



Bioluminescence



Bioluminescence Vol. 13
Editors: Brooke Stabler and Gloria Caddell

Fall 2009, and Spring and Summer 2010
<http://biology.uco.edu/biodream/newsletter.htm>

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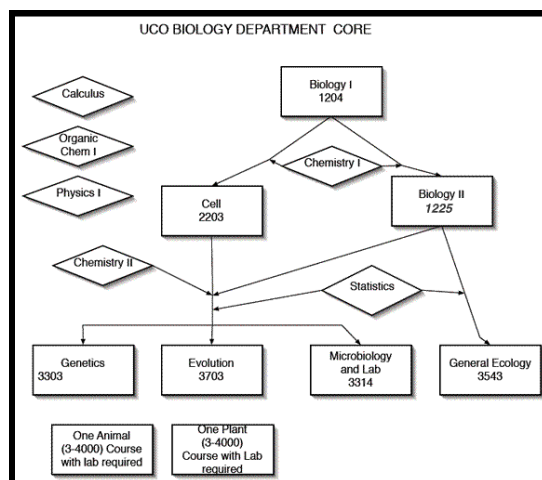
Chairman's Corner



Enrollment in biology continues to be high. The Nursing Department's decision to graduate two nursing classes a year has increased the demand on our service courses (Microbiology, Human Anatomy and Human Physiology), and the Department has close to 850 declared majors.

As I mentioned last year, Dr. Caire received an NSF grant to support our Herbarium and Museum collection. We have completed the museum and now have the storage facilities available for the herbarium, invertebrate, bird, and mammal collections. The planned extension to the Science Laboratory building for the Alcohol collection is now under construction. Thanks to the Biology faculty for their donations and a particular thanks to Dr. William L. Beasley for his pledge.

Last year in the newsletter, I mentioned we were in the process of a major curriculum revision. We have accomplished the revision of the undergraduate core program. Students majoring in Biology will all have the following core curriculum:



Chairman's Corner (cont.)

After the core, students will be able to take upper division courses in their area of interest. We feel this will allow students to diversify earlier into 3-4000 level courses, while getting a good foundation in the other stem sciences including Biology.

We are also beginning to offer on-line courses. We are now teaching Non-majors Biology, Biology for Majors I, Biological and Medical Terminology, and Evolution on-line. We plan to teach the lecture portion of Ecology, Cell Biology and Genetics on-line in the next year. Our next curriculum undertaking will be a revamp of the general education non-majors biology course and laboratory.

Future teachers in elementary school need the skills to start the early development of students in science. We are aware that these elementary school teachers are our first source for developing their students' interest in science. To prepare future elementary school teachers for this important job the department has piloted sections of non-major biology to give them a rigorous understanding of the life sciences while at the same time giving them skills they can use in their classrooms.

Finally, we lost Mr. Marvin Mays in the fall semester 2009. Marvin was my mentor and friend from the day I joined the UCO (the CSU) faculty in 1977. He and I could get into some great discussions (or arguments) on what and how to teach Zoology. He knew almost everything there was to know about invertebrates, particularly parasites. While today I look things up on the Internet, in the 1970s and 80s, Marvin Mays was my Internet.

What's happening?

UCO Natural History Museum



An Edmond home school co-op group visited the museum collections twice, once in April and once in May. They toured the herbarium, invertebrate and vertebrate collections, got to use microscopes and looked at skins and skulls of mammals, herps, and birds. Museum curator, Lynda Loucks, is pictured left with student visitors.

We received a museum donation from Oklahoma Baptist University to our bird and mammal collection this past semester. We added 655 mammals and 272 birds to our vertebrate collection because of this specimen transfer. The Oklahoma City Zoo donated de-accessioned specimens from their education department, and we were fortunate enough to obtain 30 bird and 16 mammal specimens from them – including a couple of exotics: a flamingo and golden lion tamarin skins that we did not previously have in our collection. They also donated a fruit bat skin.

One of the highlights of the year was acquisition and processing of a bottle nose dolphin from the Texas coast. The image at the right shows museum curator Lynda Loucks supervising her helpers Roxie and Jenna as they prepare to skin and gut this great addition to the UCOMNH!



We began construction on our new wet collection building this summer. The plan is to move the wet collections into the new building upon completion. This new addition will also provide more preparation space for students and curators for the UCONHM biological collections.

This year we started a program putting students to work in new and creative ways! Melody Hansen orchestrated a “student call-out” initiative to help collect funds for our college – specifically for the completion of this wet collection work space. We are taking donations at any time from anyone! If you’d like to help, please contact Melody at mhansen5@uco.edu or 974-3782 and let her know you’d like to help with the wet lab fund!

The Selman Living Lab

Activities continue at the Biology Department’s Selman Living Lab (SLL) located southwest of Freedom, Oklahoma.



We have a new collaboration with the Starcreek Astronomical Society (SAS) out of Woodward. They have agreed to assist in various service projects in exchange for use of the SLL astronomy facilities. Dr. Steve Maier of Northwestern Oklahoma State University is actively working with them to refurbish some of the astronomy domes and provide star shows on a regular basis. Steve’s email is sjmaier@nwsu.edu and he maintains a web page for the SLL astronomy activities at <http://www.nwsu.edu/science/physics/SLL>. Chad Ellington has returned to the area and will be assisting in astronomy activities at the SLL. Chad will be an adjunct in the UCO Engineering and Physics Department, teaching astronomy.

A teachers’ workshop sponsored by the Oklahoma Humanities Council will be held at the SLL in late July. The theme is Environmental Stewardship. Plans are also underway to jointly host with Alabaster Caverns State Park a Cave Rescue workshop in August.

Construction has started on the small multi-use classroom building at the SLL. It is small but sturdy! It will serve as a safe room, a classroom, a small kitchen, and as a lab space. The foundation is in place and if all proceeds as planned it will be completed by the fall semester. This is a National Science Foundation sponsored building.



We have one alarming bit of news to report this year. A bat netted at the SLL cave has tested positive for *Geomyces destructans*, the fungus associated with White Nose Syndrome (WNS) in bats. This syndrome has killed nearly a million bats in the northeast part of the US and has now spread to Oklahoma. The USFWS has made a recommendation to close the cave until more is known. We are analyzing the situation and will respond with the most appropriate actions to help conserve the bats.

The SLL has been used by classes from UCO, NWOSU, and other university groups, Boy and Girl Scout groups, and even a UCO sorority. The SLL provided field trips during the Western Oklahoma Prairie Chicken Festival.

A great big thank you goes out to all who have contributed and provided support to the SLL. The Biology Club has continued its tradition of service projects at the SLL and their activities are appreciated. We especially thank Dr. Karen Barnes (UCO), her brother Dr. Dan Tackett and the Aldridge Foundation for their continuing support. Contributions should be earmarked for the SLL.

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

Memories of a Mentor

By Jenna Hellack

Mr. Marvin Lee Mays

April 26, 1930- October 7, 2009

We lost a valued teacher and colleague in October 2009. Marvin Mays joined the UCO (then CSC) faculty in the fall of 1962. He retired in the spring of 1995, but continued to teach as an adjunct for the Biology Department until the spring of 2009.



1979



2002

For those of you who knew Mr. Mays as a teacher, his white lab coat, his reference to his beloved students as “you people”, and his knowledge of all areas of Biology, particularly zoology, are the first things that come to mind. For me, he was my mentor, my friend, and one of the most knowledgeable individuals I have ever known. He was a true Renaissance man, a scholar not just of biology, but music, theater, movies, art, and almost any known scholarly activity.

