to fill, but I will try my best to be as effective an advocate for the faculty and students as Dr. Hellack was.

This year we will be evaluating our Master's Program and making changes we think are necessary to better prepare our graduate students for careers in teaching and research. I encourage those of you who went through the M.S. Program to give me feedback on anything we could be doing better. We will be continuing the work we began last year revising our Biology lecture and lab courses for non-majors. We will also be forming an Advisory Board made up of our "stakeholders", i.e. representatives from health professions, education, state agencies, etc. We now have about 1,000 Biology majors, but we still try to maintain small class sizes and be available to assist and mentor our students. We are trying to involve as many undergraduates as possible in research, and you will see in this issue that 78 papers or presentations over the past year had undergraduate or graduate students as authors or co-authors.

We welcome one new tenure-track faculty member, Dr. Martha Burford, who will fill the position vacated by Dr. Hellack. She is an evolutionary ecologist with a Ph.D. from the University of California Santa Cruz. Her research interests include molecular evolution of fish and marine invertebrates, population genetics, and conservation. You will hear more about her in a future issue of Bioluminescence.

As this goes to press, we have just received a taxidermy collection of about 125 African and North American mammals, and over the next year we will be mounting them throughout the building. The collection includes full-size specimens of animals such as a polar bear and African lions. You can look forward to an article in Bioluminescence next year about how we are using this collection for teaching and outreach. After we have the specimens displayed, we hope you can plan a visit to campus see them. We love hearing from you, and I encourage you to e-mail me at gcaddell@uco.edu.

The Guy from Elephant Mountain

by Bill Radke



Mr Joe Vaughan
July 10, 1932- January 15, 2011

It is difficult to know where to begin celebrating the life of Joe Vaughan. There are lots of stories that demonstrate his humanity, his caring and his strength. Many of us in the Biology Department were touched by his life and his friendship as he took us under his wing and helped us to be successful. For some of us he was the first person we came to know at UCO.

I really do not think Joe feared anything and he remains the most positive person I have ever met. Now, it is a good thing that he had no fear because in his travels through Texas, Mexico, Central America, Asia, Australia, New Zealand and the rest of the world he seemed to be little concerned with the details that many of us might have felt more comfortable knowing or planning. Somehow, though, it always worked out. He loved to fly and he clearly was part homing pigeon because his flight planning was not typically very thorough. However, even when he strayed into Mexico on an impromptu flight to South Texas, somehow he found his way out. I recall his only

reaction was a brief giggle.

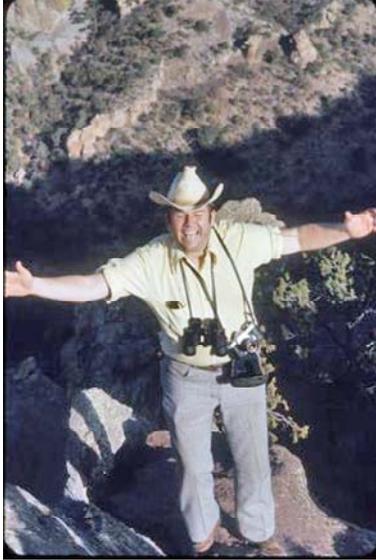
We all know about his diverse interests such as plant taxonomy, tissue culture, rodeo, helping Bill Caire net bats, helping me herd students along on countless field trips, and travel, travel and more travel. He wore out his vehicles in the time most of ours would still be under warranty.

Once you knew Joe you were immediately part of his family. Just as with much of the rest of his life, he was spontaneous with his friends. In the thirty five years we were friends and colleagues and the hundreds of times he stopped by to visit at my home...not once did I ever receive a phone call first. That was what made him so special. Now occasionally, his aversion to planning could cause problems; like the time Marvin Mays, Warren Smith, Joe and I took a dozen students to Big Bend only to discover Joe had not made reservations in the high elevation camp ground...instead we camped in the desert. It was 100 degrees at midnight...I don't think Joe even broke a sweat.

Joe was good at so many things. He was a natural as a pilot, an accomplished horseman, great at home improvement projects and auto mechanics. But his greatest skill was being a friend. If you needed help, support, or just someone to talk to, he was there. Case in point; about 10 years ago my family and I were in southeastern Oklahoma and hit a deer on our way back to Edmond. Our disabled vehicle was towed to Paris, Texas. Joe came to pick us up in a blinding rainstorm at 2:00 in the morning. He was always there for his friends. To my children he was simply "Uncle Joe."



Bill Radke, Marvin Mays, Jenna Hellack, and Joe Vaughan, circa 1981 in Sydney, Australia



We could argue politics and still part friends. We could have real disagreements and even when I was wrong, all I had to do was ask his forgiveness and it was always granted, immediately. He was headstrong and stubborn. Perhaps that is typical of West Texans. He was proud to be a Texan. And even though I could never tell the difference when he said “tar” or “tire” or “fire” or “far,” I learned about Midland, Odessa, Alpine, the Pecos River, the Davis Mountains and all things west Texas because of his enthusiasm. Talking about his home always made him light up.

On one trip to his *alma mater*, Sul Ross State University, we went into a local eatery. As we walked through the door I heard someone blurt out: “Hey it’s the guy from Elephant Mountain.” You see Joe was a legend in that area because of his love of the outdoors and his tenacity in the struggle to survive. After an accident in which a bullet passed through his abdomen perforating his colon, small intestine and liver, he had to walk for several miles down Elephant Mountain carrying his dog and then drove himself to a nearby ranch.

His strength, when life threw a curve, served him well when he lost his wife Linda to diabetes. Many would have given up. Instead, Joe filled his life with travel and academic pursuits as well as helping his many friends and offering support to his son Joe. He had many health challenges in his last few years but rose above them with strength and an indomitable spirit that we should all hope to be able to emulate. Though he is gone now he will live on in those whose lives he has touched and enriched.

The **Joe Ernest Vaughan Endowed Scholarship for Bioscience and Conservation** has been established in Mr. Vaughan’s memory by his son Joe Vaughan, Jr., and by individual gifts from alumni, family and friends. If you would like to contribute to this fund, please contact Melody Hansen (mhansen@uco.edu).

Dr. Jenna Hellack’s Retirement

Written by Gloria Caddell

In May, Dr. Jenna Hellack retired after 34 years of teaching Biology at UCO. During her last six years, she served as Chair of the Department of Biology. In April, we held a retirement picnic/party for her at which we “lightly roasted” her with a proclamation written by the faculty, and in May we honored her at a College of Mathematics and Science reception. We mentioned how for many years we choked on and swallowed her fruit flies, and how well she led us even though we were as hard to “herd” as those fruit flies! We teased her about her famous “look” that could quickly silence both students and faculty, and the bowl of Butterfingers she kept on her desk in an attempt to keep us so sweet that we couldn’t complain. We described her as the “Energizer Bunny” inside the Grumpy Bear sweatshirt that I am sure many of you remember her wearing.



We also expressed our appreciation for her contributions to the museum collections, her willingness to cover classes for us in our absence (especially if it involved dissections!), her provision of free lunches (even if only peanut butter crackers and diet cokes), her belief that it was



perfectly safe to keep an 8-foot boa constrictor in the department office, her deep concern about whether students were learning or not, her sense of humor, her honesty, and her sincere friendship and support. Dr. Hellack earned the respect of everyone with whom she worked, and led the department through a period of major changes to the curriculum that will have a positive impact on the education of our students for many years. She was an incredible role model, teacher, and leader, and we will greatly miss her.

Dr. Hellack is now spending more time on the tennis court, but will be teaching an on-line section of Evolution this fall for us as an Adjunct.

She is also doing research in Dr. Jim Thompson's Genetics lab in the Department of Zoology at the University of Oklahoma. If you would like to congratulate Dr. Hellack on her retirement or express your appreciation to her, you can e-mail her at jhellack@uco.edu. I'm sure she would enjoy hearing from you!

Amazon Adventure ***by Clark Ovrebo***



Five Biology faculty and two others visited the Peruvian Amazon rain forest on a nine-day natural history trip during May, 2011. Making the trip were Drs. Clark Ovrebo, Jenna Hellack, Gloria Caddell, Harold Cleveland and William Radke. Dr. Radke's wife, Chris, and Dr. Caddell's sister, Mary, also made the trip. By way of Lima, we flew to Iquitos, a city along the Amazon River. Iquitos is interesting because the only access to the city is by air or boat; there are no roads leading to it. From Iquitos, we travelled southward by boat on the Amazon and Tahuayo Rivers to the Tahuayo Lodge, an ecotourism facility.

Upon arriving we discovered that because of recent heavy rains the land was completely flooded. It is not unusual during the wet season for this to happen, but usually by May the flood waters have receded.

Fortunately, the lodge facility is built on eight-foot stilts so we had dry living quarters. We spent half of our trip at the main lodge and the remainder at the Amazonian Research Center.

Because of the flooding, nearly all of our activities were conducted by boat or dugout canoe. We were led by our guide, Christian, a superb naturalist, and his two assistants Nelly and Samuel. The main activity was bird watching and we began each morning with a trip at 6 am. Several avid birders were on the trip and kept records of the birds that we saw – about 159 species. Many were colorful like the Blue-and-Yellow Macaw, Paradise Tanager, Plumb-throated Cotinga and Oriole Blackbird. We also saw the primitive Hoatzin. Other birds were quite cryptic, including the Greater Potoo, which looks like a piece of dead limb while sleeping during the day.



Among the mammals we saw were six monkey species, including one of the smallest of all primates, the pygmy marmoset. We also saw what might be a new species of Saki Monkey. We were awakened each morning by the vocalizations of the Red Titi Monkeys. We saw numerous three-toed sloths and were delighted one day to watch a Tayra (weasel family) extract honey from a wasp nest, all the while fighting off wasp attacks. Butterflies were fairly common, including the brilliantly-colored Blue Morpho. We went fishing and caught two species of piranha – and ate them. Other creatures were

active at night. We saw the nocturnal Boat-billed Heron and Common Pauraque and observed many Fishing Bats skimming the water. One night Christian caught (by hand!) a three-foot Black Caiman. We also saw Pink-toed Tarantulas. The plant diversity was incredible as well and Dr. Caddell was busy learning the flora, although she was a little hampered by the flood conditions. We did have one opportunity to set foot on land. We made a trip to a nearby terra firme forest, a forest type that never floods, for a morning hike. There we saw two species of poison arrow frogs, a leaf cutting ant colony and rubber and mahogany trees.

