

The Alumnidae

Fall 2011

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Scientists with OSU Zoology and Comanche Nation College collaborate on million dollar grant

Researchers from the Department of Zoology (OSU) and the Comanche Nation College (CNC) have teamed up to help increase the number of Native Americans who pursue graduate degrees in the Biological Sciences. The \$1,000,000 collaborative grant, funded by the National Science Foundation URM (Undergraduate Research and Mentoring in the Biological Sciences), provides funds to promote professional development activities and research experiences for students at CNC and OSU. The program will be implemented over the next five years by Kristen Baum (Department of Zoology, OSU) and Gene Pekah (CNC), the lead investigators, along with co-investigators Donald French (Department of Zoology, OSU) and Consuelo Lopez (President, CNC). The program includes year-round financial support for students to actively participate in research with a faculty mentor as well as opportunities to participate in activities designed to increase awareness of career options, promote interactions between students and professionals, assist students with the graduate school application process, and help students develop strategies for success. Student research projects will focus on topics in the area of ecology and environmental stress, such as the effects of biological and environmental stressors (e.g., chemicals, climatic extremes, landscape modifications, management strategies, etc.) on organisms, populations, communities, and ecosystems.

Greetings from the Department Head

I hope this fall newsletter finds you all well after that brutal summer. As you will see in this edition there have been a number of important changes in the department over the past six months. I will highlight just a few of those here as well as some accomplishments that have not been mentioned in specific newsletter articles. Perhaps one of the most significant Zoology achievements is our enrollment. Zoology is now the largest department out of the 24 departments in the College of Arts and Sciences. We have 643 undergraduates spread across our three majors; Zoology, Physiology, and Biological Sciences. We also have 59 graduate students. The faculty continues to bring in numerous competitive research grants with over \$1.5 million in this past quarter alone. When you consider Zoology has that many students and that much grant money with 18 faculty members, the faculty's accomplishments become even more notable. The new Zoology Field Building is open for business and we have a new estate endowment established for the Collection of Vertebrates. The Zoology staff continues to excel, with Karen Smith, the Zoology undergraduate advisor, receiving an outstanding staff award from the College. We also would like to introduce our new financial staff person, Sherry Bolene, joining Gertie and Marsha in the main office. Please come by and see us in Life Sciences West any time you get a chance.

Recent gifts to the Department of Zoology

Dr. Daniel Dennehy increases estate gift

In 2010, Dr. Daniel Dennehy made an estate gift valued at over \$600,000 to the Department of Zoology. Recently Dr. Dennehy added over \$100,000 to the gift. These funds along with the original gift will be used to retain and recruit the best faculty in the fields of zoology and physiology at OSU. Dr. Dennehy graduated from OSU in 1972 with a Bachelor of Science degree in Zoology/premed. He attended the University of Oklahoma School of Medicine, Oklahoma City and graduated in 1976. He served as a U. S. Army physician on active duty from 1976-1979 and then completed a residency in Radiology in 1983. He was in private practice at St. John Medical Center in Tulsa until 2001. He now serves as an Associate Clinical Professor at OU Medical School-Tulsa.

Collection of Vertebrates receives endowment

The 'W.L. "Mike" and Lois Jean Cockrell Collection of Vertebrates Endowment Fund' was just established. The endowment of \$100,000 will be funded through the donor's will/trust. After the funds are received, this will permit an annual operating budget of approximately \$5,000 for the "care, maintenance and research activities required to support the Collection of Vertebrates".

New field biology building ready for use



Researchers in the Department of Zoology are now using the recently constructed field building (shown above) at the department's Lake Carl Blackwell property. The facility not only allows storage and preparation of field research equipment, but the compound provides secure sites for field experimentation and vehicle storage. The 6000 square foot building has 18 bays each assigned to an individual Zoology faculty member for their research equipment. In addition, the long central hallway between the bays can be used to set up field experiments and to construct experimental field materials. Funds were provided by the office of the OSU Vice President for Research and Technology Transfer and the remainder was matched with private funds.

Zoology and Entomology members team up to study the spread of exotic insect

Drs. Monica Papes (Zoology) and Tom Royer (Entomology) recently received a \$114,000 grant from the U.S. Department of Agriculture to study a new exotic insect pest. The insect, called the Bagrada bug, was first recorded in 2008 in southern California and is known to infest cabbage and other plant crops. Little is known about this insect's potential distribution or spread in the United States. Lack of such information makes control of the pest very difficult. Papes and Royer will employ Geographic Information Systems (GIS) and ecological modeling to produce the first assessment of the distribution potential of the Bagrada bug in the United States. The researchers will also investigate risk of infestation by overlaying the predicted distribution of the insect with a crop map for the United States to locate risk of infestation of crop plants. Information generated from this collaboration will be used regionally, in the Great Plains, to create activities such as workshops involving county extension staff and documentation that will be available on the Oklahoma Cooperative Extension Service website. Through activities such as these the researchers hope to raise awareness about this emerging pest.



NSF funds project to study the evolution of fish in extreme environments

Dr. Michael Tobler (center) in the OSU Zoology department was recently awarded a \$481,000 grant from the National Science Foundation to study the evolution of fishes in extreme environments. Hydrogen sulfide is a highly toxic gas that is lethal for most animals, even at low concentrations. In southern Mexico, small livebearing fish have independently colonized multiple sulfidic springs, where hydrogen sulfide naturally occurs in high concentrations. These fish provide an opportunity to study how vertebrates have managed to survive in conditions that are lethal for most other organisms. Adaptation in sulfide springs also leads to reproductive isolation between sulfidic and non-sulfidic ecotypes, providing insights about how new species evolve. Understanding how an organism responds to naturally occurring stressful environments can ultimately be used to better understand causes and consequences of organismal responses to human altered environments. The project fosters collaboration in research and education between scientists and students from the United States and Mexico. The project also establishes a public outreach platform for fish biologists to interact with fish hobbyist organizations as a means to disseminate research findings to the lay public.



