

# BIOLOGY ALUMNI NEWSLETTER

JUNE 2010

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## BIOLOGY DEPARTMENT NEWS

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Charles Darwin:

*"Doing what little one can to increase the general stock of knowledge is as respectable an object of life, as one can in any likelihood pursue."*



### Biology Department 2010

The mission of the Muskingum University Biology Department is still to nurture curiosity about life inherent in the human spirit and prepare individuals for a broad range of careers. The department is strongly associated with interdisciplinary programs in conservation science, environmental science, molecular biology, and neuroscience. In addition, the department is fortunate to be affiliated with The Wilds, a 9,500 acre wildlife preserve only 18 miles south of New Concord, which affords students the chance to pursue unique field research.

Our biology majors have participated in research at Oak Ridge National Laboratories, Tennessee; the U.S. Army Physical Therapy Trainee Program in Hawaii; Ohio Environmental Protection Agency; Savannah River Plant; Jackson Memorial Laboratory at Bar Harbor Maine; The Marine Biological Laboratory at Woods Hole, Massachusetts; National Institutes of Health at Washington, D.C.; and Mayo Clinic at Rochester, Minnesota.

Recent graduates in biology have entered medical/dental schools at The Ohio State University, Medical College of Ohio in Toledo, The University of Pittsburgh, University of Cincinnati, Case Western Reserve, Hahnemann Medical College of Philadelphia, Meharry Medical College, and West Virginia University, plus an impressive list of physical therapy programs.



Biology faculty: (left to right) Brian Bergstrom, Stephanie Allen, Amy Santas, Jim Dooley, Shelley Amstutz-Szalay, Danny Ingold, and Toyin Osunsanya.

### BIOLOGY NEWS BITS:

- The Biology Department is the proud owner of a new autoclave.
- Becky Coulter retired from her position as Lab Manager.
- The Biology Department welcomed Deb Van Horn as the new Lab Manager.

### Biology Majors in the News...

Dough McClain, senior, is working this summer at the Rocky Mountain Biological Laboratory in Colorado. He is studying bird vocalizations under a professor from UCLA.

Jeff Storz, Tommy Mallot, and Jeremy Whitson are summer Muskie Fellows assisting Jim Dooley and Danny Ingold in studying the reproductive biology of grassland birds on a reclaimed surface mine.



## ALUMNI NEWS AND UPDATES

**Jan Bishop, 1965**

Jan resides on Skidaway Island, Savannah, Georgia. She has become involved with the Coastal Conservation Association (CCA) this year. The CCA maintains and balances the 151 lagoons at the Landings, stocking them with fish for avid anglers and keeping the kinds of fish, plants and algae in balance. Jan has participated in electrifying fish to count, weigh and measure in 30 lagoons. In May, she went fish seining to determine the number of young fry in each of the 30 lagoons. The CCA also provides critter clinics for kids and adults (snakes, turtle, alligators) and fishing classes for anglers. The CCA employs a biologist full time who uses the results of the surveys to stock and remove fish and algae periodically.

**Carol Smoyer, 1971**

Last summer, Carol and her husband hiked the Inca Trail in Peru to Machi Picchu. It was an amazing four day hike with camping overnight for three nights in the Andes.

**Mary Jo Cherup, 1988**

Currently a lab technician for Select Sires in their International Division, Mary Jo evaluates and processes bull semen that is then shipped to customers all over the world. (A very interesting and precise process).

**Susan Meyer, 1995**

In 2007, Susan Meyer changed careers and began working in Clinical Research at The Research Institute at Nationwide Children's Hospital in Columbus, Ohio. She was promoted this year to Clinical Research Project Manager.

**Ryan Burrier, 2001**

Ryan is finishing his ninth year in the Indian Valley School District. He currently teaches Biology and Environmental Sciences. Ryan is also finishing his master's degree at Muskingum for administration. Ryan's family is no longer expanding, but they are quickly getting older. He has three boys: a 5 1/2, 4, and 2. Ryan is also coaching his oldest son's T-Ball team. Ryan and his wife (Muskingum, 2001) will be celebrating their ninth anniversary in Hocking Hills with a bed and breakfast, relaxation, and some site seeing. They would like to hear from other alums. (rburrier@aol.com)

**Marcie Palm, 2003**

Marcie is currently working as a Naturalist at Kiawah Island Golf Resort in South Carolina and got to help with a research project with Davidson College Herpetology Center. The research is related to the decline of diamondback terrapins and it has been going on for 27 years.

