

# The Biology Flash

Photograph by Katherine Meurer

## Student News Ticker

- **Erika Bendick** ('12) received her M.S. From Slippery Rock University. Now Water Pollution Biologist, PA Dept. of Environmental Protection.
- **Jared Burd** ('10) received his O.D. from Salus University College of Optometry. Now Optometrist in Sidney, MT.
- **Joshua Greenleaf** ('11) graduated from PCOM. Now orthopedic resident in Harrisburg.
- **Nick Lanciano**, D.O. ('05) is a Neurologist at Conemaugh Physician Group, Johnstown.
- **Lauren Maline** ('13) is Biological Science Technician at Padre Island National Seashore.
- **Adam Mengel** ('12) received his M.S. from Indiana University of PA. Now Environment Scientist/Biologist at Tetra Tech EM Inc., Pittsburgh, PA.
- **Jennilee Morrison** ('09) graduated from Ohio State University Veterinary School. Now Avian and Exotics Veterinary Resident in Tennessee.
- **Kristen Ritchey** ('11) graduated from Ohio State University Veterinary School. Now at Companion Animal Hospital, Roaring Spring, PA.
- **Jared Synan** ('12) graduated from Breen School of Nursing, Ursuline College, OH.
- **Ben Shankel** ('12) is Registered Nurse at Mercy Medical Center, Canton, OH

## SFU Students Learn SCUBA in St. Lucia

Last spring, while the ink was still drying on their spring semester exams, students from Saint Francis University traveled to Saint Lucia in the Eastern Caribbean Sea. This wasn't just a vacation, however; these were study abroad students pursuing training and certification in Marine Biology.

Saint Lucia is known for its superb reefs, which make it a perfect venue where students can develop their subsurface skills. While the trip offered beginners the opportunity to become SCUBA certified, experienced divers pursued advanced training. "Every day, we had at least two dives, and in between, we would have lunch, which was prepared by the families of the dive crew," said Junior Andrew Heise, who took Research Diver Techniques as well as the Boat Diver course.

Nevertheless, students learned more than just SCUBA. Students were immersed in the rich culture of a developing nation. They lived and spoke with St. Lucians, were able to taste many fruits endemic to the island, and learned of some of the nation's challenges. "What really stood out to me on this trip was how the culture of the island greatly affected the marine life and interactions underwater," explained Katherine Meurer, a sophomore. "The island as a whole is just trying to survive, and the lack of basic sanitation causes the marine life to suffer."



Wreck of Lesleen M. , Photo by Katherine Meurer

Like most conservation problems worldwide, these challenges will likely need to be solved locally, and students met local people invested in those efforts. A highlight for Senior Gabriel Schuler was visiting the house of a local biologist. "Andre was a St. Lucian that helps organize the trip every year, and he used to be the state biologist. It was great to meet his family and hear him talk about why things like conservation and local communities are important."

SFU students can travel to St. Lucia once again in May 2016. Courses offered include Advanced Open Water Diving, Underwater Digital Photography, Underwater Naturalist, Fish Identification, Boat Diver, and Coral Reef Ecology.

## News from the Biology Department

- Biology Department Administrative Assistant Beverly Smith retired after 18 years at Saint Francis University. The department welcomes Ms. Christine Driskel as the new Administrative Assistant.
- Dr. Melissa Meadows joined the department January 2016 as the department's Marine Biologist. Dr. Meadows received her Ph.D. at Arizona State University, and recently completed a post-doc at University of Tuebingen, Germany, studying marine fish coloration.
- Dr. Irene Wolf and Dr. John Trimble collaborated with international students from Brazil during Summer 2015 to establish mouse cell culture lines in the department's new cell culture facility.
- Dr. Gail Drus traveled to Panama during November 2015 to evaluate the academic potential of a study abroad experience sponsored by the Smithsonian Institute and World Strides.