Which organisms were under-represented on our trip? Mosquitoes! The area that we were in is a black water ecosystem called the Igapó. The river and flood water are about the color of tea because of the high tannin content. The acidic pH limits the mosquito populations. The mosquitoes, while present, were not that much of a nuisance.

The diversity of the rain forest is spectacular. Each trip out you can see something different, and no matter what your interests are, there is something for everyone to see. If you are interested in natural history, the rain forest is nearly unsurpassed for its bounty of flora and fauna. Why not plan a trip soon?



Peru Part II:

Three Biology majors, Zak Cooper, Jaime Thomas and Julie Truong, travelled to Peru, July 2-10, as part of a volunteer trip organized by Central's Volunteer and Service Learning Center and co-sponsored by the College of Mathematics and Science. These students, accompanied by **Dr. Clark Ovrebo** and five other CMS students, did volunteer work in a poor suburb of Lima. Half of the students volunteered at a pre-school and the others at a senior citizen center. In addition to their volunteer work the students had a chance to see historical and archaeological sites in the Lima area and experienced the culture and customs of a Latin American country. Check out this great [You Tube video](http://www.youtube.com/watch?v=juiAV1cGF4) summarizing the trip. If you can't link through the newsletter, here's the URL! (<http://www.youtube.com/watch?v=juiAV1cGF4>)

Studying Dragons in the Land Down Under ***Troy and Teresa Baird***

During a sabbatical leave in the fall of 2009, we travelled to New South Wales, Australia, to conduct field research on the social biology of eastern water dragons (*Physignathus lesueurii*). Australia is home to much diverse, fascinating wildlife, including numerous lizards. The largest Australian lizards belong to two families: the Varanidae, which the Aussies call “goannas”, and the Agamidae, known commonly as “dragons”. Although eastern water dragons are abundant throughout New South Wales, very few scientific studies have been published on this species. We collaborated with our colleague at the University of Sydney, Richard Shine, but spent most of our stay about 200 miles north of Sydney in the coastal town of Port Macquarie. During an earlier fact-finding trip we had located a population of water dragons there that were habituated enough to humans to capture and mark individuals uniquely (white nail polish numbers) for behavioral studies. Water dragons are large lizards (up to 1 kg) that, as the name suggests, live along the banks of freshwater streams and rivers. They are powerful swimmers that readily enter the water at night to sleep and during the day to escape their predators, which are larger goannas and pythons. Dragons are also excellent climbers, using their powerful claws to grasp tree limbs. They are primarily insectivorous, but also eat aquatic invertebrates such as crayfish, known locally as “yabbies”.



Our study site was the grounds of Flynn’s Beach Resort, where we worked throughout the Austral spring/early summer. This area is bisected by Wright’s Creek, the banks of which are home to numerous dragons. The grounds are a mixture of naturally vegetated “bush”, lawns, and cultivated plant beds. All are occupied by the dragons, which are nearly oblivious to humans. For our studies, we captured, measured, and marked 115 adult lizards using a noose on the end of a pole. There were also thousands of smaller juveniles present in this thriving population. Adult male dragons are easily recognized by three characteristics: pronounced reddish-orange coloration on the belly, much wider heads and larger jaw muscles than females have, and longer dorsal crests that project upward from the top of the head and neck. Application of pressure to the vent everted the hemipenes (lizard copulatory organ) from these males, a clear indication of their sexual maturity. Throughout our study, females were ripening and laying eggs, which we monitored by carefully palpating the abdomen.

Each day we censused the grounds and recorded the locations of individual lizards on a scale-drawn map of the site to determine the boundaries of home ranges and territories. Like most people, the resort guests had no idea that individuals of many lizard species occupy specific sites instead of roving widely. Hence, these guests were fascinated to see the same numbered lizards in the same areas each day. Indeed, many of the children staying at the resort made a game of finding their favorite lizards, shouting out when they did, and some even recorded lizard locations on self-made maps (our young field assistants!!). We also recorded daily focal observations which involve documenting all of the dragons’ activities, especially the social interactions of known individuals. Using both census and focal observation data, we documented the social structure of this species for the first time.

Our data show that 14 of the large males on the site aggressively defended territories from other males, and that several females (which were much less aggressive toward one another) resided on these territories. All of the male territories interfaced with Wright's Creek, but also extended outward onto its banks where males patrolled while performing frequent advertisement displays such as head raises and bobs or tail rolls, with high frequency (> 1 display/min). There were also several mature males that did not control territories, instead lurking inconspicuously in the peripheral areas and fleeing to refuge (usually the creek) when discovered by territory owners.



Early observations suggested that these two alternative tactics (territorial versus non-territorial) were plastic rather than fixed. In three instances, a large non-territorial male challenged and defeated a territorial male, and as a consequence of winning a single fight, this male evicted the former owner who then adopted subordinate, non-territorial tactics. We explored this phenomenon further by conducting controlled removal experiments. This involved capturing one territorial male and holding him off site for two days, monitoring the behavior of the remaining males in the area, and then returning the original owner to his territory. Results of these trials confirmed that the male social alternative tactics were indeed plastic. In response to all removals, one or two of the formerly non-territorial males moved in and began patrolling, advertising, and defending the area, only to be displaced by the original owner when we returned him. These shifts in social status were "decided" by dramatic, highly aggressive physical contests between the combatants that lasted as long as two hours and involved chases, head-to-head pushing matches (pictured above), wrestling, and clenching bites with their powerful jaws. We also conducted a series of experiments where we manipulated the ventral coloration (brown versus red) of a male water dragon. The results support the hypothesis that displays revealing the red ventral color function to signal highly aggressive intent in contrast to the less intense, but more frequent signals conveyed by head bobs and tail rolls.

In addition to our work on dragons, we made several fascinating local trips, and later following completion of our field studies travelled northward into southern Queensland. On one local trip we spent several hours walking through the coastal bush north of Port Macquarie with an aboriginal "bush tucker", an expert in the harvesting and preparation of the many edible, and water-retaining plants that grow along the New South Wales coast. During our solo hikes through natural areas, we saw and photographed many species: six-foot Lace's monitor lizards, several species of skinks (most numerous Australian lizards, some of which were a foot long), side-necked turtles, koala bears, kangaroos, and a spectacular array of very vocal birds, including kookaburras (known as the bushman's alarm clock because of their loud laugh-like calls), dense flocks of lorikeets, cockatoos and parrots, and bizarre looking tawny frogmouths. Because our third floor apartment had an excellent view of the Pacific Ocean, for several weeks we sighted breaching humpback whales making their



annual migration southward. During a boat trip, we saw several humpbacks close-up, the best view being a large male (60 ft long) that breached nearly completely out of the water no more than 100 ft from our boat!

For our last two weeks down under, we drove north along the coast for about 1000 miles as far as southern Queensland. Here we took a day boat trip to Lady Musgrave Island at the southern end of the Great Barrier Reef. Needless to say the fish, coral, and other marine life were spectacular! I counted twelve sea turtles in view from a single spot. Perhaps the most bizarre find, however, was the sticky island plants growing low along the ground that are adapted to ensnare birds that fall from nests above. The snared birds die and decompose there, which enriches the nutrient poor sandy soil enough for this plant to survive. Once back on the mainland, we visited the Durango tropical rain forest where we had our first up-close and personal encounter with leeches, and stayed at the spectacular O'Reileys eco-resort in Lamington National Park. Highlights of that site included glow worms, small kangaroo-like critters known as pademelons, leaf-tailed geckos, parrots (which invaded our room), male bowerbirds that decorate their nests with blue shells and stones (or anything else that was blue), and a very large python. One of our last stops was the preserve at Mon Repos where the loggerhead sea turtles come ashore to nest. During our guided night tour, we spent two hours watching a large female come ashore, dig her nest, and lay over 100 eggs. Even though we did and saw as much as possible, we travelled through only a very small part of Australia, which is similar in size to the U.S. That's a good thing; we'll have much to see and do when we return!

What's happening?

The Selman Living Lab

In September, construction of a new multiuse building at the SLL was begun. This building includes a small classroom, a kitchen, and restrooms. The building has been completed just in time to also serve as a safe haven during tornado season. It was the result of a NSF grant awarded to Dr. Caire.



SLL also hosted a Cave Search and Rescue Workshop on August 28-29. This workshop was taught by Tom Bemis and Pat Seiser, who have been involved with Carlsbad Caverns for many years as part of their search and rescue unit. Dr. John Bowen from Chemistry and Mr. Jerel Cowen from Kinesiology attended the workshop as well as staff from the Oklahoma Department of Tourism at Alabaster Caverns State Park and Boiling Springs State Park, two members of the Central Oklahoma Grotto, and members of a Fire Fighter training unit at Oklahoma State University. This was probably the first organized Cave Search and Rescue workshop taught in Oklahoma. This initial group of participants will be part of a response team that can be called upon to assist with searches and rescues at the SLL caves. Alabaster Caverns will be the SLL “go to responder” should there be a situation in one of the caves.

SLL is part of the Oklahoma Natural Area Registry. On September 11-12 Dr. Caire showed Dr. Priscilla Crawford, coordinator of the Oklahoma Natural Areas Registry, around the SLL. The Oklahoma Natural Area Registry program encourages landowners to conserve Oklahoma's biological diversity by becoming members of a voluntary land preservation association. Also at the SLL was Dr. Aaron Place's class from Northwestern Oklahoma State University. They stayed at the



SLL and searched for herps. Dr. Caire's mammalogy class was also in attendance and collected small mammals. They also toured the area, visiting Cargill Solar Salt Plant, the Cowboy Grave, and Little Sahara Sand Dunes and ended the trip watching an evening exit flight of Mexican Freetail Bats (approx. 1 million). A member of the Sierra Club and her family also joined in with the group. The Biology Club completed their work on a "MASH sign" at the SLL: a post with arrows indicating the direction and kilometers to several significant scientists' homes from the SLL. Dr. Steve Maier from Northwestern Oklahoma State University assists with Astronomy shows at the SLL as does the StarCreek Astronomy Society. Various scout groups and classes from other universities have been using the SLL this past year for ecological and other science activities.

