Welcome back and for the new 136 freshman who registered this year, welcome to biology. We have a new Biology Freshman Success class where you will set up your 4 year plan of study and also get to hear from many of the faculty who will come and give quick talks about their research and how you might get involved. Make sure you get to know your advisors and they will be able to answer many of the questions you may have about the programs here at IPFW. Over the next semester get involved and engaged in biology activities like the biology club or our new microbiology club. By getting involved you will get to know what types of jobs and careers are available to you with a Biology degree.

I have attached a photo of Dr. Nathan Robinson who is here working with me on Panda research in China. We want to welcome Dr. Vamsi Nalam as a new tenure track Assistant Professor who will be teaching animal and plant physiology classes including Biol 21500, 21600, 10900, 11900 and 21900 over the next few semesters. We in biology welcome you all to a new and exciting year at IPFW. Hope this gets you all excited to get involved with the research of the professors here at IPFW!

Frank V. Paladino Ph. D. FAAAS
Jack W. Schrey Distinguished Professor
Chair of Biology
Congratulations to the following students receiving the Bachelor of Science degree:

Amritpal Gill
Colton Johnson
Dexter Shipe

Congratulations to the following students receiving the Master of Science degree:

Kevin McLane
Advisor: Professor Bruce Kingsbury

Emily Stulik
Advisor: Professor Bruce Kingsbury

Amber Rhodes
Advisor: Professor Frank Paladino

Sasha Tetzlaff
Advisor: Professor Bruce Kingsbury

NEW TEACHING ASSISTANTS

Areli Gutierrez
Advisor: Professor Bruce Kingsbury

Audrey Martin
Advisor: Assistant Professor Jaiyanth Daniel

Ashley Taylor
Advisor: Associate Professor Robert Gillespie

Shannon Kuznar
Advisor: Professor Frank Paladino

Ryan Smith
Advisor: Professor Bruce Kingsbury

Callie Veeleturf
Advisor: Professor Frank Paladino

Jamison Law
Advisor: Assistant Professor Jaiyanth Daniel

Amanda Stoffer
Advisor: Professor George Mourad

Luna Wahab
Advisors: Professor Ahmed Mustafa/Associate Professor Elliott Blumenthal.

NEW GRADUATE RESEARCH ASSISTANTS

Patrick Selig
Advisor: Assistant Professor Vamsi Nalam

Elizabeth Sinclair
Advisors: Professor Frank Paladino/Dr. Shaya Honarvar

Andrew Sellan
Advisor: Associate Professor Elliott Blumenthal

2015-16 Graduate Teaching and Research Assistants. Front row: Andrea Myers, Audrey Martin, Lauren Cruz, Md. Ibrahim, Luna Wahab; Second row: Kumud Joshi, Elizabeth Sinclair, Melissa Beaty, Ashley Taylor, Tazin Fahmi, Callie Veeleturf, Shannon Kuznar; Third row: Patrick Selig, Jinlong Han, Taylor Lehman, Eric Stadig, Areli Gutierrez, Ryan Smith, Alicia Conrad, Amanda Stoffer; Fourth row: Mursalin Khan, Adam Warrix, Andrew Sellan, Jamison Law, Tyler Wood, Mahanish Thapa (Photo Credit: Biology, IPFW).
STUDENT CLUB OFFICERS FOR 2015-2016

Pre-Med Club
President – Srilatha Dasari
Vice President – Isabella Betancourt
Secretary – Zachary Jones
Treasurer – Kimberly Baker
Faculty Advisor: Professor George Mourad

Biology Club
President – Shayne Hamilton
Vice President – Tyler Siewek
Secretary – Allison Amstutz
Treasurer – Samantha Gary
Faculty Advisor: Associate Professor Mark Jordan

Beta Beta Beta- The Biology Honors Society
President – Destin Furnas
Vice President – Cecelia Smith
Secretary – Grayson Ostermeyer
Treasurer – Ian Gatchell
Historian – Farzana Tarannum
Faculty Advisors: Assistant Professor Vamsi Nalam and Julie Feightner

Pharmacy Club
President – McKenna Murphy
Vice President – Megan Sexton
Secretary – Meriana Nadrous
Treasurer – Devon Sipe
Faculty Advisor: Associate Professor Vincent Maloney

REGISTRATION - SPRING 2016

We strongly encourage you to speak to your advisor before registering for classes. If you are a senior registering on OASIS and expect to graduate at the end of the current semester, be sure to check the box to initiate a graduation audit.