When I came to UCO (then CSU) in 1977, he was the first to welcome me. He was the first person I came to with teaching problems. I sat through his Zoology course not only because of all his knowledge, but because of the way he could tell a story. He was a person I could argue with, yell at, and in general have strong disagreements with, but always we were friends. He cared for his students and I believe there are many of you out there that have fond memories of him.

I would love to hear stories about your experiences in his classes, both the good and the bad. Please feel free to e-mail me: jhellack@uco.edu.

Faculty News

Recent Publications

Baird, T.A. and *Curtis, J.L. Context-dependent acquisition of territories by male collared lizards: the role of mortality. *Behavioral Ecology*. Doi:10.1093/beheco/arq049.

Baird, T.A. Does experimentally induced conspicuous coloration increase risk of predation and conspecific aggression in first-year collared lizard males? *Herpetologica* 65: 31-38.

Bass, D. Macroinvertebrate communities and their freshwater habitats in the Cayman Islands. *Flicker* 5:4-8.

Bass, D. A comparison of macroinvertebrate communities and their freshwater habitats in the Cayman Islands. *Living World, Journal of the Trinidad and Tobago Field Naturalists' Club* 2009:1-10.

Bass, D. and de Silva, M. (In press) Invertebrate community structure in a freshwater pond on Mayreau Island, St. Vincent and the Grenadines, West Indies. *Living World, Journal of the Trinidad and Tobago Field Naturalists' Club*, 2010.

Butler, C. J.; *Pham, L.H.; *Stinedurf, J.N.; *Roy, C.L.; *Judd, E.L.; *Burgess, N.J. and **Caddell, G.M.** Yellow Rails wintering in Oklahoma. *Wilson Journal of Ornithology* 122: 385-387.

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

*Chukwuma, S. and **Vaughan, M.** Clonal analysis of myofibroblast differentiation. *FASEB J.* 24:823.12

*Judd, E.; **Butler, C.J.**; *Roy, C.; *Pham, L.; *Burgess, N. and *Davis, E. Mapping the distribution of Eurasian Collared-Doves (*Streptopelia decaocto*), White-winged Doves (*Zenaida asiatica*), and Inca Doves (*Columbina inca*) in Oklahoma County. Proceedings of the Oklahoma Academy of Sciences 89: 79-86.

Kotturi, H.S.; Li, J.; O'Connor, M.B.; Stickel, S.L.; Yu, Y.; Wagner, T.E. and Wei, Y. In vitro and in vivo delivery of novel anticancer fusion protein MULT1E/FasTI via adenovirus vector. Cancer Gene Therapy, 17:164-170.

Lack, J.B.; Pfau, R.S.; and **Wilson, G.M.** Demographic history and incomplete lineage sorting obscure population genetic structure of the Texas mouse (*Peromyscus attwateri*). Journal of Mammalogy, 91:314-325.

*Ledbetter, D. and **Butler, C.J.** Western Kingbird predation of a Black-chinned Hummingbird. Bulletin of the Oklahoma Ornithological Society 42: 16.

Lewis, D. P. and **Ovrebo, C.L.** Mycological literature on Texas fleshy Basidiomycota, two new combinations, and new fungal records for Texas. Journal of Botanical Research Institute of Texas 3(1): 257-271.

Mata, J. L. and **Ovrebo, C.L.** New reports and illustrations of *Gymnopus* for Costa Rica and Panama. Fungal Diversity 38: 125-131.

O'Connor, M.B.; Li, J.; **Kotturi, H.S.**; Yu, Y.; Wagner, T.E.; and Wei, Y. Fusion induced reversal of dendritic cell maturation: an altered expression of chemokines and chemokine receptors in dendritomas. Oncology Reports 23:545-550.

*Palmer, T.R. and **Vaughan, M.B.** Antioxidant effect on myofibroblast differentiation. FASEB J. 24:823.11

*Pham, L. L.; *Roy, C.; *Davis, E. and **C. J. Butler.** Monk Parakeet nesting attempts in Oklahoma. Bulletin of the Oklahoma Ornithological Society 42: 17-18.

*Telemeco, R.S.; Radder, R.S; **Baird, T.A.** and Shine, R. Thermal effects on reptile reproduction: adaptation and phenotypic plasticity in a montane lizard. Biological Journal of the Linnaean Society. In press.

Vaughan, M.B.; Tomasek, J.J.; *Noon, M.C. and *Isiaho, A.M. Ectopic telomerase expression in Dupuytren's Disease myofibroblasts. FASEB J. 24:823.10

Vaughan M.B.; Ramirez R.D.; *Andrews C.M.; Wright W.E and Shay J.W. H-Ras expression in immortalized keratinocytes produces an invasive epithelium in cultured skin equivalents. PLoS ONE 4(11): e7908. doi:10.1371/journal.pone.0007908

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

Recent Presentations

Baird, T.A. Does distant display function to signal male rivals or females? Invited presentation to the Department of Brain, Behavior, and Evolution. Macquarie University, New South Wales, Australia, November, 2009.

Baird, T.A. Distant display in male collared lizards: Intra- versus intersexual signaling. Invited presentation to the Evolutionary Biology Group, University of Sidney, New South Wales, Australia, September, 2009.

Bass, D. Aquatic invertebrates and their freshwater habitats from small Caribbean islands. Presented at the UCO Tri-Beta Chapter / Biology Club, November 2009.

Bass, D. Investigations of freshwater invertebrates from small Caribbean islands. Presented at the UCO Sigma Xi Club, October 2009.

Caire, W. Bats of Oklahoma - bats in my belfry. Presented to the Tulsa Audubon Society, November 17, 2009.

Chen, W.R.; Simmons, C.K. and **Wilson, G.M.** STEP@UCO: An Undergraduate Research Program as an Integral Part of Transformative Learning for Students Throughout their College Life in STEM Disciplines. Council on Undergraduate Research, Weber State University, Ogden, UT, June 19-22, 2010.

*Coughlan, K., and **Vaughan, M.B.** Inhibition of Ras-expressing keratinocytes using Geltrex® liquid basement membrane. OUHSC Summer Undergraduate Research Program, Oklahoma City, OK, July 24, 2009. (Presentation Award)

Ovrebø, C. L.; Hughes, K.W. and Halling, R.E. A preliminary phylogeny of *Tricholoma* based on the rRNA ITS region. Presented at the Mycological Society of America meeting , Snowbird, UT, July 2009.

Ovrebø, C.L. Mycorrhizae and endophytes. Presented at the Oklahoma Native Plant Society Indoor-outing, February 6, 2010.

Ovrebø, C.L. Introduction to mushrooming. Presented at the Oklahoma Master Naturalists' meeting, February 9, 2010.

Ovrebø, C. L. Introduction to microscopic characters. Presented at the New Mexico Mycological Society Annual Foray, Taos. August 20-23, 2009.

Ovrebø, C.L. What you might find at this foray. Presented at the North American Mycological Association, Lafayette, LA. November 2009.

Vaughan, M.B. Keratinocyte/fibroblast co-cultures: The environment makes a difference. Invited presentation to the Department of Anatomy and Cell Biology, OSU-Center for Health Sciences, Tulsa, OK, February 26, 2010.