Send donations to support the Selman Living Lab to:
 Dr. William Caire, Biol. Dept., Howell Hall, Univ. Central Oklahoma, 100 N. Univ. Drive, Edmond, OK 73034

Faculty News

Recent Publications

Baird, T.A. and *Curtis, J.L. 2010. Context-dependent acquisition of territories by male collared lizards: the role of mortality. *Behavioral Ecology* 21: 753-758.

*Bass, C.M. and **Bass, D.** 2011. Aquatic invertebrate community structure in water-filled bracts of *Heliconia caribaea* (Heliconiaceae) on Saba. *Living World, J. Trinidad and Tobago Field Naturalists' Club* 2011:60-65.

Butler, C. J., *Curtis, J.L., *McBride, K., Arbour, D. and Heck, B. 2011. Modeling the distribution of the dwarf palmetto (*Sabal minor*; Arecaceae) in McCurtain County, Oklahoma. *Southwestern Naturalist* 56: 66-70.

Caire, W. and **Loucks, L.S.** 2010. Loss in mass by hibernating cave myotis, *Myotis velifer* (Chiroptera: Vespertilionidae), in western Oklahoma. *Southwestern Naturalist* 55:323-330.

Caire, W., **Loucks, L.S.**, **Wilson, G.M.**, McDonald, B.K., Early, D.A. and *Payne, T. 2010. Annotated checklist of the mammals of the Four Canyon Preserve, Ellis County Oklahoma. *Proceedings of the Oklahoma Academy of Science* 90:19-27.

Caire, W., **Loucks, L.** and Graening, G.O. 2010. Checklist of the biota associated with the Selman cave system, Woodward County, Oklahoma *Proceedings of the Oklahoma Academy of Science* 90:29-38.

Carnes, B.A., Staats, D.O., **Vaughan, M.B.** and Witten, T.M. 2010. An organismal view of cellular aging. *Médecine & Longévité* 2:141-150.

Castillo Gámez, R. A., Gallo Reynoso, J.P., Villarreal, J.E. y **Caire, W.** 2010. Los mamíferos de Sonora *in* Diversidad Biológica del Estado de Sonora, México. eds. T. R. Van Devender and F. Molina-Freaner, Universidad Nacional Autónoma de México Hermosillo, Sonora.

Ceballos, G., Manzano, P., Méndez-Harclerod, F.M., **Haynie, M.L.**, Walker, D.H. and Bradley, R.D. 2010. Geographic distribution, genetic diversity, and conservation status of the southern flying squirrel (*Glaucomys volans*) in Mexico. Occasional Papers, Museum of Texas Tech University 299:1-15.

Cheesman, K. L., **Ewing, A. L.** and Cheesman, I. W. 2011. Report of the 2010 NAAHP Membership Survey: What is similar and what has changed in the past 5 years? The Advisor 31:6-13.

Ewing, A. L. 2011. *In* Carol Baffi-Dugan (Ed.), *Book Review: The Making of a Nurse* (1st ed., vol. 31, pp. 49-50). The Advisor/NAAHP.

Nordquist, R. E., Bishop, S. L., *Ferguson, H., **Vaughan, M. B.**, *Jose, J., *Kastl, K., *Nguyen, L., Li, X., Liu, H. and Chen, W. R. Immunohistochemical analysis of immune response in breast cancer and melanoma patients after laser immunotherapy. Proc. SPIE doi:10.1117/12.874875

Patton, T., **Butler, C.J.**, Bastarache, R.A. and Arbour, W.D. 2011. Trends from six years of spotlight surveys for American Alligators in southeastern Oklahoma. Proceedings of the Oklahoma Academy of Science (in press).

Stone, M. E. B., *Bates-Albers, L.M., *Gillespie, J.M., *Moore, S.D. and *Rising, B.D. 2010. *Kinosternon sonoriense* (Sonoran Mud Turtle). Hatchling behavior. Herpetological Review 41:214-215.

Stone, P.A., Stone, M.E.B., Stanila, B.D. and *Locey, K.J. 2011. Terrestrial flight response: a new context for terrestrial activity in Sonoran Mud Turtles. The American Midland Naturalist 165:128-136.

Stone, P. A. and Ligon, D.B. 2011. *Bufo punctatus* (Red-spotted Toad) and *Thamnophis cyrtopsis* (Black-necked Garter Snake). Prey-Predator. Herpetological Review 42:82-83.

*Telemeco, R.S., **Baird, T.A.** and Shine, R. 2011. Tail waving in a lizard (*Bassiana duperreyi*) functions to deflect attacks rather than as a pursuit deterrent signal. Animal Behaviour 82: 369-375.

*Wheeler, E. C., *Reid, M.T. and **Butler, C.J.** 2011. Ecogeographical variables associated with the presence of *Echinocereus reichenbachii* spp. (Terscheck ex Walp., Cactaceae) in the Wichita Mountains National Wildlife Refuge, Comanche County, Oklahoma. Proceedings of the Oklahoma Academy of Science (in press).

* denotes current or former students, and bold a current UCO professor

Recent Presentations

Baird, T. Social life in a dragon's lair: alternative male reproductive tactics, extreme takeovers, and the signaling role of dimorphic coloration. Presented to the Department of Ecology, Evolutionary and Organismal Biology at Iowa State University.

Baird, T and *Telemeco, R. Capital energy drives production of multiple clutches whereas income energy fuels growth in female collared lizards *Crotaphytus collaris*. Presented to the Nordic Society Oikos.

Baird, T.A. Stalking water dragons, turtle-headed sea snakes and other wildlife in eastern Australia. Bradford Village Assisted Living Center. June 20, 2011.

Bidlack, J. and Palmer, B. Oklahoma: Facts and Symbols. Arts Integration Conference at UCO. April 16, 2011.

Butler, C., *Stinedurf, J. and Kelly, J. 2010. Yellow Rails at Red Slough. Oklahoma Ornithological Society, Stillwater, Oklahoma. October 15-17.

Cheesman, K. L. and **Ewing, A. L.** NAAHP - A membership study 2010 (Poster). NAAHP National Meeting, Atlanta, GA. June 17, 2010.

Eisemann, A.E., Ramsey, S.R., Mendez-Harclerode, F.M., Bradley, R.D., Fulhorst, D.F. and **Haynie, M.L.** Assessment of genetic diversity within populations of *Neotoma albigula* (White-throated Woodrat) from Arizona, using microsatellite loci and mitochondrial D-loop sequence data. Texas Society of Mammalogists, Junction, Texas, February 25-27, 2011.

Eisemann, A.H., Mendez-Harclerode, F.M., Bradley, R.D. Fulhorst, C.F. and **Haynie, M.L.** Genetic variation at seven microsatellite loci in *Neotoma albigula* (white-throated woodrat) from Arizona. American Society of Mammalogists, Portland, Oregon, June 24-29, 2011.

Ewing, A. L. Collaboration between NAAHP and AOTA: How we can help each other? American Occupational Therapy Association Combined Program Directors & Academic Fieldwork Coordinators Meeting, American Occupational Therapy Association, Scottsdale, AZ. October 9, 2010.

Ewing, A. L. NAAHP National Meeting, Moderator, Plenary Session: Interprofessional Case Study and Panel Discussion – Parts one and two. NAAHP, Atlanta, GA. June 17, 2010.

Ewing, A. L. In tune with the health professions in changing times. Moderator: Music Therapy as a Career. SAAHP, Nashville, TN. April 8, 2011.

Ewing, A. L. How to Prepare for the Medical School Application Process. Summer Premedical Academy. OU Medical School, OUHSC. June 7, 2010.

- Haynie, M.L.**, and *Gerlosky, M. Genetic diversity within the northern grasshopper mouse (*Onychomys leucogaster*) in southern Texas. American Society of Mammalogists, Portland, Oregon, June 24-29, 2011.
- *Gurley, J., **Caddell, G.**, **Strawn, S.** and **Caire, W.** 2011. Effects of grazing history on morphological composition of biological crusts on a gypsum outcrop in northwestern Oklahoma. American Bryological & Lichenological Society, Roan Mountain State Park, Tennessee. June 22, 2011.
- *Gerlosky, M., and **Haynie, M.L.** Genetic diversity within the Northern Grasshopper Mouse (*Onychomys leucogaster*) in southern Texas. Texas Society of Mammalogists, Junction, Texas, February 25-27, 2011.
- *Hoss, S.G. and **Haynie, M.L.** Genetic variation at Major Histocompatibility Complex (*Mhc*) loci in *Neotoma albigula*: potential clues to coevolution with arenaviruses. Texas Society of Mammalogists, Junction, Texas, February 25-27, 2011.
- *Hoss, S.G. and **Haynie, M.L.** Genetic variation at Major Histocompatibility Complex (*Mhc*) loci in *Neotoma albigula*: potential clues to coevolution with arenaviruses. American Society of Mammalogists, Portland, Oregon, June 24-29, 2011.
- *Hughes, L. N. and **Vaughan, M.B.** De-epidermized dermis (DED) is an appropriate model to study epithelial/mesenchymal transitions. OUHSC Summer Undergraduate Research Program, Oklahoma City, OK, July 23, 2010 (Presentation Award)
- *Judd, E. R., and **Butler, C.J.** Hybridization between Black-chinned Hummingbirds *Archilochus alexandri* and Ruby-throated Hummingbirds *Archilochus colubris* Oklahoma Ornithological Society, Stillwater, Oklahoma, October 15-17.
- *Judd, E., **Butler, C.J.** and *Judd, E. Ecological niche modeling as a method for mapping distribution of hummingbird hybrids. AFO/COS/WOS meeting, Kearney, Nebraska, March 9-13.
- Mauldin, M.R., *Rowell, E.B., **Haynie, M.L.** and Bradley, R.D. Molecular and ecological evaluation of hybridization in two species of woodrats (*Neotoma floridana* and *N. micropus*). American Society of Mammalogists, Portland, Oregon, June 24-29, 2011.
- *Nguyen, S. and **Butler, C.** Microbiology of hummingbird feeders. Oklahoma Ornithological Society, Stillwater, Oklahoma, October 15-17, 2010.
- *Nguyen, S., *Hucks, K., **Butler, C.** and *Becker, E. The effects of temperature, light, and sugar concentration on hummingbird feeder solutions. AFO/COS/WOS meeting, Kearney, Nebraska, March 9-13, 2011.
- Pipkin, W.E.A., *Smith, K.A, and **Haynie, M.L.** Mitochondrial d-loop sequence variation in Striped Skunks (*Mephitis mephitis*) from the central United States. American Society of Mammalogists, Portland, Oregon, June 24-29, 2011.

