Biology Department Students Participate in Undergraduate Research and Science Week

Eleven 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.

- EVALUATING IMPACTS OF VERNAL POOLS ON THE ABUNDANCE AND DIVERSITY OF AMPHIBIAN SPECIES ON A RECLAIMED SURFACE MINE
  - Julie M. Long and Danny J. Ingold

- ACUTE PHENYLALANINE ADMINISTRATION SUPPRESSES EXTRACELLULAR DOPAMINE VIA RELEASE MEDIATED MECHANISMS
  - Tereza Tomankova and Dr. Brian Bergstrom

- A POPULATION ESTIMATION OF WHITE TAILED DEER (ODOCOILEUS VIRGINIANUS) AT THE WILDS USING THE SIGHT DISTANCE METHOD
  - Thomas D. Heider, James L. Dooley, Dan Beetam, and Curt Coleman

- A STUDY OF THE EFFECTS OF RIPARIAN VEGETATION AND SHADING ON STREAM FISH ABUNDANCE, BIODIVERSITY, AND DISSOLVED OXYGEN CONTENT
  - Jeffery M. Sharratt, Co-Authors: James L. Dooley, Caitlyn Byrne, Jessica Spencer, and Shana Byrd

- A WATER QUALITY ASSESSMENT OF WHITE EYES CREEK AND SALT CREEK USING MACRO-INVERTEBRATES AND WATER CHEMISTRY
  - Michael Finch

- THE EFFECTS OF SURFACE MINING ON CREEK WATER QUALITY, A FISH SPECIES COMPARISON
  - Ethan Riehl

- IMPROVEMENT OF REVERSE TRANSCRIPTION EFFICIENCY OF BCR-ABL FUSION TRANSCRIPT WITH GENE-SPECIFIC PRIMING
  - Jessica Warns

- CONSTRUCTION OF THE 135 AND 155 PENTA MUTANTS OF BACILLUS SUBTILIS ADENYLATE KINASE
  - Jendy Weppler and Nick Callahan

- SYNTHESIZING BORRELIA BURGDORFERI BMTA ANTIBODIES FOR LYME DISEASE RESEARCH
  - Jeremy Whitson

- TISSUE CONTENT ANALYSIS OF GABA IN A RAT MODEL OF HUNTINGTON'S DISEASE
  - Jennifer Greenwood and Brian Bergstrom

- ACUTE STRESS INFLUENCES WORKING MEMORY VIA CORTISOL CONCENTRATIONS
  - Krista Martin

Read all the abstracts....
Robert Douglass, 1986
Robert is a supply chain consultant working for Johnson & Johnson Consumer Products, Princeton, New Jersey. He is married to his wife, Lorraine, and has two daughters, Nicole and Robyn. Robert also has three grandchildren—Mackenzie, Tommy, and Katie.

Linda (Brown) Mosser, 1988
Linda is a secondary science teacher specialist (grades 6—12) for Frederick County Public Schools, Frederick, Maryland.

Kim Prindle, 1988
Kim currently teaches chemistry and physics at Bishop High School in Zanesville, Ohio. Prior to this position she had taught grades 4-8 science at a private independent school in Canton Country Day School.

After graduating from Muskingum, Kim attended Ohio Wesleyan to obtain her 7-12 teaching certificate. She became certified in biological sciences, general science, and also obtained her comprehensive certification as well as her non-tax certificate.

Tamara Sands, 1994
Tamara is currently a Project Manager at Cornerstone Environmental Group, LLC. She was previously an Environmental Specialist at Republic Services of Ohio II, LLC.

Carrie Aultz Tolman, 1995
Carrie has a baby boy, Jackson Connor, on December 3, 2012. Big brother JD is three. She is still working at the Center for Healthy Weight and Nutrition at Nationwide Children’s in Columbus as a pediatric nurse practitioner.

Misty Smith, 1996
After Muskingum, Misty did her thesis research in the Department of Pharmacology and graduated with honors from the University of South Carolina School of Medicine in Columbia, South Carolina in 2001 with a Ph.D. in Biomedical Science. She has been a member of the faculty in the Department of Pharmacology and Toxicology at the University of Utah since 2012.

Misty was awarded the 2013 Distinguished Doctoral Alumni Award by the University of South Carolina School of Medicine’s Alumni Association. Go to http://alumni.med.sc.edu/achievement.awards.asp to see more.

Jessica Gordon, 2003
Jessica was a B.S. Business and Biology major with a minor in economics. She earned her Master of Health Services Administration in 2005 from Xavier University and completed an Administrative Residency at Clinton Memorial Hospital in Wilmington, Ohio. Jessica continued to work for CMH through 2009 as their Performance Improvement Facilitator. The role worked with quality improvement, auditing, monitoring, etc., including regulatory preparedness and team/group facilitation.