Priority registration for spring 2016 begins October 19. Dates for processing are set by class standing (degree candidates, graduate students, and seniors go first). See the Spring 2016 Schedule Information in your IPFW student handbook or the Registrar’s website for additional details. Student handbooks are available throughout the campus including the Student Government office located in Walb Union, room WU 225 and the Biology Department in SB 330.

Seniors, Grad Students....begins October 19
Juniors, Honors Students, Student Athletes, Students with Disabilities ....begins October 26
Sophomores ....begins November 2
Freshmen ....begins November 9

CHEMISTRY NEWS
The Chemistry department is offering CHM 25500 (Organic Chemistry) online in the spring 2016 term. The lab for this course will be offered fall 2016. If there is enough interest CHM 256 (organic chemistry) will be offered online in the fall 2016 term with the lab being offered in spring 2017. Additionally, CHM 53300 (Intro to Biochem) will be offered in summer 2016.
**BIOscope, Fall 2015**

**SPRING 2016 - BIOLOGY ELECTIVES**

Please note: listed below are tentative A and B electives for Spring, 2016.

**A Electives**
- BIOL 34500 - Vertebrate Biology (Lecture and Lab) (Associate Professor Mark Jordan)
- BIOL 52000 - Contemporary Physiology (Lecture) (Professor Ahmed Mustafa)
- BIOL 54300 - Population Ecology (Lecture and Lab) (Professor William DeMott)
- BIOL 58200 - Ecotoxicology (Lecture) (Associate Professor Robert Gillespie)
- FNR 50500 - Molecular Ecology & Evolution (Lecture) (Associate Professor Mark Jordan)
- BIOL 59500 - Crse: Invasion Biology (Lecture) (Assistant Professor Jordan Marshall)

**B Electives**
- BIOL 31500 - Developmental Anatomy (Lecture and Lab) (Associate Professor Winfried Peters)
- BIOL 50900 - Molec Biology & Appl (Lecture) (Professor George Mourad)
- BIOL 52410 - Bacterial Diversity Systematic (Assistant Professor Tanya Soule)
- BIOL 53700/56500 -Immunobiology (Lecture and Lab) (Professor Elliott Blumenthal)
- BIOL 54400 - Principles of Virology (Lecture only) (Assistant Professor Jaiyanth Daniel)
- BIOL 59500 - Crse: Emerging Infect Diseases (Lecture) (Assistant Professor Jaiyanth Daniel)

**STUDENT NEWS**

**Biology and Geology Students Learn the Value of Fieldwork in the Bahamas**

At IPFW, students have many opportunities for course-related off-campus fieldwork, some of it in international locations. In the cross-referenced courses, BIOL 434, Marine Community Ecology, and GEOL 331, Principles of Sedimentation, students study marine biodiversity and the process of sedimentation in marine environments. In this course, the biology and geosciences majors attend classes on campus in a traditional format, but the course also includes a week-long research trip to the Bahamas Gerace Research Centre, on the island of San Salvador.

Vinnie Peters, associate professor of biology, and Ben Dattilo, associate professor of geology, team-teach BIOL 43400/GEOL 33100 as a way to provide a broader, more interdisciplinary sense of marine life and environments. Help students better immerse themselves in the course content by bringing them out of the classroom into a real-world learning environment to experience and explore with all of their senses.

Students who take this course learn about biodiversity and fossils, but they also learn how biology and geology are interrelated. Established by Dr. Jim Haddock as a course in marine biology in 1974, it became an interdisciplinary biology/geology course in 2013. According to Peters, one of the “most important take-aways” from this class is that knowledge is not neatly divided into subjects in the manner of university courses or departments: “The separation of our disciplines is completely artificial, and this becomes obvious once you look a little deeper into that. But also when you consider the sciences and humanities or history, the borders between those modes of human knowledge are far less rigid than people believe.”

Students may enter this course with the idea that geology and biology are completely different subjects, but spend the term studying them as part of a unified “mode of human knowledge.” Krystal Peden (biology), commented on how initially “it seemed that most of us wanted to focus simply on our field and the ‘biology’ or ‘geology’ aspects alone.” But after a while “we all realized that everything was woven together—we definitely expanded our knowledge base by extending into other fields of study.”

Crystal Harter (geology) had similar comments, “I got far more out of the course than I had anticipated, and a lot of that had to do with the integrated disciplines. The geology and biology students were combined, which allowed me to integrate fundamental biological concepts with what I already knew about geology.” Both Peden and Harter went into the class primarily interested in their own majors, but quickly appreciated studying biology and geology as one single subject.
As multiple studies show, fieldwork enhances student learning by providing hands-on experience that allows students to make new connections and encourages independent thinking. Senior biology student Lauren Lamboley felt that the tactile experience enhanced her learning, “It’s one thing to learn about gastropods from a PowerPoint, but to be able to pick up three nerites, hold them in my hand, and learn to distinguish a four-tooth from a bleeding tooth and a tessellated was astounding.”