*Ramsey, S.R., Mendez-Harclerode, F.M., Bradley, R.D., Fulhorst, C.F. and **Haynie, M.L.** Mitochondrial d-loop sequence variation among *Neotoma albigula* (White-throated Woodrat) from Arizona. American Society of Mammalogists, Portland, Oregon, June 24-29, 2011.

*Rowell, E.B. and **Haynie, M.L.** Genetic evaluation of a *Neotoma micropus/Neotoma floridana* hybrid zone. Texas Society of Mammalogists, Junction, Texas, February 25-27, 2011.

*Rowell, E.B., Mauldin, M.R., Bradley, R.D. and **Haynie, M.L.** Genetic evaluation of a *Neotoma micropus/Neotoma floridana* hybrid zone. American Society of Mammalogists, Portland, Oregon, June 24-29, 2011.

*Stinedurf, J. N., **Butler, C.J.** and Kelly, J. 2010. Migratory ecology of Yellow Rails (*Coturnicops noveboracensis*) in Oklahoma. 25th International Ornithological Congress. Campos do Jordao, Brazil, August 22-28.

Vaughan, M. B. Research as a transformative learning tool in an undergraduate histology course. Experimental Biology 2010, Washington, D.C., April 10, 2010.

Vaughan, M. B. The environment affects mesenchymal cells and career choices. East Central University BRIDGES program, Ada, OK, February 24, 2011.

Vaughan, M. B. 3-D models to study epithelial/mesenchymal cell interactions. OUHSC Women's Cancer Program Research Retreat, Oklahoma City, OK, February 25, 2011.

Vaughan, M. B. The pyramid of undergraduate research. OSRHE Promoting Undergraduate Research Conference, Oklahoma City, OK, April 8, 2011.

* denotes current or former students, and bold a current UCO professor



Biology Department Participation:
The Southwestern Association of Naturalists 58th Annual Meeting
 University of Texas at Tyler, Tyler, Texas
 April 22-24, 2011

Oral Presentations

Baird, T.A., Baird, T.D. and Shine, R. Showing red: does ventral coloration function in social signaling in an Australian Dragon?

Fox, S.F., de J. Rodríguez-Romero, F. **Baird, T.A.** and Acevedo, G.A. Sexual selection in toddlers: precocial sexual signaling in hatchling Collared Lizards (*Crotaphytus collaris*).

*Rowell, E.B. and **Haynie, M.L.** Evaluation of a *Neotoma micropus/Neotoma floridana* hybrid zone: twenty years later.

Poster presentations

Caire, W., Caddell, G.M., Loucks, L.M. and *Stine, E.M. *Geomyces destructans* in Oklahoma Cave Myotis, *Myotis velifer*.

*Hoss, S.G. and **Haynie, M.L.** Genetic variation at major histocompatibility complex (MHC) loci in *Neotoma albigula*: potential clues to coevolution with arenaviruses.

*Koenigs, C., **Ovrebo, C., Lord, W.** and Olinger, B. Arthropod interactions with Oklahoma fleshy fungi.

*Ramsey, S.R., *Eisemann, A.H., Mendez-Harclerode, F.M., Bradley, R.D., Fulhorst, C.F. and **Haynie, M.L.** Assessment of genetic diversity within populations of *Neotoma albigula* (White-throated Wood Rat) from Arizona, using microsatellite loci and mitochondrial D-loop sequence data.

*York, J.R., *Hoge, S.J. and **Baird, T.A.** Growth and survival in relation to habitat alteration in hatchling Collared Lizards.

* denotes current or former student, and bold a UCO professor



Biology Department Participation:
 10th Annual Research Day for Regional Universities
 Cameron University, Lawton, Oklahoma
 November 12, 2010

Poster presentations

Baird, T. and Baird, T. Showing red: does ventral coloration function in social signaling in an Australian Dragon?

*Banks, S. Determination of Tyrosine O-sulfated proteins in the retina.

Barthell, J., *Redd, J., *Clement, M, Hranitz, J., Petanidou, T. and Wells, H. A relationship between pollinator size and nectar volume within American and Eurasian island ecosystems.

*Becker, E., **Stanila, B.,** *Bates-Albers, L. and **Stone, P.** Prey selectivity of Sonoran Mud Turtles (*Kinosternon sonoriense*).

Bell, J. and **Bidlack, J.** Some internet videos may be more appropriate for teaching than others.

*Bidlack, J. and **Bidlack, J.** Effect of jasmonic acid on biomass and enzyme activity in switchgrass and sorghum.

*Bidlack, J. and **Bidlack, J.** Effect of jasmonic acid on biomass and enzyme activity in basil, catnip, and sage.

Bowen, J., Easton, N., *Everman, S., Mathews, F., **Brennan, B.** and Albahadily, F. Analysis of levels of triclosan in surface waters and the relation of triclosan concentration to antibiotic resistance.

Brennan, R. Nasal carriage of *Staphylococcus aureus* and methicillin resistant *Staphylococcus aureus* (MRSA) in college students.

Butler, C. and *Stinedurf, J. A comparison of age and sex ratios, fat deposits, and population estimates for Yellow Rails wintering in Oklahoma and Texas.

Caire, W., Loucks, L. and **Haynie, M.** The mammals of Oklahoma.

*Clement, M., *Bates-Albers, L., Hall, N., Apted, T., Bobek, J., **Barthell, J.** and Wells, H. Foraging behavior of Honey Bees at blue and yellow flowering plant species and artificial inflorescences.

*Cloud, T. *Koppari, K., **Haynie, M.** and **Wilson, G.** Comparative phylogeography of the Deer Mouse and White-footed Mouse in Oklahoma and adjacent states.

*Daugherty, Y. and **Vaughan, M.** The effect of carcinine of TGFB-treated myofibroblasts.

Duell, M., Apted, T., Hall, N., *Bates-Albers, L., Pendergraft, L., Zuniga, E., Izikoglu, D., Semilova, S., Aydin, L., Oruc, H., **Barthell, J.**, Cakmak, I., Wells, H. and Hranitz, J. Responses by Anatolian Honey Bees to toxicological effects of flumethrin in Turkish apiaries.

Duggan, K., Khandaker, M. and **Vaughan, M.** Utilization of electro-mechanical response of PVA/PAA hydrogels for the enhancement of cell function.

*Fitzsimons, T. and **Bidlack, J.** Use of plant pigments in dye-sensitized solar cells.

*Gerlosky, M. and **Haynie, M.** Genetic diversity within the Northern Grasshopper Mouse (*Onychomys leucogaster*) in Southern Texas.

*Gurley, J., Viola, R. and Chooback, L. Crystal structure of yeast aminotransferase ARO8.

*Hoge, S., **Baird, T.** and *York, J. Colonization of new habitat by hatchling Collared Lizards.

*Hoss, S. and **Haynie, M.** Genetic variation at major histocompatibility complex loci in *Neotoma albigula*: potential coevolution with arenaviruses.

*Hughes, L., *George, L. and **Vaughan, M.** Role of de-epidermized dermis in migration of pre-cancerous cells from the epidermis to dermis layer.

*Jones, B., *Baigent, M., *Reim, S. and **Bidlack, J.** Incorporation of dragon's blood pigment in dye-sensitized photovoltaic cells.

*Judd, E. and **Butler, C.** Evaluating the effectiveness of three ecological niche models in predicting the distribution of dwarf palmetto.

*Judd, E. and **Butler, C.** Examining the extent of the hummingbird hybridization zone in Oklahoma and Texas.

*Koenigs, C., **Ovrebo, C.**, Davidson, H., Olinier, B., and *O'Bannon, E. Arthropod interactions with Oklahoma fleshy fungi.

*Lunsford, A. and **Baird, T.** Do femoral-gland secretions function in Collared Lizard communication?

*Nguyen, C *Lee, H. and **Kotturi, H.** Effect of bitter melon fruit extract on cell proliferation in pancreatic cancer cells.

*Nguyen, S., *Hucks, K., *Kliwer, B. and *Webb, J. Microbiology of hummingbird feeders.

*Noon, M., *Pebworth, J. and **Vaughan, M.** Does growth arrest in the absence of oxidative damage promote the myofibroblast phenotype?

*O'Bannon, E. and *Stine, E. Molecular identification of Diptera in Oklahoma.

*Ochoa, B. and **Brennan, R.** Effect of various salt concentrations on the growth of *Staphylococcus aureus*.

Ovrebo, C., Lodge, J. and Aime, C. A new species of *Cantharocybe* (Basidiomycota) from Belize.

Pendergraft, L., *Bates-Albers, L., Duell, M., Zuniga, E., Abramson, C., Cakmak, I., **Barthell, J.,** Hranitz, J. and Wells, H. Feature-positive and feature-negative learning by Anatolian Honey Bees.

Radke, W., Settle, T., Carro, M., Falkenstein, E., VanDyke, K. and Klandorf, H. The effects of allopurinol, uric acid sodium salt supplementation, and inosine on plasma uric acid and xanthine oxidase activity in broilers.

*Reim, S., *Traylor, A. and **Bidlack, J.** Gene transfer study as related to bile salt sensitivity in mutant *Escherichia coli* strains.

Ricci, P., Hranitz, J., **Barthell, J.,** Freeman, B., Stevison, B., Diannoni, M., Presky, M., Cakmak, I. and Petanidou, T. Microsatellite primers for *Osmia rufa* amplify homologous microsatellite DNA in an invasive leafcutting bee.

*Rowell, E. and **Haynie, M.** Evaluation of a *Neotoma micropus/Neotoma floridana* hybrid zone.

*Smith, K. and **Allan, E.** Is outdoor education effective in changing students' appreciation for attitudes about wildlife conservation?

*Sohl-Smith, L.M. and **Bass, D.** Aquatic insects in the University of Central Oklahoma Natural History Museum.

*Spencer, C., *Noon, M. and **Vaughan, M.** Green tea extract's antioxidant properties: inhibiting Dupuytren's Disease myofibroblasts.

Stabler, L.B. *Locey, K. and **Stone, P.** Dispersal pattern of Mediterranean Geckos across an anthropogenic habitat.

*Stine, E. and *O'Bannon, E. Emerging infectious disease: survey for *Angiostrongylus cantonensis* in Oklahoma rodents.

*Thapa, P., **Kotturi, H.,** *Lee, H. and *Shadid, U. Effects of bitter melon fruit extracts on cell proliferation in human colon cancer cells.