Wilson, G.M., and **Radke, W.J.** Promoting Transformation: Supporting Student and Faculty Collaborations in Research, Creative, and Scholarly Activities at the University of Central Oklahoma. Undergraduate Research Conference for Faculty, Staff and Administrators, Oklahoma State Regents for Higher Education, March 26, 2010.

Wilson, G.M., and **Radke, W.J.** Promoting Transformation: Supporting Student and Faculty Collaborations in Research, Creative, and Scholarly Activities at a Metropolitan University. Council on Undergraduate Research, Weber State University, Ogden, UT, June 19-22, 2010.

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

(See also student and faculty presentations listed for SWAN, OAS Technical Meeting, LS-OKAMP and Oklahoma Research Day, as well as thesis presentations by graduate students)



Biology Department Participation:
Oklahoma Academy of Science 98th Annual Technical Meeting
East Central University, Ada, Oklahoma November 6, 2009

Oral Presentations

*Banks, S. and **Vaughan, M.** The effects of indirubin on myofibroblast differentiation.

*Koppari, K. L.; *Cloud, T. L.; **Caire, W.**; Van Den Busshe, R.A. and **Wilson, G.M.** Population genetic structure of the hibernating Cave Myotis, *Myotis velifer* from cave localities in northwestern Oklahoma. (Awarded first place in zoology).

Vaughan, M. Vimentin expression in activated and transformed keratinocytes.

Poster Presentations

*Allison, K.; *Parks, E. and **Caire, W.** The number of tubercles and their distribution on the ears of Mexican Free-tail Bats (*Tadarida brasiliensis*).

*Cloud, T. L.; *Koppari, K. L.; **Haynie, M.L.** and **Wilson, G.M.** Comparative phylogeography of two species of *Peromyscus* in Oklahoma and adjacent states.

*Coughlan, K. and **Vaughan, M.** Inhibition of Ras-keratinocytes using Geltrex™ liquid basement membrane on skin equivalents and DED.

*Parks, E.; *Allison, K. and **Caire, W.** Estimating the volumes of the ear tubercles on the Mexican Free-tailed Bat.

Stabler, L. B.; *Johnson, W.; *Locey, K. and **Stone, P. A.** A comparison of population density, diffusion dispersal and demographics of the Mediterranean Gecko (*Hemidactylus turcicus*) in two central Oklahoma habitats.

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



Biology Department Participation:
The Southwestern Association of Naturalists 57th Annual Meeting
 Llano River Field Station, Texas Tech University, Junction, Texas
 April 22-24, 2010

Oral Presentations

Baird, T. A.; *Hoge, S. J. and *York, J. R. Colonization of new habitat by hatchling Collard Lizards.



*Roy, C. and **Butler, C. J.** Metapopulation dynamics of the Common Yellowthroat *Geothlypis trichas insperata* occurring in south Texas.

Poster presentations

Butler, C.; *Frazee, S.; *Stinedurf, J. and **Jones, R.** Yeast and bacterial growth in hummingbird feeders.

Caire, W.; **Butler, C. J.;** **Caddell, G. M.;** **Bass, T. D.;** **Stone, P. A.;** **Ovrebo, C. L.;** **Haynie, M.W.;** **Lord, W. D.;** **Barthell, J. F.** and **Loucks, L. M.** University of Central Oklahoma Natural History Museum NSF collection improvement grant.

*Cloud, T. L.; *Koppari, K. L.; **Haynie, M. L.** and **Wilson, G. M.** Comparative phylogeography of two species of *Peromyscus* in Oklahoma, Arkansas, and Texas.

*Judd, E.; **Butler, C.;** *Roy, C.; *Burgess, N.; *Pham, L. and *Davis, E. Observations of Eurasian Collared Dove (*Streptopelia decaocto*), White-winged Dove (*Zenaida asiatica*), and Inca Dove (*Columbina inca*) in Oklahoma County.

*Judd, E. and **Butler, C.** Extent of hybridization between Black-chinned Hummingbirds *Archilochus alexandri* and Ruby-throated hummingbirds *Archilochus colubris*.

*Koppari, K. L.; *Cloud, T. L.; Van Den Bussche, R.A. and **Wilson, G. M.** Population genetic structure of *Myotis velifer* as inferred by mitochondrial sequence data in northwestern Oklahoma.

*Nguyen, S. H. and **Butler, C. J.** Differential migration in Yellow Rails (*Coturnicops oregonensis*).

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

Stabler, L.B. and *Still, S.M. Factors influencing density and biomass of Salt Cedar (*Tamarix* species) along a northwest to southeast transect in Oklahoma.

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



Biology Department Participation:
 9th Annual Research Day for Regional Universities
 Northeastern State University, Broken Arrow, Oklahoma
 November 13, 2009

Oral Presentations

*Koppari, K.L.; *Cloud, T.L.; Van Den Busche, R.A.; **Wilson, G.M.** and **Caire, W.** Population genetic structure of hibernating Cave Myotis, *Myotis velifer*, from cave localities in northwestern Oklahoma.

*Smith, K. and **Haynie, M.S.** The genetic diversity of Striped Skunk (*Mephitis mephitis*) populations throughout Oklahoma and Texas.

Poster presentations

*Allison, K.; *Parks, E. and **Caire, W.** The number of tubercles and their distribution on the ears of Mexican Free-tail Bats (*Tadarida brasiliensis*).

*Banks, S. and **Vaughan, M.** The effects of indirubin on myofibroblast differentiation.

Barthell, J.; *Clement, M.; Freeman, B.; Liu, L.; Presky, M.; *Redd, J.; Ricci, P.; Stevison, B.; Petanidou, T.; Hranitz, J. and Wells, H. The role of nectar in plant competition with native and non-native island ecosystems: The case of Yellow Star-thistle.

*Bass, C. and **Bass, D.** Aquatic invertebrate community structure in water-filled bracts of *Heliconia caribaea* from Saba.

Bass, D.; *FitzSimons, T.; *Lu, D. and *Telemeco, R. Preliminary investigation of macroinvertebrates and water quality in aquatic habitats of the Nickel Preserve, Oklahoma.

*Bates, L. A.; **Stone, M.** and **Stone, P. A.** Do *Kinosternon sonoriense* eat tadpoles?

*Becker, E. C.; *Stanila, B. and **Stone, P. A.** Prey selectivity of Sonoran Mud Turtles (*Kinosternon sonoriense*).

*Bishop, D. E. and **Vaughan, M.** N-acetyl-L-cysteine reduces TGF- β driven collagen lattice contracture.

*Bray, L.; **Fent, D.**, and **Lake, T.** Fitness and mood: Assessment and comparison of assisted living and independent living populations.

Butler, C.; *Frazee, S.; *Stinedurf, J. and **Jones, R.** Some preliminary findings on yeast and bacterial growth in hummingbird feeders.

*Chukwuma, Sarah. Reproducible assay for protomyofibroblasts.

*Clement, M.; Liu, L.; Preskey, M.; *Redd, J.; **Barthell, J.** and Wells, H. Honey bee foraging behavior at artificial composite flowers: The roles of reward quality and flower complexity.

*Cloud, T. L.; *Koppari, K. L. ; **Haynie, M.** and **Wilson, G.M.** Comparative phylogeography of two species of *Peromyscus* in Oklahoma and adjacent states.

*Ferguson, H. D. and Rajala, R.V. Insulin receptor signaling in cone photoreceptors.