Jessica married Blaze Bishop, a Muskie alum, in 2007. Since 2009, Jessica has been living in Springfield, Ohio, and working for Community Mercy Health Partnership (Springfield Regional Medical Center and Mercy Memorial Hospital). She is their Accreditation Manager and prepares the system for surveys from Centers for Medicare Services, Ohio Department of Health, The Joint Commission, OSHA, EPA, etc. In 2011, Jessica earned the Certified Joint Commission Professional (CJCP) designation. For the CJCP she is the only one in Ohio aside from the folks employed by Joint Commission Resources. Jessica would be happy to talk with any biology majors to offer them guidance.

Jessica says, “My education at Muskingum College was top-notch. 10x more challenging and applicable daily than my Master’s education. I owe a debt of gratitude to the professors, staff, and classmates during those years for preparing me well for the real-world and helping me to build some great memories.

Jewel Songo, 2008
Jewel has been in the U.S. Army Medical Reserve as a commissioned officer for three year. He has been accepted into The University of Toledo’s Physician Assistant Program.

Jon Grennell, 2008
Jon has started a graduate program at Ohio University.

Tommy Heider, 2013
Tommy has accepted a position with the Cleveland Museum of Natural History.
Karah Harvey, 2003
Karah has recently finished her fellowship in child and adolescent psychiatry and will be starting a job at Nationwide Children’s Hospital in Columbus, Ohio, as a consultant liaison child and adolescent psychiatrist. She and her husband welcomed their son, Rylan, last March.

Kim (Preest) Moore, 2004
Kim married Bruce Moore on March 20, 2012. She was also promoted last year at Cardinal Health, Inc. to Environment Health and Safety Manager.

Sarah Olexsak, 2005
Biology Alumni, Sarah Olexsak (2005), recently took part in a “Minute with a Muskie” interview featured on the Muskingum website:

Sarah, Olexsak, ’05, of Butler, PA, graduated Muskingum University with a B.S. in biology and a sociology minor. Olexsak chose Muskingum because of good experiences during her campus visits, as well as the chance to conduct research at The Wilds, which she did during her senior year.

After graduating, Olexsak realized that “my true interest in science lies not under the microscope but rather in applied science.” Now a resident of Washington, D.C., Olexsak has been involved in “initiatives to bridge the gap between research and development and the real-world deployment of renewable and efficient energy technologies.”

Now employed by the U.S. Department of Energy’s Office of Energy Efficiency and Renewable Energy, Olexsak has been working on programs to help build our country’s advanced energy manufacturing capacity.

In 2012, Olexsak began “working on the plug-in electric vehicle deployment efforts of President Obama’s EV Everywhere Grand Challenge.” In early February, the launch of Olexsak’s latest endeavor, the Workplace Charging Challenge, was announced. The goal is to increase employee access to electric vehicle charging stations at workplaces around the country.

While working, Olexsak completed a Master’s Degree in Energy Policy and Climate from Johns Hopkins University.

Olexsak spoke highly of her experiences at Muskingum, citing both her in- and out-of-classroom experiences as formational. While on campus, she was Vice President of her sorority, Chi Alpha Nu, and served in other leadership roles within the Greek community. “I developed management skills that have certainly aided in my ability to assume leadership roles in my career,” she explained.

Olexsak was even able to use an alumna connection from her sorority to help her find her footing upon moving to D.C.

Adam Cirone, 2007
Adam has recently complete his Master of Arts in Teaching degree in Adolescent and Young Adult Life Sciences at Muskingum University (2013).

Summer Muskie Fellows: Biology
Ryan Burke ‘14 and Andy Piper ‘14 will study point counts and nest detection of grassland shrub-nesting birds at The Wilds with Dr. Jim Dooley, the Bill and Martha Lovejoy Distinguished Professor of Biology, and Dr. Danny Ingold, the Homer A. Anderson Distinguished Professor in the Natural Sciences.

Sarah Francino ‘16 will continue a study of a more blight resistant hybrid of chestnut trees at a reclaimed surface coal mine with Associate Professor of Biology, Dr. Amy Santas.
### More Biology Department News

#### Biology Faculty

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<th>Faculty</th>
<th>Research Interests</th>
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<td><strong>Stephanie Allen</strong></td>
<td>The Ohio State University, Columbus, OH  Ph.D in Biochemistry  “Therapeutic Peptidomimetic Strategies for Costimulation Blockade in Multiple Sclerosis and Transplantation &amp; Conformational Peptide Vaccines of the HER-2/neu Dimerization Loop are Effective in Inhibiting Mammary Tumor Growth in vivo”</td>
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<td><strong>Shelley Amstutz-Szalay</strong></td>
<td>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.</td>
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<td><strong>Brian Bergstrom</strong></td>
<td>Studies neurochemical changes in synaptic function of dopamine neurons in response to neurodegenerative disease (Parkinson’s Disease), drugs of abuse, and pharmacological regulation.</td>
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<td><strong>James Dooley</strong></td>
<td>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.</td>
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<td><strong>Danny Ingold</strong></td>
<td>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.</td>
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<td><strong>Toyin Osunsanya</strong></td>
<td>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, Bacillus cereus.</td>
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<td><strong>Amy Santas</strong></td>
<td>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.</td>
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Aerodynamically, the bumble bee shouldn't be able to fly, but the bumble bee doesn't know it so it goes on flying anyway.

Mary Kay Ash