*Thomas, J., *Odejimi, T., **Vaughan, M.** and **Kotturi, H.** The effect of bitter melon extract on the formation

of myofibroblasts.

*Valencia, A. The significance of transforming growth factor-beta (TGF-B) and effect of tension on Ker-CT-Ras using immortalized keratinocytes in cultured skin equivalents.

*Varghese, N., *Rios, R. and **Vaughan, M.** Effects of telomerase and TGF-beta on the myofibroblast.

Watkins, B., **Caddell, G.**, *Datillo, W., *Blazs, J., *Reid, M. and *Costello, P. A preliminary report on the distribution and population parameters of eastern redcedar (*Juniperus virginiana* L.) at the Selman Living Lab in northwestern Oklahoma.

*Wheeler, E., **Stabler, L.B.** and **Butler, C.** Production and comparison of three habitat suitability maps for the imperiled lace hedgehog cactus *Echinocereus reichenbachii*.

*York, J., **Baird, T.** and **Haynie, M.** On-going studies of correlates of reproductive success in male Collared Lizards.

* denotes current or former student, and bold a UCO professor



Biology Department Participation:

Oklahoma Louis Stokes Alliance for Minority Participation in Science, Technology, Engineering, and Mathematics 16th Annual Research Symposium
Oklahoma State University, September 25, 2010

Oral Presentation

*Rowell, E. and **Haynie, M.** Evaluation of a *Neotoma micropus/Neotoma floridana* hybrid zone.

Posters

*Banks, S. and **Vaughan, M.** Indirubin increases contractility and presentation of myofibroblasts in collagen lattice models.

*Ochoa, B. and **R. Brennan.** Effect of various salt concentrations on the growth of *Staphylococcus aureus*

* denotes current or former student, and bold a UCO professor



Biology Department Participation:
Oklahoma Academy of Science 99th Annual Technical Meeting
 Northeastern State University, Broken Arrow, OK, November 5, 2010

Poster Presentation

*Cloud, T.L., *Koppari, K.L., **Haynie, M.L.** and **Wilson, G.M.** Comparative phylogeography of the Deer Mouse and White-Footed Mouse in Oklahoma and adjacent states.

Oral Presentation

Strawn, S. Writing your research paper and getting it published: a panel discussion.

Other Faculty Activities

Dr. David Bass continues the ongoing studies of Caribbean invertebrates and their fresh/brackish water habitats, focusing on the Cayman Islands during recent years. Several projects are underway including 1) long-term monitoring of several protected ecosystems, 2) comparison of temporary pool communities over several years, and 3) monitoring the spread (and impact) of several invasive freshwater invertebrates on Grand Cayman. His graduate student, Kammy Brown, is currently investigating the aquatic invertebrates inhabiting springs in the Pontotoc Nature Preserve.

Dr. Beth Allan has been asked to be a primary reviewer for the *Next Generation Science Standards*. In a two-step process, the National Research Council (NRC), Achieve, Inc., the American Association for the Advancement of Science (AAAS) and the National Science Teachers Association are working with states and science educators to develop these rigorous and internationally-benchmarked K–12 science education standards ready for state adoption. Dr. Allen also attended the North Central Association Commission on Accreditation and School Improvement (NCA CASI) / AdvancedEd State Conference in Tulsa, OK, on Sept 12-13.

Dr. Gloria Caddell led Botany field trips at the Fall Field Meeting of the Oklahoma Academy of Science at Roman Nose State Park, September 25, 2010. She also led a field trip for the Oklahoma Native Plant Society 34th Annual Wildflower Workshop, Chandler, OK, May 14, 2011.

Dr. Charles Hughes, Dr. Wei Chen, Dr. Charlotte Simmons, Beverly Endicott, and **Dr. Greg Wilson** attended the CUR 2010 Conference at Weber State University in Ogden, UT, on June 19-22, 2010. They conducted a workshop entitled: “Developing Undergraduate Research from Within: Transforming Faculty into Advocates for Student-centered Research”. Dr. Wilson presented a poster entitled: “Promoting Transformation; Supporting Student and Faculty Collaborations in Research, Creative, and Scholarly Activities at a Metropolitan University”. Dr. Chen, Dr. Simmons, and Dr. Wilson presented a poster entitled: “STEP@UCO: An Undergraduate Research Program as an Integral Part of transformative Learning for Students Throughout their College Life in STEM Disciplines”.

The Summer Undergraduate Research Programs presentation occurred at OUHSC on July 23, 2010. Sixty-six students, many from UCO, were represented at the poster session. Four awards were given, and two of the student awardees had UCO ties. Kalli Kardokus, a UCO Biology major, won a poster award, and Lindsay Hughes, an INBRE student working with **Dr. Mel Vaughan** of the Biology Department, won a Community College transfer scholarship to attend UCO beginning fall 2010.

Dr. William Caire and **Ms. Linda Loucks**, UCO Natural History Museum Collection Manager, visited the Smithsonian in late summer to examine specimens of mammals from Oklahoma deposited there. They confirmed identifications of approximately 2,400 specimens and were given a behind the scenes tour of the Cetacean prep area of the Smithsonian, the largest whale research collection in the world!

Dr. William Caire met with Chris Hise, a representative from the Oklahoma Nature Conservancy, Michael Forsberg, author of the book *Great Plains* and a production crew from Nebraska Educational Television (NET). NET provides noncommercial educational telecommunications throughout Nebraska. Dr. Caire was interviewed regarding bats, as they filmed the large Mexican Freetail Bat flight near Mooreland, Oklahoma. They are preparing a television documentary on Michael Forsberg's work. About two years ago, Michael spent five days at the cave taking pictures of the bats. This book was funded by the Nature Conservancy and the film is to help the public understand a bit more about wildlife.

Dr. William Caire and **Dr. Terry Harrison** (retired emeritus Biology professor) led a group of UCO emeritus professors on an outing to northwest Oklahoma on Friday Oct 1, 2010. They toured Alabaster Caverns, the Selman Living Lab and ended up at the Mexican Freetail bat cave to watch the exit flight. Alas, the bats had already migrated to Mexico for the winter!

Dr. William Caire and students from the Biology Department Mammalogy class attended the 2010 Oklahoma BioBlitz at Kaw Lake on Oct 8 and 9th. They assisted in the survey of mammal diversity of the area. The BioBlitz is sponsored by the Oklahoma Biological Survey and is conducted by volunteers from around the state and the region. The volunteers count as many species as possible in 24 consecutive hours. Dr. Caire was also an invited speaker on November 16 at a United States Fish and Wildlife workshop in Albuquerque on White Nose Syndrome in bats. The title of Dr. Caire's presentation was *Geomyces destructans* in Oklahoma. Dr. Caire has agreed to be a member of the Oklahoma Department of Wildlife Conservation's Bat Coordinating Team, which has been established to coordinate and share information related to bat research, disease surveillance, etc., among various state and private entities.

On May 24, 2011, **Dr. Sheila Strawn** participated in the NSF funded workshop, "Science: Becoming the Messenger", where science communicators became what Chris Mooney (of *Discover* magazine and author of "Unscientific America: How Scientific Illiteracy Threatens Our Future) calls, "Deadly-Ninjas-of-Science Communicators".

Dr. Clark Ovrebo attended the New Mexico Mycological Society Annual Meeting and foray held south of Taos, NM, on August 27, 2010. He also participated in Bioblitz Oct 8-9, at Kaw Lake, and submitted a fungus species list for that event. Clark led the mushroom walk at the OAS Fall Field Meeting at Roman Nose State Park, Sept 24-26 and gave the Saturday night talk at the Spring meeting at Lake Murray. Clark also led the mycology walk at the J. T. Nickel Family Nature and Wildlife Preserve for the Nature Conservancy, June 4, 2011.

Dr Anne Ewing attended multiple conferences including: "In Tune with the Health Professions in Changing Times," SAAHP, April 7, 2011 - April 10, 2011; "Oklahoma Health Care Workforce Articulation Summit," OK Health Care Workforce Center, November 1, 2010; "OSU Vet Med Counselor's Workshop," OSU College of Veterinary Medicine, October 29, 2010; "OCCLSA Fall Meeting," Comanche County Hospital and Oklahoma Clinical Lab Affiliates, October 15, 2010; "StrengthsQuest," NAAHP Board of Directors, June

15, 2010 and "The Health Professions Journey: Keeping our Students on Track," NAAHP, June 16, 2010 - June 20, 2010.

Oklahoma Academy of Science Field meetings

The fall 2010 field meeting was held at Roman Nose State Park September 24-26. UCO Biology faculty who participated included **Bill Caire**, **Gloria Caddell**, **Clark Ovrebo**, **Brooke Stabler** and **David Bass**. Several members of the Tri-Beta Biology club participated in mammal trapping and processing with Dr. Bill Caire. Dr. Stabler brought students from her Plant Ecology class; her students surveyed for presence of the threatened cactus *Echinocereus reichenbachii* and participated in a field laboratory exercise.



The spring 2010 meeting was held at Lake Murray State Park April 8-10. **Dr. Brooke Stabler** organized the meeting and two UCO faculty members gave presentations at that meeting. **Bill Caire** talked about White Nose Syndrome in bats and its detection at the Selman lab. **Clark Ovrebo** gave a presentation on the natural history of the Amazon based on his travels there. We had a unique field trip opportunity for this meeting; a dozen or so OAS members were given a private tour of the research and greenhouse facilities at the Noble Foundation in Ardmore. The fall 2010 meeting will be held at Robber's Cave State Park, September 23-25, 2011. We hope to see you there!

Grants and Awards Received

David Bass won the Outstanding Student Organization Advisor Award (2011), conferred by the UCO Office of Student Affairs.

Dr. Gloria Caddell received the Neely Excellence in Teaching Award in August, 2010.

William Caire was awarded a US Fish & Wildlife Service contract for "Soil Survey of Oklahoma Caves and Development of Laboratory Based Methods for the Detection of *Geomyces destructans*" \$15,000. Dr. Caire was also awarded an Oklahoma Department of Wildlife Conservation contract for "Population size estimations of the Mexican Free-tailed bat, *Tadarida brasiliensis*, at important maternity roosts in Oklahoma". \$8,000

Beth Allan was awarded an Oklahoma Department of Wildlife Conservation contract for "Creation of a comprehensive outdoor educational curriculum for the Arcadia Conservation Area". \$23,823. Dr. Allan also received a National Science Foundation Noyce Planning Grant for \$73,898.