*FitzSimons, T.; *Baigent, M.; *Kochie, P. and **Bidlack, J. E.** Harnessing solar energy using photosynthetic and organic pigments.

*Harrison, K. and **Vaughan, M.** The effects of curcumin on myofibroblast cells.

Lord, W. and Bliss, K. Pulmonary nematodiasis (Nematoda: Pseudaliidae) as a potential contributing factor in the bycatch death of an Atlantic Harbor Porpoise (*Phocoena phocoena*).

*Noon, M.; **Vaughan, M.** and *Gary, A. Telomerase effects on Dupuytren's Disease fibroblasts: Implications for long-term study capacity.

*Ottman, J. T. Effects of Fly Nap® on ovipositing and fertility in Basc mutant and wild type *Drosophila melanogaster*.

Ovrebo, C.; Hughes, K. and Halling, R. E. A preliminary phylogeny of *Tricholoma* based on the rRNA ITS region.

Ovrebo, C.; **Lord, W.**; *Davidson, H.; *Koenigs, C. and *Olinger, B. Arthropods on Oklahoma fleshy fungi: a first look.

*Palmer, T.; Marchette, L.; Giraud, A. and Kasus, A. The pseudopeptide carcinine protects photoreceptors from toxic products of oxidative stress.

*Parks, E.; *Allison, K. and **Caire, W.** Estimating the volumes of the ear tubercles on the Mexican

Free-tailed Bat.

*Prather, C. and **Caire, W.** Does interspecific competition affect morphological traits of *Dipodomys ordii* and *Chaetodipus hispidus*?

*Roy, C. and **Butler, C.** Brownsville Common Yellowthroats (*Geothlypis trichas insperata*) metapopulation dynamics.

Stabler, L. B.; *Johnson, W.; *Locey, K. and **Stone, P. A.** A comparison of population density, diffusion dispersal and demographics of the Mediterranean Gecko (*Hemidactylus turcicus*) in two central Oklahoma habitats.

*Still, S. M. and **Stabler, L. B.** Factors influencing density and standing biomass of Salt Cedar (*Tamarix* species) along a northwest to southeast transect in Oklahoma.

*Stinedurf, J. Yellow Rails in Oklahoma.

*Telemeco, M. and **Allan, E.** Effects of science fair activities on student perceptions of UCO.

*Truong, C.; **Lord, W.**; Lord, D.; and **Luna, L.** An innovative therapeutic protocol for children with chromosome 22Q11.2 duplication disorder.

Watkins, B.; **Caddell, G.**; *Blazs, J. and *Reid, M. Landscape-level mapping of Eastern Redcedar encroachment at the Selman Living Laboratory.

*Wheeler, E. and *Reid, M.T. Distribution of *Echinocereus* based on terrain, position and soil depths on or near mountain sites and grasslands of the Wichita Mountains Wildlife Refuge.

* 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 14th Annual Research Symposium
Oklahoma State University, October 3, 2009

Posters

*Banks, S. and **Vaughan, M.** Indirubin enhances TGF β myofibroblast differentiation.

*Allison, K.; *Parks, E.E. and **Caire, W.** The number of tubercles and their distribution on the ears of Mexican Free-tail bats (*Tadarida brasiliensis*).

*Parks, E. E.; *Allison, K. and **Caire, W.** Estimating the volumes of the ear tubercles on the Mexican Free-tailed Bat.

*Redd, J.; **Lord, W.**; *Stine, E. and *Koenigs, C. Preliminary analyses of carrion colonization by necrophagous flies (Diptera: Calliphoridae) in central Oklahoma: Climatic influences, dispersal limitations and island biogeography.

*Still, S. M. and **Stabler, L. B.** Factors influencing density and standing biomass of Salt Cedar (*Tamarix* species) along a northwest to southeast transect in Oklahoma.

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Other Faculty Activities

Dr. Troy Baird spent the fall semester of 2009 on sabbatical conducting field behavioral ecological studies on eastern water dragons, *Physignathus leseuri*, in New South Wales, Australia.

Dr. David Bass identified aquatic invertebrates for an environmental education project on Mayreau (Grenadine Islands).

Dr. Jim Bidlack continues to co-author "Introductory Plant Biology", published by McGraw Hill, and put tremendous effort into putting out the new 12th edition this year.

Dr. Chris Butler and students Jill Stinedurf, Chris Roy, and Eric Judd presented at the fall Oklahoma Ornithological Society meeting. Dr. Butler also gave a talk for the Red Slough Birding Convention called, "Yellow Rails at Red Slough".

Dr. Clark Ovrebo served as co-chief mycologist for the North American Mycological Association meeting, Nov 2009, Lafayette, LA. Dr. Ovrebo also led the spring mushroom field trip, Oklahoma Native Plant Society at Lake Thunderbird State Park, April 3 and the summer mushroom field trip for the Oklahoma Native Plant Society, Lake Thunderbird State Park, June 13.

Dr. Mel Vaughan attended the Federation of American Societies for Experimental Biology Conference in Anaheim, California.

Dr. Gloria Caddell and **Dr. William Caire** were part of a Teachers' Institute hosted this past summer by the University of Central Oklahoma. It involved environmental history and civic skills and occurred from July 27-30. It was sponsored by the Oklahoma Humanities Council and the Kirkpatrick Family Fund: "Teaching Civic Engagement and the Politics of Democracy: Environmental History, Land and Energy Stewardship, and Community in Oklahoma." It provided an interdisciplinary and interactive approach to implementing service learning activities and civic skills into the K-12 curriculum. Dr. Patti Loughlin from UCO's LA College directed the grant and Institute. The Institute spent time at the Selman Living Lab. **Dr. Caddell** and **Dr. Caire** also led field trips to the Selman Living Lab, to the Kline Ranch, and presented workshops on prairie plants and bats at the Audubon Society's Lesser Prairie Chicken Festival held in northwestern Oklahoma April 16th-17th.

Dr. Gloria Caddell was interviewed and filmed for the OETA “Oklahoma Gardening” show, highlighting the UCO Gardens.

Dr. William Caire and his mammalogy class volunteered at the Oklahoma Biological Survey BioBlitz at Robber’s Cave State Park on September 18-19. A BioBlitz is a rapid 24-hour inventory of the biological diversity (a count of as many species as possible) in a 24-hour period. The BioBlitz was conducted by volunteers from around the state and the region. **Dr. Clark Ovrebo** participated in Bioblitz 2009 at Robbers Cave State Park, identifying mushrooms.

Dr. Elizabeth Allan hosted the Oklahoma Science Teachers Association fall conference at UCO on November 7th, 2009. Teachers from around the state attended the conference held in Howell Hall and the Lab Annex. Over 300 teachers preregistered and over 75 registered at the door making it the most attended conference in several years. UCO faculty from the CMS as well as faculty from the College of Education and Professional Studies presented at the conference. Biology faculty included **Sherry Meeks, Brooke Stabler, Hari Kotturi, Bob Brennan, Linda Luna, and Jenna Hellack.**

Dr. Anne Ewing attended the OSU College of Osteopathic Medicine Open House in Tulsa, OK, March 5, 2010.

