

The Biology Flash

Manatee Ecology Class in Ocala National Park. Photo by Ms. Liz Schaffner

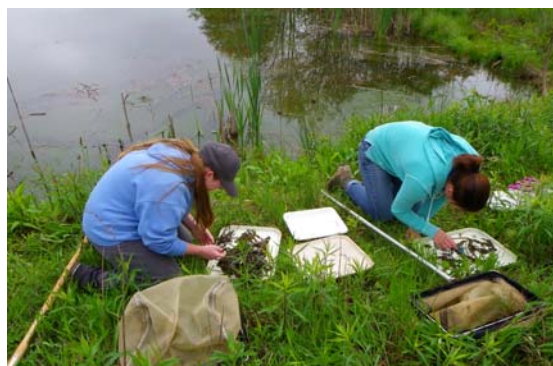
Student News Ticker

- **Nicholas Miller** ('09) received Pharm.D. from Univ. of Charleston WV.
- **Leah Rawleigh** ('08) received Ed.D. from Argosy University. Now Assistant Clinical Coordinator at South University, PA.
- **Caitlin Brown** ('11) Pharmacy Resident at Mayo Clinic.
- **Markus Schulze** ('11) Student Mobility Coordinator at University of West Indies - St. Augustine.
- **Phillip Harchack** ('12) is a Seasonal Entomologist at PA Dept. of Agriculture.
- **Macy Rupprecht** ('12) Earned D.O. from Edward Via College of Osteopathic Medicine, Virginia Campus.
- **Scott Seaman** ('12) Earned M.D. from Penn State Hershey Medical Center May 2016. Now resident of neurological surgery at University of Iowa.
- **Angela Taylor** ('14) Supervisor at Center for Wildlife Care in State College, PA.
- **Zach Rozansky** ('14) Employed at Western PA Conservancy in Indiana, PA.
- **Shannon Adams** ('15) Associate Compliance Engineer at Bechtel Marine Propulsion Corp.
- **Ann Beliles** ('15) Education Trainer, National Aviary, Pittsburgh, PA.
- **Monica Gross** ('16) graduated from UPMC Altoona Medical Laboratory Science Program.
- **Shyla Novak** ('16) graduated from UPMC Altoona Medical Laboratory Science Program.

Biology Students Search for Diversity in Polluted Waters

This summer, a team of SFU Biology students and faculty studied the effects of Abandoned Mine Drainage (AMD) pollution on freshwater biodiversity. AMD occurs when acidic, metal-rich water emerges at the surface after passing through abandoned coal or clay mines. These metals then precipitate in a thick, orange sludge called "yellow boy" that can smother life in streams and ponds. **Dr. Lane Loya** and **Dr. Justin Merry** teamed with a group of four biology students as well as faculty in the Environmental Engineering department to study whether passive AMD remediation systems are effective in creating habitat.

Passive AMD remediation systems typically involve a series of retention ponds that catch AMD sediment before it enters waterways, and are connected by small limestone-lined channels that buffer the pH. The SFU team sampled aquatic insect communities in six AMD remediation sites around Cambria and Somerset counties, along with several control sites. The specimens were brought back to the lab for identification, allowing the researchers to compare species diversity and abundance within AMD sites to unaffected sites. They found that, de-



Processing Samples. Photo by Dr. Justin Merry

spite often still having visible yellow boy present, AMD remediation sites did create insect habitat that contained good species richness and diversity.

This was more than just another summer job for the students involved in this project. "I have always enjoyed being outside, but I honestly had no idea about the diversity of invertebrates," reflected Junior **Alyssa Rozich**. "There is something really unique about being in the field with a group of students and professors who share similar interests and are all working towards a common goal."

— Contributed by Dr. Justin Merry

News from the Biology Department

- Dr. Melissa Meadows published an article on fluorescence in fish in *BMC Research Notes*. Feb. 2016.
- Drs. Lane Loya and Gail Drus were finalists for the Swatsworth Award Spring Semester 2016.
- Dr. Gail Drus was the keynote speaker at the "Tamarisk Beetle & Riparian Restoration Workshop" at the University of New Mexico, Albuquerque on June 2016.
- Drs. Lane Loya and Irene Wolf held a summer academy called "Dragonflies to DNA." July 2016.
- Mr. Andrew Scanlan, Dr. Irene Wolf and a group of undergraduates collaborated on research investigation of diatoms as potential indicator species in AMD polluted streams. Summer 2016.
- Mr. Andrew Scanlan officially joins the Department as a Biology Instructor Fall Semester 2016!
- After 6 years of esteemed service as Chair, Dr. Marian Langer passes the torch to Dr. Justin Merry!