## Department of Biology

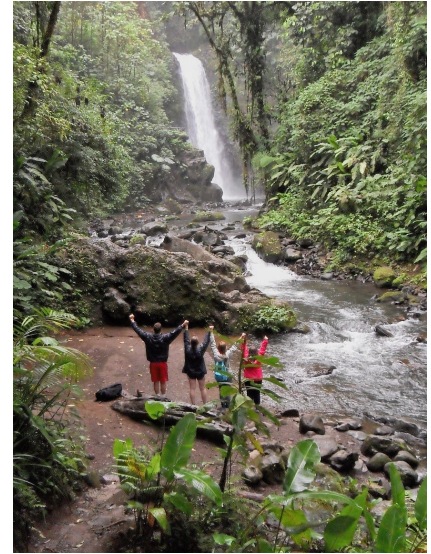
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**Alumni: do you have news to share? New job? Attending graduate school? Please contact us and let us know:**  
***Dr. Justin Merry, Editor***  
***[jmerry@francis.edu](mailto:jmerry@francis.edu)***

## Costa Rica: An Outside Classroom Rich with Life

In May of 2015, a small group of Saint Francis students spent 3 weeks in beautiful Costa Rica. Their days were spent studying Spanish, visiting places of cultural and historical interest, and, if they were very lucky, taking Biology 412 – The Natural History of Costa Rica. Biology 412 students studied and experienced many aspects of Costa Rican geology, flora and fauna, but their survey barely scratched a dent in one of the most biodiverse sites in the world. They gained an appreciation for strange and flavorful tropical fruits and for the intricate relationships between floral structure and pollinators found only in tropical systems. During daytime excursions and night hikes, the students had rare glimpses of plants, mammals, birds, reptiles, fish and insects unique to Costa Rica. They explored the many different environments Costa Rica has to offer, and they wove together an interesting evolutionary tale from the many adaptations of organisms specific to



Photograph by Dr. Gail Drus

each area. The adventure continues in May of 2016 with Biology 322 – Field Biology in Costa Rica. Interested students should contact Dr. Gail Drus at [gdrus@francis.edu](mailto:gdrus@francis.edu)

—Contributed by Dr. Gail Drus

## Investigating the Impact of Herbicides on Amphibian Development

Alex Carr and Nathan Herdman met at Saint Francis University with a major interest in common: they had a strong desire to pursue meaningful biological research. Sophomore year, they began what would become a three-year project investigating the effects of an herbicide, 2,4-Dichlorophenoxyacetic acid (2,4-D) on the development of frog tadpoles. 2,4-D is used to treat lawns and practice fields, but run-off that spills into waterways has potential to impact wildlife.

“[Studying 2,4-D] quickly sparked my interest because I came to a realization that the use of pesticides for agriculture is a very important environmental issue that deserves attention from scientists,” said Carr, who, like Herdman, is now a senior. The two of them approached Dr. Justin Merry and worked with him to develop a project. They exposed developing frog tadpoles to different concentrations of

the herbicide in controlled settings, and then monitored their development. The two students took primary responsibility for designing and funding their work via grants, securing appropriate ethical approvals, and then executing the project. “The assessment techniques we used included weighing and measuring tadpoles, preparing fixed cross sections of them, staining them, and then looking for any abnormalities,” explained Herdman.

A project of this scope required a significant investment of time and energy. “The most challenging aspect of the project is the amount of work and responsibilities that come along with it. We have had to spend countless hours ensuring our tadpoles remained healthy and preparing samples for assessment,” said Herdman. Nevertheless, their efforts bore fruit. Their data provide strong support for the hypothesis that 2,4-D can negatively af-



Developing frogs, 1 day prior to emerging from eggs as tadpoles. Photo by Dr. Justin Merry

fect tadpole survivorship, especially in the days immediately after hatching.

Both Carr and Herdman plan to pursue graduate degrees in biological research after graduating in May. Carr is currently applying to interdisciplinary programs in biomedical science or pathobiology, with an emphasis on immunology.