

The Biology Flash

Arizona Sunrise. Photo by Dr. Gail Drus

Student News Ticker

- **Brianne O'Driscoll ('03)** is a Chiropractic grad and owner of O'Driscoll Sports and Family Chiropractic in Fergus, Ohio.
- **Nicole Nastasi ('11)** Attended Conemaugh Health Systems School of Medical Technology and is employed at UPMC, Pittsburgh as a Stem Cell Lab Specialist.
- **Christopher DeLaney ('14)** is a graduate student at Texas A&M University.
- **Jeremy Arbore ('15)** performing an internship as a Research Assistant with Turtle Trax.
- **Gabrielle McDermott ('15)** is attending Nova Southeastern College of Osteopathic Medicine.
- **Xavier Krause ('16)** is currently enrolled in the PA Program at Lock Haven University.
- **Erika Dreikorn ('16)** is a graduate student studying Human Genetics at the University of Pittsburgh.
- **Nathan Herdman ('16)** is employed as a Research Tech with Dr. Rannar Airik at Children's Hospital of Pittsburgh.

Biology Gets a Real-Time PCR System!

Thanks to a grant by the National Science Foundation's Major Research Instrumentation program, undergraduates in the Biology Department now have access to a Real-Time PCR system. This equipment allows student researchers to directly measure gene expression and assess gene copy number in tissue samples. This opens up a vast array of opportunity to answer questions that are relevant not just to cell biology, molecular biology, and biochemistry, but also physiology, developmental biology, ecology, psychology, and environmental engineering.

"Due to the different disciplines involved, there will be a wide variety of projects supported by this award," said Dr. Irene Wolf, who spearheaded the grant-writing effort and is the primary investigator. For example, one of Dr. Wolf's projects will explore the signaling pathway of deer velvet antler extract, which is a substance commonly used by injured athletes, in a project that may lead to wider applications of the extract to treat injuries or facilitate organ regeneration. Another project, working in collaboration with Dr. Justin Merry, will examine the role of several genes in the development of insect eye size, which is a critical limit of visual acuity and sensitivity in those animals. The project will also

support projects using mouse models. For example, one experiment in collaboration with Dr. Flaisher-Grinberg in the psychology department will evaluate how molecular mechanisms influence susceptibility and resilience to chronic stress. The system will also be used as part of Spring 2017 semester's course, BIOL 430 Advanced Laboratory Methods in Molecular Biology.

While Real-Time PCR systems are actively used at other universities, rarely are they made available to undergraduate students. Our students, on the other hand, will participate in these projects starting as early as their freshman year, and will make use of the system in upper-division courses.

— *Contributed by Dr. Justin Merry*

Bio Students Read "The Martian"

The freshman biology majors read "The Martian" by Andy Weir for the yearly book discussion. The science fiction novel was a departure from the traditional non-fiction selections. Students and faculty shared a lively discussion about the feasibility of growing plants on Mars, and many participated in the Martian Potato challenge: potatoes were issued to students at the beginning of the term to propagate. Botanical prizes were awarded.

News from the Biology Department

- Dr. Gail Drus was the keynote speaker at the "Tamarisk Beetle & Riparian Restoration Workshop" in Las Vegas, NV in November 2016, and received a Faculty Development Grant to begin building a research program to study invasive Japanese knotweed (*Fallopia japonica*).
- Dr. Melissa Meadows received an Excellence in Education grant for \$1,000, co-written with senior Andrew Heise, titled "Coral Propagation at Saint Francis University, and published a paper about fluorescence in fish with collaborators at the University of Tübingen in Germany.
- Dr. John Trimble secured an Excellence in Education grant for \$1,500 to culture HeLa cells in the department's cell culture facility.
- Drs. Lane Loya, Justin Merry and Irene Wolf, plus biology students Alyssa Bartlebaugh, Jade Canak, Katherine Meurer, Colleen Naeger, Alyssa Rozich, and Zachary Sterner, presented their research at the 11th Annual Susquehanna River Symposium at Bucknell University on November 11-12, 2016.



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Alumni: do you have news to share? New job? Attending graduate school?
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Native Path Wildlife



Photograph contributed by Mr. Chris Rader

During Fall Semester 2016, Dr. Melissa Meadows established a new partnership with Native Path Wildlife Center in Somerset, PA. Staff at Native Path are trained and licensed by the Commonwealth of Pennsylvania to rehabilitate a wide range of local animals, including rabies vector species.

SFU's Animal Care Class volunteered at Native Path in October to build rabbit and squirrel enclosures, and to make enrichment items for the animals. As the Center grows, they are excited to have the help of students from the Aquarium and Zoo Science Program at SFU.



Southwestern Research Station. Photo courtesy of the American Museum of Natural History.

AZ Field Biology 2017

Over Spring Break 2017, Dr. Drus will be teaching a new field course at the Southwestern Research Station in Portal, AZ. The station is set in the Chiricahua Mountains which are considered part of a Sky Island Archipelago. The site is a Biodiversity Hotspot because more species of plants and animals can be found there than anywhere else in the U.S. Students will learn about the Natural History of this unique area and will apply the scientific method by developing and executing ecological research projects. The class is a continuation of a class taught by Dr. David Moriarty of Cal Poly Pomona (Dr. Drus's M.S. advisor) for over 20 years. Dr. Drus is excited to continue the tradition.

Student Profile: Ms. Stephanie Wilson



Stephanie Wilson conducting research (left) and scuba diving (right). Photo by Stephanie Wilson.

Ms. Stephanie Wilson is a senior Biology major with a Marine Biology and Environmental Science concentrations. In addition to her coursework, she has traveled, engaged in a variety of campus activities, and has contributed much time and energy to the Biology Department and the School of Sciences in general. Last year, she was been actively involved in the maintenance of the 1500 gallon aquarium at SFU and the care of many specimens in the marine lab in addition to being a Work Study Assistant to the Dean of the School of Sciences, a Microbiology Lab Prep Assistant, and a Teaching Assistant

for Intro Bio, Marine Biology and Human Anatomy Labs.

While at Saint Francis, Stephanie traveled to Crystal River Florida for a class on the Ecology of Manatees, and she has also been to Saint Lucia to study Coral Reef Ecology. Stephanie recently achieved Divemaster rating and hopes to achieve the Dive Instructor rating here at Saint Francis in Spring 2017.

At Saint Francis, Stephanie has received four Undergraduate Research Grants total for her work on "Lab Simulated Eutrophication Effects on Coral and Algae Growth," and the "Construction of a Hydroponic Living Wall and its Potential Integration onto the Saint Francis University." This past summer, Stephanie secured a position in an NSF funded Research Experience for Undergraduates (REU) program at the Virginia Institute of Marine Science.

Stephanie has served as the Vice President of the SGA, the President of Phi Lambda Psi, and is a member of the Tri-beta Biological Honor Society, the Scuba Club and the Biology Club. After graduation, Stephanie is pursuing a career as a Marine Research Scientist.

Halloween 2016



Star Wars Costume Contest. Photo by Dr. Gail Drus.

Members of the SFU Biology Department celebrated Halloween a "long time ago in a galaxy far, far away." Students and faculty constructed home made Star Wars costumes and competed for botanical prizes.

Special Visitor



Photo by Mr. Andrew Scanlan

Local rooster Axel Rose visited campus 8 times Fall Semester to provide hands-on educational opportunities for students.