Undergraduate accolades

Niblack Scholars Program

The Niblack Research Scholars Program, made possible by the generosity of Dr. John Niblack, was developed to give outstanding students an appreciation of scientific research in a laboratory environment at an early stage of their academic careers. Research experience is invaluable in helping the students choose a career path for themselves, in improving their likelihood of success in the workforce, and in helping the students decide if graduate school is the correct choice for them. The Niblack Research Scholars Program provides support to Oklahoma State University undergraduates to conduct research in one of OSU's research laboratories under the general guidance of a member of the research faculty and with day-to-day mentoring by a graduate student. Each Niblack Research Scholar receives a stipend of \$2,000 per semester for the academic year, plus \$4,000 for two summer months (\$8,000 total). The award winners must commit to working in a laboratory for the two semesters and the two summer months.

Four of the Zoology Department's undergraduates received this prestigious award for the 2011-2012 academic year. Benjamin DeWeese, Zoology junior, is a research assistant with Dr. Barney Luttbeg (Zoology). Chelsea Fortenberry, Biological Science and Chemistry junior, is an investigator in the lab of Dr. Richard Bunce (Chemistry). Brandi Gallaher, Physiology & Spanish junior, works with Dr. Edward Shaw (Microbiology). Grant Tinsley, Physiology and Nutritional Sciences senior, will conduct research with Dr. Stephen Clark (Nutritional Sciences).

Fall 2011 Seniors of Significance

The OSU Seniors of Significance Award recognizes graduating seniors who have excelled in scholarship, leadership and service to campus and community and have brought distinction to Oklahoma State University. In the spring semester these honorees will be able to update their credentials and interview for selection as one of OSU's Outstanding Seniors. This fall the 40 students selected represent all six OSU undergraduate colleges and hail from eight states. A public reception to recognize the winners and their families was held on 17 November 2011 at the ConocoPhillips OSU Alumni Center, and two students from Zoology were honored. Courtney Skaer, Biological Science & Spanish double degree candidate from Wichita, Kansas, plans to attend medical school following her graduation. Michelle Tedder, a Physiology major from Stillwater, Oklahoma, will be pursuing a career as a Physician's Associate.

Mark your calendars:

The 2012 Zoology Awards Banquet will be held on 31 March 2012, 6 to 9 pm. The venue is once again in Murray Hall. We will send out additional information as the date approaches. Hope to see you there.

Doctoral candidate awarded NESCent fellowship

Doctoral Candidate, Anna Hiatt, has been awarded a Graduate Fellowship to the National Evolutionary Synthesis Center (NESCent) for her proposed project “Evaluation of the Validity and Reliability of the Evo-Devo Concept Inventory.” As a part of the fellowship Anna will spend several weeks of the upcoming spring semester at NESCent in Durham, NC, to work on the proposed project which encompasses the final stages of her dissertation research building an Evo-Devo Concept Inventory. Anna’s proposal was judged based on NESCent’s scientific mission to advance research that addresses fundamental questions in evolutionary science by integrating methods, concepts, and data within and across disciplines. Anna’s time at NESCent will be spent working on her proposed project and helping to develop other concept inventories and providing tools for educators to use to improve evolutionary understanding through the Evo CI Toolkit Working Group. The Working Group is currently developing concept inventories on evo-devo, population thinking, and random processes in evolutionary biology. Concept Inventories are diagnostic tests composed of multiple choice questions with responses made up of correct statements and incorrect statements based on common misconceptions that students have and are used to measure a student’s understanding of a particular subject. In addition to working with other evolutionary biologists and evolution education researchers in the Working Group, the fellowship also provides her with an opportunity to meet with prestigious visiting scholars who conduct synthetic research in the evolutionary sciences. NESCent is jointly operated by Duke University, The University of North Carolina at Chapel Hill, and North Carolina State University, and is sponsored by the National Science Foundation. Anna’s project will be advised by her major professor, Dr. Donald French, and NESCent mentor, Dr. Kathryn Perez of the University of Wisconsin-La Crosse.



Faculty and Staff Awards - College of Arts and Sciences Fall Convocation

On 18 October the College of Arts and Sciences at Oklahoma State University recognized outstanding staff and faculty members at its fall convocation. The Junior Faculty Award for Scholarly Excellence was awarded to 2 professors at OSU. Kristen Baum, Associate Professor in Zoology, received the Scholarly Excellence Award in the natural sciences. Dr. Baum has been at OSU since 2005. Her research interests include conservation biology, invertebrate ecology, and landscape ecology. Also honored was Karen Smith, Zoology’s Senior Academic Advisor, who received one of the three staff awards. Karen joined the Zoology staff in 2010.

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Keep in Touch and Help Us Grow Stronger

We hope you enjoy *The Alumnidae*, and we hope to hear from you about future issues. To be sure that you continue to receive the newsletter, please update address and email information with the OSU Alumni Association at:

<http://www.orangeconnection.org>

If you have comments, questions, or contributions for *The Alumnidae* send them directly to meredith.hamilton@okstate.edu

YES! I want to support the ZOOLOGY DEPARTMENT at Oklahoma State University!

1. DESIGNATION

- Zoology Excellence Fund (223750)
- Wilhm Teaching Assistant Award (228230)
- Scholarship for Zoology Students (224550)
- Burks Student Award (223590)
- Dr. Michael Steelman Scholarship (229830)
- Bryan P. Glass Scholarships (223750)
- Chappabitty Scholarship (228855)
- Collection of Vertebrates
- Other _____

2. AMOUNT _____

3. OPTIONS

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