Dr. David Bass attended the annual meeting of the American Association for the Advancement of Science (AAAS) in San Diego during February 17-22. In addition to attending numerous excellent presentations, Dr. Bass wore several hats at this event, including serving as the Oklahoma delegate at AAAS business meetings and playing an organizational role with the Academy section of AAAS (board member, Scripps Institute field trip leader, and security head). Dr. Bass also was inducted as an AAAS Fellow by Nobel laureate, Dr. Peter Agre, during this meeting for “teaching excellence positively impacting students, original and definitive research on freshwater invertebrates of the Caribbean islands, and outstanding service to the profession and public.” Dr. Bass was also a co-organizer and judge at the Annual State of Oklahoma Junior Academy of Science Competition at East Central University in Ada, OK, on March 25-27, 2010.

Dr. David Bass led the Marine Ecology trip to the Gulf Coast on March 13-19, 2010, in Rockport, TX. **Dr. Jenna Hellack** also attended the Marine Ecology trip.

Oklahoma Academy of Science Field meetings

The fall 2009 field meeting was held at Osage Hills State Park October 9-11. Dr. Gloria Caddell and Dr. Clark Ovrebo led field trips, and as always, Dr. David Bass contributed significantly to the success of the trip. Other UCO faculty and students who attended included Bill Caire, Emily Stine, Eric Staub, Jocelyn Bennett, and Lynn Wiley.

The spring 2010 meeting was held at Lake Wister State Park April 9-11. Gloria Caddell and Clark Ovrebo once again led field trips and a good time was had by all! Dr.



William Caire led the mammalogy trip and he and Emily Stine, a graduate student, are pictured preparing voucher specimens of small mammals as part of several research projects. The fall 2010 meeting will be held at Roman Nose State Park, September 24-26, 2010.

Grants and Awards Received

Dr. Chris Butler received an external grant (\$6400) from the Forest Service for a project titled "Using Stable Isotope Analysis to Examine Migratory Connectivity in the Yellow Rail (*Coturnicops noveboracensis*).

Dr. Michelle Haynie received an external grant from the National Science Foundation for "Acquisition of an Automated DNA Sequencer to Enhance Faculty-Student Research in Molecular Biology at the University of Central Oklahoma." \$130,006 (3 years)

Dr. John Barthell received National Science Foundation REU funding for "REU Site: Ecology and Behavior of Honey Bees and Solitary Bees" \$301,586 (4 years)

INBRE grants

Mel Vaughan: Environmental contribution to the epithelial to mesenchymal transition of Ras-overexpressing keratinocytes in vitro – \$38,461

Hari Kotturi : Effect of Bitter Melon leaf extract on *mdr1* gene expression and function of P-gp protein in drug-resistant colon cancer cells – \$31,291

EPSCoR REU grant

Jim Bidlack and Jocelyn Bennett: Biofuel Crop Pest Resistance - \$4,160



*Biology Department Faculty recipients of the
Dr. Joe C. Jackson College of Graduate Studies and Research
Fall 2010 On-campus Grants*

Troy Baird- How Do Fluctuating Populations Dynamics and Availability of New Habitat Influence Behavior and Reproductive Success in Male Collared Lizards? \$3000

Bob Brennan- Nasal Carriage of *Staphylococcus aureus* and Methicillin-Resistant *Staphylococcus aureus* (MRSA) in College Students. \$1000

Chris Butler- Using Multiple Stable Isotopes to Examine Migratory Connectivity in the Yellow Rail (*Coturnicops noveboracensis*). \$7400

Mel Vaughan- Differentiation Potential of Immortalized Dupuytren's Disease Myofibroblasts. \$1500 (James Allen and Barbara Shadden co-PIs)

Clark Ovrebo- Fleshy Fungi and their associated Arthropod biota in Oklahoma. \$1500 (Wayne Lord co-PI).

Paul Stone- Phylogeography of Sonoran Mud Turtles in a Fragmented Landscape. \$7500 (Michelle Haynie co-PI).

Bill Caire- Survey of Natural History Museums for Oklahoma Mammal Data. \$3000 (Lynda Loucks co-PI).

Michelle Haynie- Genetic Variation at Major Histocompatibility Complex Loci in *Neotoma albigula* (White-throated Woodrat): Potential Clues to the Evolution of North America Arenaviruses. \$7500

Hari Kotturi- Effect of Bitter Melon Leaf Extract on *mdr1* Gene Expression and Function of P-gp Protein in Drug Resistant Colon Cancer Cells. \$6970

Wayne Lord- Molecular Identification of Morphologically Similar species of Necrophagous Flies (Diptera: Calliphoridae) in Central Oklahoma: Implications for Medical and Forensic Entomology \$4450 (Jenna Hellack and James Creecy co-PIs).

Watkins, Brad- Landscape-Level Mapping of Eastern Redcedar Encroachment at the Selman Living Laboratory. \$1281 (Gloria Caddell co-PI).

Meet the Faculty

Dr. Bob Brennan



I was born in Emmetsburg, Iowa, which is a small farming community in northwest Iowa best known for football, wrestling, and its St. Patrick's Day celebration. I am one of five children. My father was a carpenter and my mother worked as a nurse at the county hospital. Most of my childhood days were spent playing sports with my buddies. I was a four sport athlete in high school participating in football, basketball, track and field, and baseball. My senior year I was selected as a first team all state defensive back by the Des Moines Register and played in the Shriners' all star football game. I was also awarded academic all state status that year and was a member of the National Honor Society. So it is possible to do well in both athletics and academics.

After graduating from Emmetsburg High School in 1988 I went to the University of South Dakota to study Biology and play football, which is where I met my incredible wife Martha, who at the time was a member of the track and field team. During my time at USD, I wasn't really sure about what I wanted to do after college. All I knew was that I enjoyed many different aspects of biology. I considered everything from trying to get a position with the Department of Natural Resources, to professional schools, to graduate schools.

In 1993 I graduated from USD with a B.S. in Biology and accepted a position as a lab technician in a microbiology lab in the Veterinary Medical Sciences Department at Louisiana State University. This is when I first discovered my passion for studying and understanding infectious disease. My supervisor Dr. Richard Corstvet strongly encouraged me to apply to graduate school. After a year I applied and was accepted into the master's program in Veterinary Medical Sciences. I will forever be grateful to Dr. Corstvet for his guidance and encouragement. During that same year Martha, who was now a member of the LSU track and field team, and I were married. At LSU my research was part of a program to develop a vaccine for the prevention of pneumonia in cattle. My project focused on evaluating antibody responses to outer membrane proteins of *Pasteurella haemolytica* A1.

I was awarded a master's degree in Veterinary Medical Sciences in 1997 after which I accepted a position as a research associate in the Animal Sciences Department at Texas A&M University where I worked for two years studying ways to eliminate food borne pathogens from various food products. It was during this time that I decided to pursue a Ph.D. in Medical Sciences. In the fall of 1999 I joined the lab of Dr. James Samuel at Texas A&M University System Health Science Center in College Station, where I spent the next five years studying the host pathogen relationship of *Coxiella burnetii* in a mouse model. During that time my wife and I welcomed our first two daughters Grace and Eve.

After being awarded my Ph.D. in Medical Sciences I accepted a postdoctoral position at the University of Minnesota in 2004, where I spent one year studying the pathogenesis of *Streptococcus pyogenes*. During that year Martha and I welcomed our third daughter Ivy. Towards the end of that year with the University of Minnesota, I was offered a position as a senior microbiologist in the Medical Division at 3M Corporation, where I worked for the next four years as a product developer in the Diagnostics Department. My four years spent with 3M were very exciting. I was able to work on interdisciplinary teams with chemical engineers, mechanical engineers, statisticians, and clinicians. I learned a tremendous amount about what it takes to get from doing bench science to making a product that has commercial value. During this time Martha and I welcomed our fourth daughter, Bella, to the family.