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Alumni: do you have news to share? New job? Attending graduate school? Please contact us and let us know:
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Introducing Dr. Melissa Meadows



Photograph contributed by Mr. Chris Rader

Dr. Melissa Meadows joined SFU last Spring as an Assistant Professor of Biology. Melissa grew up in Bird-in-hand PA, Kenova WV, and Concord NC. She received her B.S. at University of North Carolina at Wilmington, and her Ph.D. at Arizona State University (ASU). Melissa's interest in biology stems from a childhood playing in creeks, stomping around in the woods, and taking family vacations to the beach. Melissa studied Marine Biology for her B.S., and then studied coloration in Hummingbirds for her Ph.D. She discovered her interest in teaching during

graduate school as a Teaching Assistant (TA), and took courses in scientific teaching and pedagogy, and was later an "Innovation TA" for Animal Behavior Lecture. SFU's own Dr. Justin Merry, then also a Ph.D. student at ASU, recognized her talent and was the first person to "teach her how to teach." Her love of teaching led her to pursue a Postdoctoral Research position with a teaching component. At the University of Tübingen, she brought her expertise in animal coloration back into the ocean by studying fluorescence in fish, and she taught a marine research-based field course in the Red Sea in Egypt which she hopes to bring to SFU. She is an energetic addition to the Biology Department bringing unique and exciting hands-on teaching and undergraduate research opportunities. Her energy is vital as the Director of the Marine Biology and Aquarium and Zoo Science programs which are among the most popular in the Biology Department. Melissa is sure to shape the careers of many young Marine Biologists for many years to come.

Student Profile: Ms. Erika Dreikorn



Ms. Erika Dreikorn (left) and Dr. Gail Drus (right).
Photo contributed by Ms. Erika Dreikorn

Ms. Erika Dreikorn graduated with Department Honors in May 2016 after only 3 years at SFU. She is putting her B.S. in Biology (Pre-professional Concentration) to good work as she begins a Master's program in Human Genetics this Fall at the University of Pittsburgh. Erika's main goal is "to contribute to the vastly expanding scientific knowledge of various diseases in an attempt to find the cause and/or develop treatment options for families who are forced to cope with such conditions." The Human Genetics Mas-

ter's program is research intensive and provides the option to transfer into a Ph.D. after several years of study. Erika's undergraduate research experiences have prepared her well for both options.

While at Saint Francis, Erika worked with her Advisor, Dr. Gail Drus, on research projects involving the effects of exotic plant invasion for which she received undergraduate research grants. The initial research project involved the flammability of volatile organic compounds in *Tamarix* spp., a major invader of the American Southwest. Unfortunately, the first project was unsuccessful due to climate control issues in the greenhouse (since rectified). Instead of feeding into frustration from the first failed project, Erika switched gears to study the effects of invasive narrowleaf cattail (*Typha angustifolia*) in pond systems for which she received a special poster presentation award at Saint Francis University's Fall 2015 Research Day.

Erika is an achiever who confronts challenges head on, and her perseverance will serve her well in graduate study. SFU Biology looks forward to what her future will bring.

Manatee Ecology 2016



Manatee near Crystal River Florida. Photo by Ms. Christine Geiger.

Over Spring Break 2016, Drs. Sue Shoemaker and Gail Drus, and Mr. Andrew Scanlan traveled to Crystal River Florida with 17 students for the Manatee Ecology course. Students learned about the natural history of the manatee and then explored economical and political issues surrounding manatees as endangered species. They experienced varying degrees of interaction with manatees, such as swimming with the manatees vs. observing them from a boardwalk, and were then required to take a stand on how much interaction is necessary to save an endangered species. Ultimately, they learned that answers to such issues are never simple.