INBRE and NSF STEP Programs

Many of our students are involved in several nationally funded grant programs which promote success in both education and research: the National Science Foundation's STEP@UCO grant (Science, Technology, Engineering and Mathematics Talent Expansion Program) and the National Institutes of Health (NIH) funded INBRE (Oklahoma Idea Network of Biomedical Research Excellence) grant for biomedical research.

UCO STEP Summer Bridge Program, summer 2011

The NSF-Funded STEP program is now in its 7th year of sponsoring undergraduate research at UCO. This summer 6 faculty members in the college are participating, including **Dr. Chris Butler** and **Dr. Michelle Haynie** of the Biology department. Eleven incoming UCO freshmen are conducting research this July with Chris, Michelle, and their student assistants. Dr. Butler's student assistant is Katrina Hucks, and Dr. Haynie's assistants are Amanda Eisemann, Winnie Pipkin, and Shey Ramsey. Both teams incorporate field and laboratory research. The grant provides the potential for the teams to continue their research during the fall 2011 and spring 2012 semesters. **Dr. Mel Vaughan** is in his final year of coordinating the program.

INBRE

Two Biology Department faculty members and 4 students received awards from INBRE this year. **Dr. Mel Vaughan** was awarded a mini grant for "Development of an experimental model to study myofibroblast effect on tumorigenesis". In addition, Dr. Vaughan was named an INBRE summer mentor for Progga Barua, a transfer student from Oklahoma City Community College. **Dr. Bob Brennan** received an INBRE Collaborative grant to study "Staphylococcus aureus biofilms and chronic wound pathogenesis".

The INBRE Summer Undergraduate Research Opportunity pairs students with faculty who share common biomedical research interests. The students are paid 2 months' salary and the faculty mentor receives a supply budget. Four UCO Biology students received INBRE summer research opportunities; these students were Christina Bruxvoort, Molly Butler, Lindsay Hughes, and Jaime Thomas. Jaime's presentation at the end of the summer program won a poster award.

You can visit the INBRE website: <http://okinbre.org>. More information on the OUHSC undergraduate summer research programs can be found at the website http://www.ouhsc.edu/graduate/Summer_Programs.htm



*Biology Department Faculty recipients of the
Dr. Joe C. Jackson College of Graduate Studies and Research
Fall 2011 On-campus Grants*

Baird, Troy- Sexual selection, genetic measures of male reproductive success, and the use of chemical signals in male collared lizards. \$3948.

Bass, David- Distribution of the recently introduced crayfish, *Procambarus alleni*, and its impact on aquatic community structure on Grand Cayman. \$1360.

Bidlack, James- Use of exogenous jasmonic acid treatment to promote drought tolerance in switchgrass. \$4668.

Brennan, Bob- *Staphylococcus aureus* biofilms and chronic wound pathogenesis. \$4182.

Haynie, Michelle- Assessing the dynamics and extent of a *Neotoma* contact zone through use of molecular techniques and ecological niche modeling. \$7500.

Kotturi, Hari- Novel effect of bitter melon (*Momordica charantia*) fruit extract on amelioration of colitis in mice. \$5130.

Stabler, Brooke- Microhabitat characteristics and the distribution of Mediterranean Geckos (*Hemidactylus turcicus*) across the University of Central Oklahoma campus. \$630.

Vaughan, Mel- Myofibroblast and senescence effect on tumorigenesis in a tension-maintaining skin equivalent. \$1000

Watkins, B. (PI) and G. Caddell (Co-PI)- Landscape level mapping of eastern redcedar encroachment at the Selman Living Laboratory, \$4,552.

Meet the Faculty

Wayne Lord



It was with great joy and enthusiasm that in the spring of 2008, I accepted a position as an Associate Professor in the newly established Forensic Science Institute and Department of Biology here at the University of Central Oklahoma. I came to UCO after serving as a Supervisory Special Agent and scientist with the Federal Bureau of Investigation for twenty-one years. As my FBI career drew to a close, I sought to continue my scientific career in an academic setting, where I could pursue my passions for undergraduate teaching, student mentorship, and biological research. Having had the opportunity to visit the UCO campus, visit with faculty, and interact with UCO students, my wife Debbie and I were immediately convinced that UCO afforded us the professional opportunities and academic home we were looking for. In short, we love UCO and being part of the Biology Department family.

I grew up in the great state of Rhode Island, and it was there that I developed an insatiable curiosity for terrestrial and marine invertebrates. I spent most of my formative years crawling about the rocky New England coast in search of strange sea creatures and exploring the seemingly endless biological wonders of the Northeast. As an undergraduate and in graduate school I studied the ecology/behavior of medically important arthropods, medical and veterinary parasitology, marine invertebrate zoology, and necrophagous insect community structure. I eventually earned academic degrees in biology, entomology/applied ecology, and zoology.

After completing my doctoral studies at the University of New Hampshire in 1986, I served as a medical entomologist/parasitologist in the United States Air Force. I was assigned to the Walter Reed Army Medical Center, Washington, D.C., and was adjunct assistant Professor of Preventive Medicine and Tropical Public Health at the F. Edward Herbert School of Medicine, Uniformed Services University of Health Sciences, in Bethesda, Maryland. During that time, I expanded my knowledge of medical entomology, clinical parasitology, and the ecology of vector-borne diseases. Additionally, I served as a forensic science consultant to the Armed Forces Institute of Pathology. I left the USAF for a career in the Federal Bureau of Investigation in the fall of 1986.

After graduating from the FBI Academy, I initially served as a Special Agent in the Hartford, Connecticut Resident Agency of the New Haven Field Division. In addition to myriad investigative responsibilities, I traveled throughout the United States at the request of FBI headquarters, the FBI

Laboratory Division and the FBI Behavioral Sciences Unit, assisting with significant homicide investigations and lecturing on forensic entomology, human remains detection and recovery, and crime scene management/analysis. Additionally, I served as an FBI SWAT team member, field relief supervisor, and Pilot-in-Command of FBI special operations aircraft.

I was promoted to Supervisory Special Agent and transferred to the FBI Laboratory Division in June 1991. Initially assigned to the Forensic Science Research and Training Center, I provided forensic science instruction to new agents, FBI National Academy participants, and numerous state and local law enforcement agencies. Additionally, I developed and implemented new course curricula, organized international forensic science symposia, and conducted research in the fields of forensic entomology, vertebrate taphonomy, child abduction/homicide, and serial murder. I managed the research efforts of visiting scientists, interns, and laboratory personnel, and maintained cooperative research programs with other federal agencies and academic institutions. I was instrumental in the development and implementation of the FBI's national Evidence Response Team (ERT) program. I served as one of the Evidence Response Team Unit's (ERTU) primary instructors, and as program manager for special events and critical incident responses. I traveled extensively throughout the United States and abroad providing basic and advanced crime scene instruction, administrative guidance, and case consultations to ERT field personnel. I participated in numerous, complex, multi-agency investigations including OKBOMB, PENTBOMB and the bombing at the 1996 Olympic Games.

In 1996, I transferred from the Laboratory Division to the newly established Critical Incident Response Group (CIRG). The CIRG, located at the FBI Academy in Quantico, Virginia was designed to provide rapid, multidisciplinary assistance to national and international crises. From 2001-2004, I served as Unit Chief of Behavioral Analysis Unit III (BAU-III), a component of the FBI's Critical Incident Response Group (CIRG). Specifically, Behavioral Analysis Unit-III provided a wide variety of behaviorally based consultation services to time sensitive and complex investigations involving crimes against children. I led a diverse cadre of behavioral scientists, mental health professionals, and Supervisory Special Agents who provided congressionally mandated operational, research and training services in child abductions, child homicides, mysterious disappearances of children, and child sexual victimization cases. Additionally, I provided management oversight for the NCAVC's behavioral research, visiting scholar and internship programs.

I am greatly enjoying my new career here at UCO. The faculty and staff of the Biology Department and Forensic Science Institute are among the finest individuals with whom I have had the pleasure to work. I am involved in numerous cooperative research and teaching endeavors targeted at bringing high quality science to the forensic arena. In addition to numerous lectures and training sessions for the Oklahoma criminal justice community, I teach entomology, parasitology, histology and crime scene processing. My research interests continue to include vertebrate taphonomy, the ecology of social insects, the behavioral ecology of juvenile mortality, and the parasites of marine mammals. I have a wonderful cadre of UCO graduate and undergraduate research assistants who work tirelessly on these and other cooperative research projects. I still get my annual fix of sea and salt air by a teaching wildlife forensic science field course each summer at Cornell University's Shoals Marine Laboratory, which is located six miles off the Maine-New Hampshire coast. Our course is accredited by Cornell University and the Cornell University School of Veterinary Medicine.

My wife, Debbie, and I are the proud parents of three grown children. We have a comfortable, welcoming new home in Edmond. We are greatly enjoying the many cultural and

recreational activities afforded by UCO and the greater Edmond community. We look forward to many years of fun and science here at UCO.

James Creecy



I was born and raised in El Paso. I often joke that El Paso is a great place to be from, yet every year I go back and visit family. My sister is a special education teacher in an elementary school. She just had her first child, a little girl. My mother works at Fort Bliss Army Base in El Paso, and my father is a store manager for a Homeland grocery store in Woodward, Oklahoma.

As a child I was hyper and overly inquisitive. I attended a very small high school and like all fledgling scientists, I was a strange teenager. On one hand, I was a starting forward for the varsity basketball team and student class president. On the other hand, I was a band geek, read chemistry and calculus textbooks, and spent hours programming computer code for video games.

After graduating high school, I moved away from El Paso and attended college at New Mexico Institute of Mining and Technology. The whole student body only numbered 2,000 people, and the campus was less than three square blocks. I started college with the misguided notion of becoming a chemist. Eight classes into my first general chemistry course I was introduced to the “change of major form.” I entered the fold of the biologist and never looked back. In a cruel twist of fate, I found out that my biology department was completely molecular biology based. Many more chemistry courses later I earned a B.S. in Biology. As a graduate student, I worked and wrote on the subject of evolutionary genetics. I studied the changing genomes of primates. It was my time in graduate school that truly shaped my understanding of molecular biology. Somewhere during graduate school I was bitten by the forensics bug. I saw forensic science as way to use science to help the community.