Although my time at 3M was exciting and educational, it did not satisfy my desire to be an educator. Throughout my career I have always been an educator in some capacity and decided that I needed to be doing it full time rather than part time. During my fourth year with 3M I started looking for academic positions where teaching was a priority and research was strongly encouraged and supported. UCO provided that opportunity and in the fall of 2009, I joined the faculty of the College of Math and Science in the Biology Department. My wife also became the head women's track coach here at UCO in the fall. We both feel very blessed to have been given these opportunities and look forward to long and successful careers with UCO and raising our four active girls in a great community.

Dr. Hari Kotturi



I was born in Hyderabad, which is the capital city of Andhra Pradesh in India. I am the youngest of three children. My mom is a housewife and my dad is an engineer. Since my childhood I was always fascinated by the world around me. I used to ask my father a million questions about everything that surrounded me and my father would encourage me to find answers on my own. I would spend hours in the backyard with my magnifying glass looking at leaves, insects, and ants, and also preparing and testing some strange concoctions. Throughout my school years I toyed with different ideas of what I wanted to be when I grew up; they ranged from wanting to be a truck driver and exploring the world, flying fighter jets, being prime minister of my country, or becoming a physicist exploring the world of subatomic particles, which is to say I had no idea of who I wanted to be. One area that remained unchanged during all those years was my desire to share what I know with everyone else and to be a teacher and researcher.

During my undergraduate years, I took different courses in botany and zoology which did not spark sufficient enthusiasm in me. But I found Microbiology, Biochemistry and Molecular Biology courses really interesting. After receiving my undergraduate degree in Microbiology from Avanathi College –Osmania University, I went on to earn my Master’s in Microbiology at DSM College – SRTMU. My two years at DSM College were the most transforming years in my life, as it was there I met my mentor and advisor Dr. Shiva Aithal. His passion for teaching and research was contagious and I decided that I wanted to be a professor. For my master’s thesis, I worked on ethanol fermentation and how to improve the yield using sterols.



I was accepted into Clemson University for my PhD in Microbiology. After finishing my core course work I worked with my mentors Dr. Thomas Hughes and Dr. Jeremy Tzeng on projects related to bioremediation. During my early graduate years, I realized that cancer research is what I am really interested in and joined my mentor and advisor Dr. Charlie Wei. My dissertation work was on creating fusion proteins and how to deliver them to cancer cells using viral vectors and their application in cancer gene therapy. During my graduate studies at Clemson, I was a teaching assistant for many of the upper level microbiology courses and I loved teaching and working one-on-one with undergraduate students. When I was about to graduate, I was searching for a school which focuses on teaching as well as research and working with undergraduates and UCO provides such an environment. I am thrilled to be part of UCO and look forward to learning and growing at UCO.

Student Activities

Undergraduate Research and Awards

McNair Scholars working with **Dr. Mel Vaughan** during summer 2010:

Arturo Federico- Effect of collagenase on invasion of ras-overexpressing keratinocytes

Armando Valencia- Does TGF-beta promote epithelial-to-mesenchymal transition in ras-overexpressing keratinocytes?

Shaquita Banks will work part-time continuing her LS-OKAMP myofibroblast research with Dr. Vaughan, and part-time as a McNair Scholar in the lab of Dr. Al-Ubaidi, Dept. of Cell Biology at OUHSC.

Tiffany Palmer, working with **Dr. Mel Vaughan**, was an undergraduate poster award finalist at the FASEB conference in Anaheim for her research on “Antioxidant Effect on Myofibroblast Differentiation”.

Kim Coughlan, also working with **Dr. Vaughan**, won a presentation award at the OUHSC Summer Undergraduate Research Program for her work “Inhibition of Ras-expressing Keratinocytes Using Geltrex® Liquid Basement Membrane”.

INBRE and STEP@UCO

The Sure-Step program ended its 5-year run last year, and the new STEP@UCO grant was funded by the NSF beginning in the summer of 2009. The new STEP grant is different in two ways: Supplemental Instruction is no longer funded by NSF but is now covered by the Dean’s office, and a new Fall Bridge program was funded; this program recruits community college transfer students into a one-week program to prepare students for University life, by offering mentoring in English and Math preparation, introduction to research opportunities, campus life, and campus resources. The Summer Bridge program was kept in the new grant, so incoming freshmen in the STEM disciplines have opportunities to work with faculty research projects. The program website is located at <http://cms.uco.edu/step/index.html>.

Dr. Wayne Lord and **Dr. Mel Vaughan** are the Biology faculty who participated as faculty mentors during the 2009 Summer Bridge program. In addition to the freshmen students, two high school science teachers participated with Drs. Lord and Vaughan through funding provided by Oklahoma EPSCoR. The Biology faculty working in the 2010 Summer Bridge program include **Dr. Chris Butler**, **Dr. Michelle Haynie**, and **Dr. Mel Vaughan**. Four other faculty from Chemistry, Engineering/Physics, and Computer Science are also participating.

The NIH INBRE program was re-funded at OUHSC for another 5 years. The goal of the INBRE program is to bring biomedical research into the classroom and laboratories at undergraduate universities, and to otherwise expose undergraduate students to biomedical research. There were no Biology students participating in the 2010 INBRE summer research experience; however, two similar OUHSC summer research programs include our Biology undergraduates; Aileen Parks and Kadi Tripp will work in the NARCH program, and Kalli Kardokus will work in the SURE program.

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

Graduate Students

Currently there are 16 graduate students in the Biology department with 10 newcomers this past year. Newcomers include Kambridge Brown, Stephen Frazee, Sarah Hoss, Jeffrey Pate, Yuhang Shang, Eric Wheeler, Amy Tankersley, Kelly Smith, Raymond Rosana, and Jared Lamb.

Jennifer Curtis defended her master's thesis in April 2010. She worked with Dr. Baird studying "Social modulation of androgens and glucocorticoids in territorial male collared lizards."

Chris Roy defended his thesis titled "Genetic Diversity of the Brownsville Common Yellowthroat (*Geothlypis trichas insperata*) in July and will be pursuing his Ph.D. at Rice University beginning this fall.



*Biology Department Student recipients of the
Dr. Joe C. Jackson College of Graduate Studies and Research
Fall 2010 On-campus Grants (up to \$500, graduates and undergraduates)*

Meredith Clement: How Color can Influence the Foraging Dynamics of the Honey Bee, *Apis mellifera*. Dr. John Barthell, mentor.

Tiffany Cloud: Comparative Phylogeography of Two Species of *Peromyscus* in Oklahoma and Adjacent States. Dr. Gregory Wilson, mentor.

Michelle Gerlosky: Genetic Variation in a Northern Grasshopper Mouse Population (*Onychomys leucogaster*) from Southern Texas. Dr. Michelle Haynie, mentor

Eric Judd: Evaluating the Effectiveness of Three Ecological Niche Models in Predicting the Distribution of a Rare Plant Species. Dr. Chris Butler, mentor.

Erica Judd: Examining the Extent of the Hummingbird Hybridization in Oklahoma and Texas. Dr. Chris Butler, mentor

Craig Koenigs: Fleshy Fungi and their Association Arthropod Biota in Oklahoma. Dr. Clark Ovrebo, mentor.