<http://bit.ly/azMWUj>

Marcie did turtle research at Muskingum, so this is a great opportunity for her. There are also over 500 alligators on the Island of Kiawah. Marcie has her master's degree in Environmental Education and a teaching credential.

**Sarah McBeth, 2004**

Sarah has graduated from Wright State this year with an MD, MPH. In June, she begins her residency in the Global Health track of the Internal Medicine program at the University of Pittsburgh Medical Center.

**Andrew Newburn, 2004**

Andrew is finishing up his last year of pediatric residency at Akron Children's Hospital. He hopes to join a practice near his hometown of New Philadelphia, Ohio in June 2011.

**Amy Iler McKinney, 2005**

Amy has completed her Ph.D. in Ecology and has taken a Post-Doctoral Position at the Rocky Mountain Biology Lab in Gothic, Colorado.

**Deirdre Newburn (Cummings), 2005**

Deirdre has completed her first year of the Occupational Therapy Master's Program at Cleveland State University.

**Sarah Oleksak, 2005**

Sarah is working for the US Department of Energy in the Office of Energy Efficiency and Renewable Energy as an Energy Project Specialist.



**"There is one thing even more vital to science than intelligent methods; and that is, the sincere desire to find out the truth, whatever it may be."**

**- Charles Pierce**



## ALUMNI NEWS AND UPDATES

**Bryan Voelker, 2005**

On May 14, 2010, Bryan graduated from the University of California, Berkeley as a Master of Science in Range Management. His work and degree not only deal with the management of rangelands, but includes general natural resource management. Bryan is currently working on publishing research from his time at Berkeley and also applying for term or career jobs.

**Adam Cirone, 2008**

Adam will attend Ohio University starting in fall 2010 to begin studies for a Master of Science.

**John Treasure, 2008**

John is applying for acceptance into the Master's Degree program at the University of Montana, Department of fisheries.

**Ashley Anderson, 2009**

Ashley Anne Anderson graduated from Muskingum University continuing a three generation family legacy.

**Jessica Turner, 2009**

Jessica is working in an ecology lab within the University of Maryland this summer with Dr. Bill Fagan doing research on ESA mammals and birds.

## MORE BIOLOGY DEPARTMENT NEWS

**Biology Department Students Participate in Undergraduate Research and Science Week**

Eight Biology Department students presented their research findings at a Poster Session as a part of the annual Undergraduate Research and Scholarship Week which is held every spring.

Each student presented their research in the form of a poster, and those presentations were then judged on a variety of criteria.

**THE PRESENCE OF *BAYLISASCARIS PRODYONIS* (RACCOON ROUNDWORM) IN SOUTHEASTERN OHIO**  
**Kelley Crater and Shelley Amstutz-Szalay****A STUDY ON THE VIABILITY OF SEMEN COLLECTED FROM WILD SNAKES TO FURTHER THE CONSERVATION EFFORT OF THREATENED AND ENDANGERED SPECIES**

**Erin Lycans, Dr. Barbara Wolfe, and Dr. Danny Ingold**

**RELATIONSHIP BETWEEN BODY MASS INDEX AND ANKLE INJURY**

**Erick Nesbit**

**WHITE-TAILED DEER (*ODOCOILEUS VIRGINIANUS*) POPULATION SIZE ESTIMATION AMONG HABITATS AT THE WILDS.**

**Ben Skelley and Dr. Jim Dooley**

**AN ETHOGRAM OF DHOLES (*CUON ALPINUS*) IN LARGE ENCLOSURES AT THE WILDS**

**Trace Watts, Dr. Danny Ingold, and Dan Beetem**

**VEGETATION ANALYSIS OF THE IMPACT OF WILDLIFE GRAZING ON PASTURES AT THE WILDS**

**Jessica A. Lade (Conservation Science)**

**NEUROPROTECTIVE EFFECTS OF MINOCYCLINE AND MELATONIN: A POSSIBLE PUTATIVE TREATMENT FOR PARKINSON'S DISEASE**

**David Shahbodaghi, Kristen Fuller, and Dr. Brian P. Bergstrom (Neuroscience)**

**KINETIC AND STABILITY STUDIES OF WILD-TYPE AND MUTANT ADENYLATE KINASE FROM GRAM POSITIVE AND GRAM NEGATIVE BACTERIA**

**Troy Gessner and Trevor Lutz (Molecular Biology)**

**"The important thing in science is not so much to obtain new facts as to discover new ways of thinking about them."**

**-Sir William Bragg**

**Biology Department Students Were Poster Session Winners at Muskingum!****1st Place:**

Troy Gessner and Trevor Lutz

**3rd Place:**

Erin Lycans

**3rd Place (tie)**

Erki Nesbit

**Honorable Mention:**

David Shahbodaghi

(Funded by the Carolyn and Glenn Hodges Student Research and Awards Fund)