For Amanda Straw (geology) fieldwork in the Bahamas brought home the concepts she learned in the classroom, “when we were out there we just learned so much about how the environment was influenced in paleoclimates, millions of years ago, and you could see it in the fossils. Like in the fossil reef field, the reefs were really high up on the shore, which indicates a higher sea-level at one point. These things we talked about in class, we actually got to see it.”

According to Dattilo, it’s very important for geology majors to take this trip, because while other geology courses include regional fieldwork in Cincinnati or southern Indiana to see the fossilized remains of prehistoric seafloors and reefs, the Bahamas trip gives them a sense of what the oceanic environment in Indiana or Ohio was like during the Silurian Period, more than 420 million years ago. “You can go down US Highway 24 and drive through fossilized coral reef, but it can be hard for students to imagine what it was like. When they’re [at the Bahamian research center], they can see it, and bring back the images while they’re studying fossils here. The process just clicks.” He and Peters agree that while lab and class work are important, fieldwork is pivotal to understanding both biology and geology. Dattilo adds, “Geology is a full-body experience. The whole body needs to be involved in learning. When the students are out there underwater, above the sea-floor with sand and shells, they’re surrounded by the subject. It’s a literally immersive experience.”

Finally, fieldwork gives students the practical experience they’ll need in the future. Lamboley, who plans to pursue a degree in marine biology after graduation, notes, “The knowledge and techniques I learned in the field with Peters and Dattilo have made me a more observant scientist and student. Peters has taught me the importance of persistence and accurate data collecting. These are assets and will make me more marketable and increase my productivity and credibility.” So, students in this field course enjoy a week in the Bahamas, but they also learn techniques that will help them become better students and better scientists.

If you’re interested in learning more about the Bahamas field course, you can also contact the biology or geosciences department for more information.
Eric Stadig (graduate student of Associate Professor Bob Gillespie) was awarded two travel grants this spring to present his research. He presented a poster at the 58th Annual Conference of the International Association of Great Lakes Research in Burlington, Vermont. The four day-conference had more than 700 multi-disciplinary scientists from around the world, presenting more than 100 presentations per day from every aspect of Great Lakes Research.

His presentation was on “Monitoring Long Term Trends in the St. Joseph River Watershed” and was well received by the IAGLR faithful! This was an unbelievable opportunity to showcase student research at IPFW. Between the networking opportunities within the field, future research considerations, and the shear educational value of attending the conference, this was an amazing experience for him.

Honors Program Pins

The following biology students received honors program pins on Tuesday, September 22, 2015.

Dusty Gremaux  Samantha Nichols  Darren Shoemaker  Carrie Vachon
Amanda Martin  Gabriela Romo  Heather Sterrett
**ALUMNI NEWS**

Melissa Garringer, was one of four students accepted to the Parkview Medical Technology Program starting July 2015.

**FACULTY NEWS**

**Associate Professor Mark Jordan**

Associate Professor Mark Jordan received the Science Teacher of the Year Award, awarded by the IPFW Sigma Xi Chapter IPFW and the Leepoxy Award for Excellence in Undergraduate Teaching, awarded by IPFW Center for the Enhancement of Learning and Teaching.

**Professor Bruce Kingsbury**

In summer 2015, several stories were published about the IPFW Environmental Resource Center’s (ERC) efforts to save the eastern massasauga rattlesnake. Biology graduate students Sasha Tetzlaff and Mike Ravesi were interviewed by David Cassleman of Interlochen Public Radio (WIAA at 88.7). Biology graduate student, Taylor Lehman and Professor Bruce Kingsbury were quoted in a News Sentinel article about the endangered species, “IPFW Research Part of Efforts to Save Endangered Eastern Massasauga Rattlesnake,” and the project was referenced in a *Washington Times* article, “IPFW Research Part of Effort to Save Endangered Rattlesnake.”
Professor Kingsbury also discussed a proposed environmental center for the new riverfront development project that would focus on river research and education. You can read more in a News Sentinel article, “River Study Center Suggested as Part of Downtown Riverfront Development,” an NIPR article, “Fort Wayne’s Journal Gazette, “IPFW Professor Leads River Studies.”