After graduate school I went to work in the Albuquerque Metropolitan Crime Laboratory’s DNA Unit. I was responsible for validating new DNA technologies and writing programs for a liquid handling robot. I was later given the opportunity to screen property crime cases for biological fluids. My time in Albuquerque was wonderful, and I learned a great deal about forensic DNA analysis. The most important lesson I learned was that college cannot prepare you for everything, but it does prepare you to think critically and problem solve. Knowledge is acquired through action.

A year later I married Claire. A week after getting married we picked up and moved to Oklahoma. I started working for the Oklahoma City Police Department’s DNA section as a Forensic DNA Analyst. While working for the OCPD, I was involved in cases ranging from property crimes to homicides. I use my experiences with these cases as classroom examples and exercises in the courses I teach. I enjoyed my time with OCPD a great deal, but when the opportunity arose to move from the crime lab to the classroom, I had to take it.

I have been with UCO for a year and a half now, and I have enjoyed every day. I am in the unique situation that I am able to work in two of the best departments on campus. Within the Biology Department I teach non-majors biology and assist in the maintenance of the molecular biology lab. In the Forensic Science Institute, I teach courses dealing with biological fluid identification, human identification, and laboratory quality assurance. In addition to teaching, I also have an active research lab with a broad scope of projects. While I enjoy scientific research, my favorite part of the

job is the time I spend in the classroom. All things are secondary to the look a student gets when he or she finally understand a concept.

Student Activities

Undergraduates

Lindsay Hughes, working with **Dr. Mel Vaughan**, won the Community College Scholarship for her research presentation at OUHSC, summer 2010. Lindsay also was an American Association of Anatomists' Undergraduate Poster Award Finalist at Experimental Biology 2010 in Washington, DC.

Shaquita Banks, working with **Dr. Mel Vaughan**, won the FASEB Minority Access to Research Careers travel award to attend Experimental Biology 2010 in Washington, D.C. She also was an American Association of Anatomists' Undergraduate Poster Award Finalist.

Graduate Students

We currently have 15 graduate students. New students coming to us in the fall are Jocelyn Bidlack, who will be working with **Paul Olson**, Ethan Rowell, working with Michelle Haynie and Jordan Hearod and Jeremy Massengill, who will be working with **Paul Stone**. Students who joined us this past year include Joshua York, working with **Troy Baird** and Kambridge Brown, who is working with **David Bass**.

Toby FitzSimons successfully defended his MS in Biology Thesis entitled, "Harnessing Solar Energy Using Photosynthetic and Organic Pigments" on November 15, 2010. His Advisory Committee included Drs. **Jim Bidlack**, **Jenna Hellack**, and **Beth Allan**. Toby is now pursuing a doctorate in Crop Physiology at the University of Arkansas.



*Biology Department Student recipients of the
Dr. Joe C. Jackson College of Graduate Studies and Research
Fall 2011 On-campus Grants (up to \$500, graduates and undergraduates)*

Lindsay Hughes- Basement membrane contravention from precancerous keratinocytes treated with TGF- beta. (Dr. Mel Vaughan).

Tobi Odejimi- Myofibroblast proliferation. (Dr. Mel Vaughan).

Erica Bekcer- Habitat use, survivorship and winter ecology of Yellow Rails (*Coturnicops oregonensis*) in Oklahoma. (Dr. Chris Butler).

Jocelyn Bidlack- Use of exogenous jasmonic acid treatment to promote drought tolerance in Switchgrass. (Dr. Jim Bidlack)

Steven Everman- Level of triclosan and its effects on the microbiota commonly found in rivers where treated waste water effluent is released. (Dr. Robert Brennan).

Stacy Fox- Elephant footprints: individual characteristics. (Dr. William Caire, Dr. Christopher O'Brien, and Dr. Gloria Caddell).

Lanice George- Myofibroblast's capability to support or to inhibit tumorigenesis. (Dr. Melville Vaughan).

Sarah Hoss- Genetic variation at major histocompatibility complex loci in *Neotoma albigula* (White-throated Woodrat): potential clues to the evolution of North American arenaviruses. (Dr. Michelle Haynie).

Katrina Hucks- Comparing frog species diversity in man-made wetlands and natural wetlands. (Dr. Chris Butler)

Lindsay Hughes- Basement membrane contravention from pre-cancerous keratinocytes treated with TFG-B. (Dr. Melville Vaughan).

Brett Jones- Use of plant pigments for dye-sensitized solar cells. (Dr. James Bidlack).

Eric Judd- Continued evaluation of the effectiveness of three ecological niche models in predicting the distribution of a rare plant species. (Dr. Chris Butler).

Erica Judd- Examining the extent of hummingbird hybridization in Oklahoma and Texas. (Dr. Chris Butler).

Charles Nguyen- The effect of bitter melon extract on activation of NF-kB in vitro using HEK 293 cells. (Dr. Hari Kotturi).

Son Nguyen - Locating the wintering grounds of Yellow Rails (*Corurnicops noveboracensis*) breeding in eastern Canada. (Dr. Chris Butler).

Tobi Odejimi- Myofibroblast proliferation. (Dr. Melville Vaughan)

Samantha Peno- Phylogeography of Sonoran Mud Turtles in a fragmented landscape. (Dr. Michelle Haynie).

Nicholas Pugh- *Geomyces destructans* antibodies in Oklahoma bats. (Dr. Robert Brennan).

Ethan Rowell- Genetic evaluation of a *Neotoma micropus/Neotoma floridana* hybrid zone: twenty years later. (Dr. Michelle Haynie)

Ayesha Sahi- Effects of bitter melon (*Momordica charantia*) extract on expression of multi-drug resistant efflux pumps in *Staphylococcus aureus*. (Dr. Hari Kotturi).

Chelsea Spencer- Green tea extract's properties: inhibiting Dupuytren's Disease myofibroblasts. (Dr. Melville Vaughan)

Eric Wheeler- Production and comparison of three habitat suitability maps for the imperiled lace hedgehog cactus *Echinocereus reichenbachii*. (Dr. Brooke Stabler).

Jeremiah White - Effects of light emitting diodes (LED) low level photonic stimulation upon myofibroblasts. (Dr. Melville Vaughan).

Josh York- Influence of operational sex ratio on the intensity of sexual selection in male collared lizards. (Dr. Troy Baird).

Student Clubs

Pre-Med Health Professions Club



Academic year 2010-11 was a very busy one for the Pre-Med/Health Professions Club, whose mission is to connect students to information and events regarding the various health-related professions. The 1st and 3rd Tuesday of each month, special guests speak to the membership on health-professions subjects like: careers, research, training and admissions. This year we had 14 speakers come from various D.O. and M.D. programs, practicing veterinarians, dentists, nurses, physicians-assistants and even the OKC Thunder Team Physician! This year the club started sponsoring volunteer hours at free clinics like Manos Juntas and worked with the UCO student involvement fairs, Habitat for Humanity, the Ronald McDonald House, the American Cancer Society's Relay for Life, and many more events. In January the club hosted the annual UCO Health Professions Career Fair and attracted representatives from more than 20 programs. Thanks to the generosity of OKC Kaplan, the club awarded the most active members of each semester with one free Kaplan Course! This upcoming year, the club is focusing on continuing to provide students with valuable opportunities while working to improve the wellness of our society and stimulate the interest in the health sciences. The current officers are Rick Meier, J. Anthony Lunsford, Manisha Ragha, Justin Vinney and Jess Mathews.

Tri-Beta Biology Club and National Biological Honor Society



The Tri-Beta club had an active year, as usual! We had a lot of great speakers at our regular meetings, including Dr. Ash, from the Dean McGee Eye Institute, who talked about careers in biology, Dr. Clark Overbo, who gave a presentation called "Natural History Along the Amazon Basin", and Monty Porter, a UCO alum from the Oklahoma Water Resources Board, who also talked about career opportunities. During fall 2010 we participated in Stampede Week, a Selman Living Lab Service Trip and Bat Flight, BioBlitz, the Oklahoma Academy of Science (OAS) Field Meeting, the OAS Technical Meeting, and Oklahoma Research Day. During the spring semester we held a bake sale, inducted seventeen new members, held a greenhouse clean-up, another Selman service trip (this one included a fossil hunt). Several members attended the Tri-Beta Regional Meeting at Lake Texoma, the OAS Field Meeting at Lake Murray, and of course we held our annual plant sale on Earth Day. New officers elected for the 2011-2012 academic year: President- Philip Grider; Vice-President- Kayla Greiner; Treasurer- Erin Ralstin; Secretary- C.J. Ragha; Historian- Jessica Price; and Senator- Arad Rana.



2008 Beta Beta Beta South-Central Regional Convention
 University of Oklahoma Biological Research Station, Lake Texoma
 April 3-5, 2009

Poster Presentations

*Hughes, L. N. and **Vaughan, M.B.** De-epidermized Dermis (DED) is an appropriate model to study epithelial/mesenchymal transitions.



The 29th Annual College of Mathematics and Science Awards Banquet

Outstanding Biology Senior Student Award

Ethan Rowell

Ethan's home town is Rush Springs, Oklahoma. He graduated from Rush Springs High School in 2007. Ethan lists his major as medical technology, but we have high hopes that he'll go on to bigger and better things! He currently works in the research lab of Dr. Michelle Haynie studying a hybrid zone between two species of *Neotoma*. Ethan was also Class Marshall for spring 2011. Upon graduation he plans to stay at UCO and work on a Masters degree.

Lothar Hornuff Field Biology Award

J. Anthony Lunsford

Anthony is from Lexington, Tennessee. He is a pre-med major; he already holds a Bachelor's degree in Music which he earned at Middle Tennessee State University before moving to Edmond in 2007. He returned to post-baccalaureate at UCO in Spring 2009. He will complete his Pre-Med requirements this Spring. He is Vice-President of the Pre-Med/Health Professions Club.

Ethel Derrick Zoology Award

Olivia Bowlan

Olivia's hometown is Shawnee, Oklahoma. She is a Chemistry major. Olivia grew up in Shawnee and graduated from Shawnee High School in 2009 with an Academic Letter Jacket and a big interest in medicine with the hopes of becoming a doctor one day. She is a Member of Alpha Lambda Delta, Pre-Med/Health Professions Club, SDA, Gamma Beta Phi, and the UCO Catholics group.