**Dr. Toyin Osunsanya's Sabbatical Research**

Dr. Osunsanya first worked on the writing of a previous bacterial identification research. She then worked in the laboratory performing experiments on the effects of carvacrol, thymol, and p-cymene on the Gram-positive food pathogen, *Bacillus cereus*, one of the important causes of gastrointestinal illnesses. Carvacrol (a methylated phenol), thymol (an isomer of carvacrol) are antibacterial components of the essential oils of the herbs oregano and thyme. P-cymene which lacks a hydroxyl group is a precursor of carvacrol and thymol. The objectives of this research were to determine some of the targets in bacteria that are affected by these essential oil components. Dr. Osunsanya investigated the effects of carvacrol, thymol, and p-cymene on stress proteins, fatty acid composition, enzymatic activity, and viability.

**BIOLOGY FACULTY**

Faculty	Research Interests
<b>Stephanie Allen,</b> Assistant Professor of Biology	The Ohio State University, Columbus, OH Ph.D in Biochemistry  “Therapeutic Peptidomimetic Strategies for Costimulation Blockade in Multiple Sclerosis and Transplantation & Conformational Peptide Vaccines of the HER-2/ <i>neu</i> Dimerization Loop are Effective in Inhibiting Mammary Tumor Growth <i>in vivo</i> ”
<b>Shelley Amstutz-Szalay,</b> Instructor of Biology	Research interests include epidemiology of zoonotic diseases (transmitted from animals to humans). Recent projects have included a study aimed at evaluating the presence of hepatitis E virus in an Ohio swine population and whether disease rates are affected by the presence of wild boars. Also has studied the relationship between body size, muscle strength, and athletic injury.
<b>James Dooley,</b> Associate Professor of Biology and Director of Conservation Science	Habitat alteration on the biodiversity, demography, and persistence of animal and plant populations. Also interested in more in-depth assessments of population demography, habitat association, community ecology and autecology.
<b>Danny Ingold,</b> Professor of Biology	Ecology and natural history of grassland birds, as well as cavity-nesting birds. Also supervises students interested in natural history, oriented studies on vertebrates as well as invertebrates.
<b>Toyin Osunsanya,</b> Associate Professor of Biology	Interested in the area of applied microbiology. Focus has been on the identification of culturable soil bacteria from a reclaimed surfaced mine site. Also interested in characterizing the effects of the major antibacterial components of essential oils on the food pathogen, <i>Bacillus cereus</i> .
<b>Amy Santas,</b> Assistant Professor of Biology	Research focuses on the events that occur in response to a cut or wound. Current projects involve a group of proteins that disappear after a wound occurs. Projects include identifying the molecular components of this group of proteins, developing new tools to study them, and studying wounding in a controlled environment.



**Jim Dooley, Nicole Cavender (The Wilds), and Danny Ingold** published the following: Ingold, D.J., J.L. Dooley and N. Cavender. 2010. Nest-site fidelity in grassland birds on mowed vs. unmowed areas on a reclaimed stripmine. *Northeastern Naturalist* 17:125-134

**Toyin Osunsanya** studied the effect of various agents on *Bacillus cereus*, a major cause of gastrointestinal illnesses.

**Amy Santas**, enrolled in an advanced gross anatomy course at the University of Wisconsin in order to enhance materials and strategies used in anatomy classes at Muskingum.

**Stephanie Allen** will purchase equipment and reagents to study the development of non-melanoma skin cancer.

**Shelley Amstutz-Szalay** will study Chagas disease among the Hispanic population of Appalachia.



**Ohio Academy of Science**

**Danny Ingold, Jim Dooley, and four seniors** made the annual trip to **Ohio Academy of Sciences**. Two great oral presentation were made along with two fine looking posters.

**Ohio Natural History Conference**

On February 20 **Danny Ingold and four students** attended the annual meeting of the **Ohio Biological Survey & Ohio Division of Wildlife (The Ohio Natural History Conference)**. Two students presented a research poster on nesting grassland birds and Danny gave a talk on winter birds of prey at the Wilds.



**It's a boy!!**



**Amy Santas** and her husband, **Philipp Mueller**, announce the

birth of their son, **Bennett Mueller**, born June 12, 2010 and weighing 7 pounds 13 ounces.

Congratulations Amy and Philip!