Following are the dissertations completed by graduate students from Professor Kingsbury’s lab:

**Savanna Vaughn.** 2015. Short-term Response of Deer Mice (*Peromyscus maniculatus*) and White-footed Mice (*Peromyscus leucopus*) to Invasive Shrub Control. Savanna is now Assistant Property Manager at Pigeon River State Fish and Wildlife Area.

**Emily Stulik.** 2015. Amphibian Occupancy and Habitat Use in a System of Restored Wetlands. Emily is now working as an ecologist for ASC Group, Inc.

**Sasha Tetzlaff.** 2015. To Forage, Mate or Thermoregulate? Influence of Food Supplementation on Behavior of the Rattlesnake *Sistrurus catenatus*. Sasha works for us now while he lines up his PhD.

**Kevin McLane.** 2015. Ecology of the Snapping Turtle (*Chelydra serpentina*) in a Suburban River. Kevin is now working as a wetland ecologist at Green 3 LLC.
Professor Ahmed Mustafa

Professor Ahmed Mustafa has recently established an aquaponics research facility at IPFW. Aquaponics is a system that combines conventional aquaculture (raising aquatic animals such as snails, fish, crayfish or prawns in tanks) with hydroponics (cultivating plants in water) in a symbiotic environment. In normal aquaculture, excretions from the animals being raised can accumulate in the water, increasing toxicity. In an aquaponics system, water from an aquaculture system is fed to a hydroponic system where the by-products are broken down by nitrification bacteria into nitrates and nitrites, which are utilized by the plants as nutrients. The water is then recirculated back to the aquaculture system.

Lettuce growing on water in the aquaponics lab (Photo Credit: Ahmed Mustafa)

IPFW Chancellor Vicky Carwein visiting Professor Mustafa’s aquaponics lab at IPFW (Photo Credit: Ahmed Mustafa).
Professor Frank Paladino

Frank Paladino, Jack Schrey Distinguished Professor and chair of biology, served on a government panel reviewing National Oceanic and Atmospheric Administration (NOAA)—National Marine Fishing Service (NMFS) Protected Science in Hawaii and was elected president of the International Sea Turtle Society.

While working with the Leatherback Trust gathering genetic samples, Nathan Robinson, a post-doctoral fellow working with Professor Paladino, was part of a Leatherback Trust team that found a turtle with a 4-inch plastic straw embedded in its nose. A video of Robinson’s removal of the straw was posted to YouTube by the team.

Watch the https://www.youtube.com/watch?v=d2J2qdOrW44&feature=youtu.be (Warning: This video contains graphic images).

Recent Biology Publications


RECENT BIOLOGY PUBLICATIONS (CONTINUED)


**Edited species accounts published on Animal Diversity Web.** Students write these for an assignment in Vertebrate Biology class (BIOL 34500). The site is hosted by the Museum of Zoology, University of Michigan (UMMZ). Student authored accounts are edited by Dr. Jordan and UMMZ staff before online publication (search for accounts listed below on http://animaldiversity.org).


**Recent Biology Presentations**


**Regina Shannon** and Ahmed Mustafa. A Comparison of Stress Responses in Sea Cucumbers and Sea Urchins Exposed to Salinity and Handling Stress. Student Research and Creative Endeavor Symposium, Indiana University-Purdue University Fort Wayne. March 17, 2015.


Welcome back and for the new 136 freshman who registered this year, welcome to biology. We have a new Biology Freshman Success class where you will set up your 4 year plan of study and also get to hear from many of the faculty who will come and give quick talks about their research and how you might get involved. Make sure you get to know your advisors and they will be able to answer many of the questions you may have about the programs here at IPFW. Over the next semester get involved and engaged in biology activities like the biology club or our new microbiology club. By getting involved you will get to know what types of jobs and careers are available to you with a Biology degree.

I have attached a photo of Dr. Nathan Robinson who is here working with me on Panda research in China. We want to welcome Dr. Vamsi Nalam as a new tenure track Assistant Professor who will be teaching animal and plant physiology classes including Biol 21500, 21600, 10900, 11900 and 21900 over the next few semesters. We in biology welcome you all to a new and exciting year at IPFW. Hope this gets you all excited to get involved with the research of the professors here at IPFW!

Frank V. Paladino Ph. D. FAAAS
Jack W. Schrey Distinguished Professor
Chair of Biology

BIOScope an information bulletin published three times during the academic year by the IPFW Department of Biology. It is posted electronically in PDF format on the Department of Biology website. Students wishing to submit items for the next issue should contact the editor, Professor Ahmed Mustafa, at 481-6328 or mustafaa@ipfw.edu.