Biology Education Senior Award

Brittany Bowens

Brittany's hometown is Frankfurt, Germany. She is a Biology Education major. Brittany was

born into a military family that moved several places including Germany, Texas, Missouri and then Oklahoma. She has had numerous accomplishments while at UCO. She joined the Oklahoma Science Teacher Association, participates in the Ebony Gospel Choir and currently is President of Beta Sigma Chi Christian Sorority. She is excited to become a Science Teacher.

Outstanding Clinical Laboratory Student Award

Anwuli Anyah

Anwuli was born and raised in Ibadan, Nigeria and the eldest of four children. She moved to Edmond to attend UCO in 2008. She has had great research experience with Dr. Lillian Chooback on enzyme kinetics. Her major is Medical Technology/Pre-Med. She looks forward to graduating this summer and plans to attend medical school.

Academic Achievement Awards

Brittany Zimmerman, Ethan Rowell, Danny Samkutty

Brittany is an Edmond native who graduated from UCO in December 2010 with a degree in Biology. She was honored as a Class Marshall for the College at Commencement. She played softball for the University and pitched all four years. She has been admitted into the OU PA program this June. Ethan was our outstanding Biology student this year, and his biographical information is given above. Danny is from Yukon, Oklahoma and Danny's plan for the future is to begin medical school at the OU School of Medicine this Fall.

Dr. Beverley Cox Endowed Scholarship

Erica Becker

Erica is another Edmond native who came to UCO after graduating from Edmond North High School. She has traveled to New Mexico to study Sonoran Mud Turtles and to Turkey and Greece through the National Science Foundation. Other honors include being a lab assistant in Animal Biology, Gamma Beta Phi Honor Society, Oklahoma Research Day, Oklahoma Academy of Science, Tri-Beta Regional meeting, Bio-Blitz Field Meeting and the President's Honor Roll.

Dr. Margaret W. Hamilton Endowed Scholarship

Craig Koenigs

Craig was born in Omaha, Nebraska and moved to Oklahoma City in February 1995. He graduated from Carl Albert Senior High School in 2004. He came to UCO in Spring 2009 and is interested in the interactions amongst species and how those establish ecological niches and drive evolutionary processes. He also enjoys conservation and hopes to enroll in Graduate School for study in Marine Science after graduation in 2012.

Zane and Linda Skinner Charitable Fund Scholarship for Biology

Charles Nguyen, Kylie Gilcrest

Charles is a native of Oklahoma city. He is currently a research assistant under Dr. Hari Kotturi, studying the effects of novel phyto-compounds in Bitter Melon on drug-resistant cancer cells and on inflammation signaling pathways. He had the opportunity to present a research poster at the 2010 Oklahoma Research Day. He has been a Member of the Dean's Honor Roll and the President's Honor Roll. He will graduate next year and hopes to gain admission into an

M.D./PhD program. Kylie was born in the state of Washington on Whidbey Island. Both her parents were in the military also calling California home. She has been interested in science since a young child and is currently doing research about White Nose Syndrome in bats. She also enjoys music, dancing, and modeling.



Alumni

Alumni News

Kenneth J. Locey, a former student who worked with **Paul Stone**, got a few steps closer to earning his Ph.D. at Utah State University by passing his oral and written exams.

Biology alum Roxie Hites has taken a position with the Oklahoma Museum of Natural History at OU in Norman. Her official title there is Integrated Pest Management and Collection Technician. She serves in that capacity for all of the museum's collections. Roxie also worked with **Paul Stone**.

Rory Telemeco, who completed his MS under **Troy Baird** in 2009, has passed his qualifying exams at Iowa State University. He has recently received funding from the Environmental Protection Agency to complete the field work associated with his dissertation.

Joanne Peterson, who also earned her MS in 2009 under **Mel Vaughan**, touched base. Here's what she had to say "I am in the graduate program at OU Health Sciences Center in the lab of Dr. Brain Ceresa. I have passed my qualifying exam and required courses so I am an official doctoral candidate. And I now get to focus all my time working on my project looking at the molecular mechanism behind betacellulin induced corneal wound healing. Hopefully, I will complete my degree within the next two years and move on to a postdoc position and eventually a faculty position in academia."

Christina (Hulet) Johnson checked in with her old mentor, **Jim Bidlack**. Christina was a UCO biology student during the 1990s. She and her husband adopted a little boy from Ukraine and she left her position as Senior Research Associate at UNTHSC in Fort Worth to stay home with him. A few years ago she re-entered the work force with a job as Senior Scientist at Alcon Laboratories. Recently, Alcon was purchased by Novartis so she is now officially a NIBR scientist.

What are you up to?

We're always interested in hearing from our alumni and would love to share your story with our readers. If you'd like to update us on where you are and what you're doing, please send your story to our editor (lstable@uco.edu) or to our administrative secretary (slafave@uco.edu).

Thank You!



Thanks to all who helped us by donating funds needed to complete the wet lab. We're almost done! The next time you're on campus, you'll probably notice that Howell Hall has grown a bit. The new addition is on the southwest corner to the lab building. This facility is part of the Natural History Museum and will house specimens stored in alcohol. Work on the interior of the facility is still in progress. We'll get some more pictures when it's finished and give you a look inside next year. Better yet, drop in and get a tour!

Investing in Students through Donor Scholarships

Generations of students have travelled through the doorways and into the Biology lecture rooms and laboratories at Central. Each year students continue to be faced with the same challenges – overcoming the obstacles of being a first-generation college student (over 70% of students at Central), the financial challenges of working on a degree and raising a family, and the hardship of carrying student loans to pay for school and living expenses. The ambition and eagerness to learn with each generation has not changed and continues to grow stronger with new opportunities for students, such as the emphasis we place on undergraduate research.

With the state's assistance of Central's budget dwindling to a meager 30% for the 2011-2012 academic year, it is our job to ensure that the financial burden is not transferred to the current generation of students, and those who follow, to make up the difference. We have witnessed the importance of assisting students who are in our classrooms today with financial support through privately funded scholarships. And thankfully, alumni and friends of the Department of Biology are generously in tune to the needs of students these days too.

Over the last three years, two scholarships have been fully endowed and are providing financial support to students who are in need and have an impressive academic record. Two additional scholarship endowments have been established by donors and are growing through generous support of alumni and friends to become fully endowed. Each donation, big or small, is making a significant impact on students' lives. Your investment in students and the programs of the Department of Biology are much needed and appreciated.

We are sending a warm expression of "Thanks!" to those who have invested in the students within the Department of Biology (over 1,000 students!). In the spring, the College of Mathematics and Science including the Department of Biology was able to award over \$86,000 in student scholarships because of the generosity of alumni and friends. It is through donor-driven support in the form of student scholarships and gifts to specific programs that we are able to continue to surpass high expectations of the quality of a Central education. Thank you.

The **Joe Ernest Vaughan Endowed Scholarship for Bioscience and Conservation** has been established in Mr. Vaughan's memory by his son Joe Vaughan, Jr., BS '82 and by individual gifts from alumni, family and friends. If you would like to make a gift to the scholarship endowment in memory of Joe Vaughan or would like to commemorate a professor, friend or family member by

donating a tribute gift to establish an endowed scholarship or student research assistantship. For more information on the established scholarship endowments benefitting the Department of Biology and its students please contact Melody Hansen at (405) 974-3782 or mhansen5@uco.edu.

UCO BIOLOGY DEPARTMENT DONATIONS 2010-2011

Donations to the Department of Biology since July 1, 2010- June 30, 2011:

Dr. Beverley Cox Endowed Scholarship for Biology
Dr. Margaret Hamilton Endowed Scholarship for Botany
Joe Ernest Vaughan Endowed Scholarship for Bioscience and Conservation

Contributions received July 1, 2010 – June 30, 2011

Janie Axton
Dr. John Barthell
Dr. Lee Beasley
Dr. James Bidlack
Robin Buckallew
Stephen Chastain
Lelah Craig
Beverly Endicott
Sue Goodman
David Hart
Dr. Jenna Hellack
Dawn Holt
Dr. Krista Jones
Dr. L. Whit Marks
Margaret Matzinger
Joe Vaughan, Jr.

Thomas McGarry
Yuichi Nishi
Harvey Page
Rodney Page
Ronald Page
Cynthia Petree
Susan Reiswig
C.L. Ruth
Frances Ryan
William Schopflin
David Sincox
Marla Sirey
Dr. Sheila Strawn
Marilyn Surmeier
Zane and Linda Skinner
Nancy Wehreheim

Bostick Services Corporation
Text Book Brokers, Inc.
Western National Bank

CONGRATULATIONS

To the following UCO Students, who have been accepted to these professional programs for the Fall Semester, 2011.

OU – College of Medicine

Bates Albers, Leah

Hoge, Stephen

Humphries, Felicia

Jochum, John

Le, Henry

Noon, Miriam

Samkutty, Danny

OU – College of Dentistry

Lu, Daryn

Mirabal, Christian

OU – Occupational Therapy Program

Sumner, Mary

OU – Physicians Associate Program

Zimmerman, Brittany

OU – Tulsa Physician Assistant Program

Shanaki, Saura

OSU – College of Veterinary Medicine

Thomas, Sandra

OSU College of Osteopathic Medicine

Federico, Arturo

Foster, Donald

Freeman, Kacey

Harris, Melissa

Humphries, Felicia

Kardokus, Kalli

Noon, Miriam

Univ. of Pittsburgh – School of Medicine

Jochum, John

Univ. of Central Florida – School of Medicine

Jochum, John

Univ. of Florida – School of Medicine

Jochum, John

Uniformed Services Univ. – School of Medicine

Jochum, John

Temple Univ. – School of Dentistry

Mirabal, Christian

Comanche County Hospital – Medical Technology Program

Adhirikari, Prakriti

Pesta, Mary

St. Francis Hospital – Medical Technology Program

Thapa, Prakash

Valley View Hospital – Medical Technology Program

Ealy, Stephen

Ta, Chau

Parker College of Chiropractic

Ramy, Jessica

Logan College of Chiropractic

Ramy, Jessica

KCUMB – College of Osteopathic Medicine

Anyah, Anwuli

Federico, Arturo

A.T. Still College of Osteopathic Medicine – Kirksville

Anyah, Anwuli

A.T. Still University (AZ) - College of Osteopathic Medicine

Zrenda, Philip

Kansas City University of Medicine and Biosciences

Anyah, Anwuli

Image Courtesy of US DOE, HGP