Hui Hui Lee: Effect of Bitter Melon Leaf Extract mdr 1 Gene Expression and Function of P-gp Protein in Drug Resistant Colon Cancer Cells. Dr. Hari Shankar Kotturi, mentor.

Son Nguyen: Inferring Migratory Connectivity Using Multiple Stable Isotopes. Dr. Chris Butler, mentor.

Ethan Rowell: Evaluation of a *Neotoma micropus/Neotoma floridana* hybrid zone: Twenty years later. Dr. Michelle Haynie, mentor.

Emily Stine: Survey for *Angiostrongylus cantonensis* in Oklahoma rodents. Dr. Wayne Lord, mentor.

Jill Stinedurf: Do Yellow Rails (*Coturnicops noveboracensis*) Engage in Differential Migration? Dr. Chris Butler, mentor.

Eric Wheeler: Ecological Niche Model and Habitat Suitability for *Echinocereus reichenbachii*. Dr. Brooke Stabler, mentor.

Josh York: Influence of the Intensity of Sexual Selection on the Distribution of Male Reproductive Success in Collared Lizards. Dr. Troy Baird, mentor.

Student Clubs

Pre-Med Health Professions Club



The Pre-Med/Health Professions Club, winner of the 2008 Vice President's Outstanding Organization Award, exists to provide information to students regarding the various health-related professions. Through social interaction and volunteer service, we are able to benefit the applications of those members who are applying to competitive professional schools. Every 1st and 3rd Tuesday of the month, we bring to the UCO campus speakers such as: health care professionals, graduate students, and admissions experts. These speakers give students insight into their professions and help to inform students on admission requirements necessary for their respective graduate programs.

Throughout the year, we have numerous activities and events planned to better prepare students for professional school as well as set up a network of professionals for members to develop relationships with. Over the last year, the club participated in aiding numerous free clinics, UCO student involvement fairs, Habitat for Humanity, dinner preparation for the Ronald McDonald House, the American Cancer Society's Relay for Life, and many more events. In addition, this summer the club, with very generous financial support from UCO, was able to travel to Costa Rica to provide medical relief to the poorest community in the capital city of San Jose. After all, our goal is to provide great experience and allow individuals to develop the skills necessary to better serve our and other communities as future health care professionals.

Finally, thanks to the generosity of the OKC Kaplan Center, the club was able to provide our most active member with a free Kaplan test prep course! The recipient of last semester's Kaplan scholarship was Kally Kardokus. This upcoming year, the club is focusing on continuing to provide students with valuable opportunities while working to assess its performance to improve the wellness of our society and stimulate the interest in health science. The current officers are Curtis Behenna, Kyle Stafford, Makenzie Morrissey, Danny Samkutty, Chris Gasbarra, and Courtney Calbert.

Tri-Beta Biology Club and National Biological Honor Society



The Tri-Beta Biology club had another fun-filled year. The officers for the academic year 2009-2010 were: President- Kim Koppari, Vice President – Eric Sullivan, Treasurer – Henry Le, Secretary – Tiffany Cloud, Historian – Sarah Chukwuma, and Senator – Christian Mirabal.

Recruitment of new members was accomplished this year during UCO's annual Student Involvement Fair, an event that allows new students to learn about all the ways to become involved on campus. Meetings were held once a month during the Fall 2009 semester and twice a month during the Spring 2010 semester. A game night was held during the Fall 2009 semester in which a Connect4 tournament was played. Everyone in attendance had a wonderful time, a great break from studying. Tri-Beta volunteered at the Selman Living Lab during the spring semester, helping out where needed.

Members of Tri- Beta attended many meetings throughout the year including BioBlitz, Oklahoma Academy of Sciences Field & Technical Meetings, Oklahoma Research Day, Texas Society of Mammalogists, and American Associations of Anatomists. Tiffany Palmer was awarded a Travel award to the American Association of Anatomists meeting and at the meeting was recognized as an Undergraduate Poster Finalist. Kim Koppari was awarded First Place in Zoology at the Oklahoma Academy of Science Technical Meeting. The club should continue to grow in the upcoming year and has great plans for the upcoming academic year.



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

Poster Presentations

*Cloud, T.L., *Koppari, K.L., **Haynie, M.S.** and **Wilson, G.M.** Comparative phylogeography of two species of *Peromyscus* in Oklahoma, Arkansas, and Texas.

Oral Presentations

*Koppari, K.L., *Cloud, T.L., **Caire, W.**, Van Den Bussche, R.A. and **Wilson, G. M.** Population genetic structure of *Myotis velifer* as inferred by mitochondrial sequence data.



The 28th Annual College of Mathematics and Science Awards Banquet

Lothar Hornuff Field Biology Award

Stephen Hoge

Stephen is a graduate of Putnam City North High School and initially attended the University of Kansas in 2007 and 2008 to play football before transferring to UCO in 2009. He works as a research assistant with Dr. Troy Baird studying Eastern collard lizards. He hopes to attend medical school upon completion of his undergraduate degree.

Outstanding Biology Senior Student Award

Kim Koppari

Kim is a graduate of Edmond Memorial High School and received her B.S. in biology in May. She chose to major in biology because she loved science and biology her whole life. Kim served as president of the Tri-Beta Biology Club and Honor Society for two years and also served on the student senate. She worked in the research lab of Dr. Greg Wilson studying population genetics of bats at and near the Selman Living Lab. Eventually she plans to pursue graduate studies or professional school.

Ethel Derrick Zoology Award

Joshua York

Josh is a senior biology major at UCO and plans to graduate in the fall semester of 2010. He has been working in the research labs of Dr. Troy Baird and Dr. Michelle Haynie. He plans to remain at UCO to pursue a master's degree with Dr. Baird, and hopes to eventually obtain a Ph.D. in either molecular biology or genetics and work as a biomedical scientist.

Biology Education Senior Award

Joshua Terry

Josh graduated from Carl Albert High School in Midwest City and has coached football there for the last five years. He enjoys being around kids while trying to be a positive influence on their lives. Some of the most influential people in his life were teachers, and he hopes that he can have that same effect on students during his teaching career. He plans to stay in Oklahoma to teach and coach and eventually come back to UCO to earn a master's degree in education.

Academic Achievement Award

Taylor Fisher, Shifa Mathews, Susan Ondak

Taylor is a previous winner of the Ethel Derrick Zoology Award. He is a member of the Alpha Lambda Delta and Alpha Chi honor societies, has volunteered at various organizations, and received his B.S. in Biology in May. In August, he will begin medical school at the OU College of Medicine. Shifa graduated from Yukon High School in 2007. She earned her B.S. from UCO in May. She enjoys working with children, photography, movies, and spending time with family and friends. She has been accepted into the OU College of Medicine and will start there in the fall. Susan is a 2006 graduate of Deer Creek High School. She earned her B.S. in Biology from UCO in spring 2010, and achieved the rank of Class Marshal in her graduating class. She was

president of the Pre-Med and Health Professions club and will begin medical school at the OU College of Medicine in the fall. All of these students maintained 4.0 grade point averages throughout their undergraduate studies.

