
Biological Sciences Students Association

Spring 2013



Did You Know?
A science fact by Dr.
Capparella



Spring is in the Air!

Welcome back Biological Sciences majors! We hope everyone has enjoyed their winter vacation and got plenty of rest because it's time to get back to work! This semester is a new palate so give it all that you've got and participate in many of the activities that will be hosted by the School and BSSA this semester! These events upcoming will not only help you in your science careers but they will also give you time to meet new people and have lots of fun! Can't wait to see you at our activities this semester!

Did you know that ISU has specimens of two extinct birds formerly common in Illinois? The Passenger Pigeon and the Carolina Parakeet are among the specimen treasures to be found in the John Wesley Powell & Dale Birkenholz Natural History Collection curated by Dr. Angelo Capparella on the 4th floor of Science Laboratory Building. In addition to birds, the collection of mammals, reptiles and amphibians supports teaching and research activities. And as students bring in birds they find killed by striking windows on campus, we add more material to the collection and the international database, VertNet, of which we are a contributor.”

A Letter From the Department Chair

The School of Biological Sciences has several events planned in Spring I sincerely hope to see many of you around. I hope everyone stopped by and enjoyed the cake in the Felmley Science Annex that was given in celebration of Charles Darwin's birthday Dr. Armstrong on February 14th. In April, we have our annual Phi Sigma Research Symposium (Friday, April 12th) where our students get a chance to show off their research efforts and discoveries. Students can choose to give oral or poster presentations of their work. If you are working in a laboratory, I encourage you to take advantage of this excellent opportunity to discuss your work with friends and colleagues. If you have not yet entered a laboratory, this is the perfect forum to learn about the exciting research that is happening right here at ISU and talk to professors directly about their research. In late April, we will once again honor our graduating seniors with a BSSA sponsored spring banquet for them and their parents at the Alumni Center. I hope many of our soon to be alums can make it to this special event as I truly enjoy talking with you and meeting your parents (keep your eyes open for details). The semester ends with a Phi Sigma Awards banquet on April 27th where we present many of the graduate and undergraduate awards for outstanding scholarship, teaching, grant writing, and travel.

I would also remind you that the School hosts a weekly seminar on Thursday afternoons where invited speakers present current research discoveries in all aspects of Biology. Each seminar is preceded by a 30 min social with snacks; you can see the announcements each week on the School's webpage (<http://bio.illinoisstate.edu/>). I would especially encourage students to attend three speakers during February as we bring in candidates for faculty position in Infectious Disease Ecology. This is an opportunity for you to see and voice your opinions on potential new faculty members for your School. One seminar in particular I would like to draw your attention to is our Rilett Lecture on April 4th. Dr. James Hanken, Director, Museum of Comparative Zoology, Harvard University will be giving a seminar entitled, "Is there a role for natural history museums in modern science & society?"

Enjoy the rest of your semester and I look forward to seeing many of you as the Spring progresses, and best of luck during your finals! I wish you the very best this semester and hope that you take advantage of the many out of class opportunities we have planned.

Craig Gatto, Director
School of Biological Sciences

Research and Grants

Bill Perry (School of Biological Sciences), Catherine O'Reilly (Department of Geography – Geology), and Shalamar Armstrong (Department of Agriculture) have received a National Science Foundation grant for \$145,000 to purchase a Flow Injection Analysis – Ion Chromatograph (FIA-IC) System. This instrument allows automated high throughput analysis of nutrients and ions in soils, surface and ground water. Faculty, graduate students and undergraduate students in the School of Biological Sciences, Department of Geography - Geology, Department of Agriculture, and Department of Chemistry will benefit from the ability to rapidly analyze samples using this cutting-edge piece of equipment.

Distinguished Professor Brian Wilkinson and Professor Craig Gatto recently received an award of \$432,000 from the National Institutes of Health for a grant proposal entitled “Branched-chain fatty acids and membrane function in *Listeria monocytogenes*”. This bacterium is a food borne pathogen responsible for the disease listeriosis. It has the unusual ability to grow at refrigeration temperatures and thus the organism can become enriched upon cold storage of food. In order to grow at low temperatures the membrane must have sufficient fluidity and this is a critical role of branched chain fatty acids. They will be studying the mechanisms involved in altering the fatty acid composition at low temperatures.

Meet The Professor! An interview with Dr. Rubin

Interesting fact: Dr. Rubin began working with mosquitos when he was an undergraduate at Clark University. This research required that Dr. Rubin be the host for several hundred mosquitos, a very unpleasant position to be in. Ultimately, this unfortunate research design lead him to begin his research on zebrafish and chickens.

What is his lab currently working on: There are currently six undergraduate students working in his laboratory working on a plethora of projects dealing with bone development based looking at the PTH and PTH2 receptors. When speaking with Dr. Rubin he showed pride for the large number of undergraduate students he has been able to give research opportunity to. One of our seniors is currently completing her senior honors thesis conducting a research project on the bone turnover and problem of osteoporosis in chickens. Other projects include work with the zebrafish and a condition labeled campomelic dysplasia, a type of craniofacial /skeletal disorder. Using knockout techniques, they are able to study the development of fish with this disorder as well as midbrain development.

You may wonder, where do the chickens come from? Dr. Rubin currently collaborates with the University of Illinois at Champaign–Urbana as well as Purdue University,

Goals for the lab: They will submit a grant application to the NIH that will allow them to continue their study of the developmental genetics of zebrafish. Another grant is expected to be submitted to assist in experiments regarding brain development.

Accomplishments: In the last three years, including 2013, the lab has published 6 manuscripts (1 in 2011, 3 in 2012, and 2 in 2013!). Undergraduates have the potential to be co-authors on papers. In addition, Dr. Rubin currently is hosting his 8th and 9th honors students who plan to complete a senior thesis.

Fun fact: Campbell’s Soup once used spent chickens breast muscle as an ingredient in their infamous chicken noodle soup. However, after complaints of bone fragments present in the soup the company had to turn away from the use of these sometimes osteoporotic (up to 40%) chickens.

Recent and Upcoming Events By BSSA



A member from Relay For Life who came to speak about the event which is held every year right here on campus! It would be great if a group of us could participate this year! It's tons of fun, lots of food, and a chance to not only make a difference but also a great way to get to know your future colleagues. The date and place hasn't been decided yet but if we receive more information we will go more in depth about forming a group.

Questions? Requests? Any Ideas?

We are always open to any ideas and any feedback, this newsletter is catered to meeting the needs of graduate and undergraduate students. If you have questions about volunteering, research, or any ideas for the newsletter or Biological Sciences Students Association that can help make your life as a science major a lot easier feel free to contact the Newsletter Editor or you can speak to the president, Megan Lawler. I am always looking for more ways to make your lives easier, have a wonderful semester!

MEET AND GREET!

There was a meet and greet in the past semester filled with laughs, fun, games and tons of pizza! The event was a complete success, everyone had a wonderful time and enjoyed the games as well. If you couldn't make it to the last meet and greet, there's no worries there will be many social events during the semester!

Movie Night at Normal Theater!

A group of people went to see White Christmas! There will be plenty of opportunities to have a movie night at the theater this semester at the convenience of everyone's schedule.