Outstanding Biology Graduate Student Award

Brian Stanila

Brian was born and raised in Edmond and graduated from Santa Fe High School. During his time at UCO he changed his major five times before settling on Biology and earning his B.S. in 2004. He completed the M.S. in Biology during fall 2009 under the supervision of Dr. Paul Stone. He is currently teaching in our department and also at OCCC. Brian is a previous winner of the Lothar Hornuff Award. Brian plans to eventually pursue a Ph.D. in ecology or conservation biology

Dr. Beverley Cox Endowed Scholarship

Erica C. Becker

Erica graduated from Edmond North High School in 2007 and enrolled in UCO that summer. She is currently doing research on the diet of Sonoran Mud Turtles with Dr. Paul Stone. She is a leader for Supplemental Instruction in Animal Biology with Dr. Chris Butler and this summer is assisting in the Summer Bridge Program. Her future plans are to attend OU and pursue the MD/Ph.D. degree.

Dr. Margaret W. Hamilton Endowed Scholarship

Jocelyn Bennett, Kelsey Lathrop

Jocelyn grew up in Las Vegas, Nevada, where she spent her youth hiking and observing the strange array of plants and animals in the desert mountains of the region. Jocelyn graduated from Edmond North High School. Her original major at UCO was Philosophy but she switched to Biology after enrolling in a Biology course in her freshman year. After she completes her B.S. she plans to earn an M.S. and Ph.D., specializing in plant physiology. Kelsey is a graduate of Yukon High School. She is a Biology major with an interest in Botany; she will also have a Chemistry minor. She plans to continue her education in botany, ecology, biochemistry or conservation, perhaps a little bit of each! She particularly enjoys spending time with her 18-month-old daughter.



Alumni

Alumni News

Alumna Kari Edge Bender, D.D.S. touched base with us to let us know that she's now practicing here in Edmond. Dr. Bender graduated from UCO in 2004 and then attended OU, earning her D.D.S. in 2008. The Forth & Bender Dental Arts Centre opened in Edmond in January 2010. They specialize in "Artistically creating magnificent smiles"!

We also heard from John E. Hubbard (B.S. in Biology and Chemistry, 1964). John went on to earn an MS in Biology at OU in 1969 and did extended graduate work at the University of Tulsa and

Princeton University. Afterwards, John taught high school for 10 years and then worked for Wallace Laboratories in Cranbury, NJ for 21 years. Prior to retirement in 2002, John taught at OKCCC.



Two of our alumni were back on campus for the annual Earth Day activities. Julie Chambers and Monty Porter, biologists working for the state of Oklahoma, are shown here at the Oklahoma Water Resources Board (OWRB) display. Julie earned her BS with us in 1998 and is the OWRB Quality Assurance Manager. Monty earned an MS with us in 2005 and is the Environmental Programs Specialist for that agency.

Vanessa Vasquez (B.S. 2003) recently completed her Ph.D. work at the University Of Texas Health Sciences Center Graduate School Of Biomedical Sciences.

UCO BIOLOGY DEPARTMENT DONATIONS 2009-2010

Donations to the Department of Biology since July 1, 2009- June 30, 2010:

Dr. Beverley Cox Endowed Scholarship for Biology, \$10,000.00
 Dr. Margaret Hamilton Endowed Scholarship for Botany, \$89,921.88

The College of Mathematics and Science is currently seeking gifts to our laboratory fund for an addition to Howell Hall to create a “wet” laboratory. We are in need of this facility to serve as a research and preservation lab for thousands of fluid specimens. The following are current donors to this project:

Dr. David and Donna Bass
 Dr. James Bidlack
 Dr. Robert Brennan, Jr.
 Dr. Gloria Caddell
 Dr. William Caire
 Sheryl Christofferson
 Dr. Janice Countaway
 Dr. Anne Ewing

Dr. Jenna Hellack
 Linda Luna
 Sherry Meeks
 Dr. Paul Olson
 Dr. Clark Overbo
 Dr. Brooke Stabler
 Dr. Paul Stone
 Dr. Sheila Strawn

Other donors to the Biology department:

Advanced Printing & Copies
 Dr. John Barthell, Dean
 Dr. Lori Beasley
 James Berry
 William S. Bivin
 Lorraine Bradshaw
 Beverley Cox
 Beverly Endicott
 Dr. David Hart
 Joyce Hearn

Dr. Jenna Hellack, Chair
 Dawn Holt
 John Hubbard
 Kopy Kat
 Lynda Loucks
 Perry Pendergraft
 Dr. Sheila Strawn
 Tackett Family Limited Partnership
 Lizabeth Thomas

Can you Help?

Growth of the Biology Department has been greatly facilitated by generous donations from our alumni over the years. As mentioned in the letter from the chair, we continue to grow. We've converted several storage areas into faculty offices, and have just finished converting one large office into several smaller ones. We have plans to build a new, small addition to Howell Hall to house some of the museum materials. The estimates for the new facility have come in, and they're higher than we expected. That's because special construction is needed for storage of combustibles, and many of the museum specimens are preserved in alcohol. The college has come up with some funds for us but we're still about two hundred thousand dollars short of what we need to complete the project. If you can help, please contact Dr. Hellack or Melody Hansen at (405) 974-3782 or mhansen5@uco.edu.

CONGRATULATIONS

To the following UCO Students, who have been accepted to these professional programs for the Fall Semester, 2010.

OU – College of Medicine

Bishop, David
Fisher, Taylor
Gardner, Adam
Jenkins, Morgan
Johnson, Keith
Mohamed, Abdiwahab
Mathews, Shifa
Ondak, Susan
Pakzad, Nima
Scott, Jessica

OSU – College of Osteopathic Medicine

Baker, Brody (DO/MBA)
Bishop, David
Gardner, Adam
Loveridge, Kristian
Mohamed, Abdiwahab I.
Owens, Ross
Palmer, Tiffany
Pham, Diep
Scott, Jessica
Wilson, Charles

OU – College of Dentistry

Gates, Bryce
Gibson, Kellie
Luttrell, Gabe
McRae, Malori
Mills, Krystal
Murray, Kevin

OU – Dental Hygiene Program

Brown, Nicole

OU – College of Pharmacy

Dolase, Stefanie
Harrison, Kiya
Langley, Lonnie
Leitch, Jenifer
Lou, Jessica
Miranov, Stefan
Oakes, Joshua
Rathgeber, Elizabeth

OU – Physician Assistant's Program

Green, Katrin
Hammond, Joy
McCaughey, Angela
Petersen, Katie
Williams, Chad
Wilson, Kallie

SWOSU – College of Pharmacy

Russell, Joshua
Thomas, Chinnu

OSU – College of Veterinary Medicine

Rogers, Katie

Parker College of Chiropractic Medicine

Martin, Jessica

Rocky Vista College of Osteopathic Medicine

Gardner, Adam
Loveridge, Kristian

U. Iowa College of Dentistry

Murray, Kevin

St. Francis Hospital Medical Technology Program

Floyd, Kelly

Comanche County Hospital Medical Technology Program

Anyah, Anwuli
Ngo, Suella

Wichita State PA Program

Williams, Chad

Harding U. PA Program

Williams, Chad

OCU Accel. BSN

Oden, Phil

KCUMB College of Osteopathic Medicine

Johnson, Keith

UT San Antonio College of Dentistry

Gates, Bryce

UT Houston College of Dentistry

Gates, Bryce

NYU College of Dentistry

Luttrell, Gabe

University of Kansas – College of Medicine

Johnson, Keith

A.T. Still – College of Osteopathic Medicine

Loveridge, Kristian

Lake Erie – College of Osteopathic Medicine

Hawkins, Megan

Des Moines University – PA Program

Gentry (Davis), Erica