Greetings and welcome to our third edition of The Leaflet!! As usual, we have a lot of news to share. This Fall we welcomed a new tenure-track faculty member, Dr. Rick Heineman to the Biology Department. Dr. Heineman received his Ph.D. in Ecology, Evolution, and Behavior from the University of Texas at Austin, and was recently a Postdoctoral Fellow at the University of Minnesota Twin Cities where he did research on HIV. In addition to teaching courses such as Principles and Genetics, Dr. Heineman will be developing a new course in Virology at Kutztown.

The Department’s lab facilities have recently expanded with the addition of a new Ecology/Environmental lab and associated support spaces on the first floor of Boehm. Several lab sections are being taught in the new facility this academic year including labs for Aquatic Ecology, Conservation Biology, Ecology, Environmental Biology, Herpetology, and Introduction to Environmental Science.

The Biology Department’s Peer Mentoring Program has expanded its efforts to help new students acclimate to Kutztown, and new student clubs have recently formed in the Department including the Biology International Club and the Women in Science Club. Faculty and students continue to be actively involved in interesting research projects; information about some of these projects and resulting publications can be found in this edition of The Leaflet.

Future editions of The Leaflet will continue to include news from faculty, students, emeriti, and alumni. We would very much like to hear from you and would be happy to include your news in The Leaflet! Contact information for submitting news to The Leaflet can be found on the last page of the newsletter.

Best wishes!!!

Carol C. Mapes
Chair of the Biology Department
NSF funded grant supports Marine and Environmental Science programs at KU

KU Biology Professors Dr. Chris Sacchi and Dr. Wendy Ryan co-authored a National Science Foundation grant ($599,749) funded through the NSF Division of Undergraduate Education Scholarships in Science, Technology, Engineering, and Math (S-STEM) program. This grant supports scholarships that are being awarded to applicants of strong academic potential and demonstrated financial need, who enter as freshmen in the Environmental Science or Marine Science programs. Students can be renewed for the scholarship from year to year for the duration of the grant. In addition to scholarships, this program provides incoming students with academic support, a peer mentor, career awareness development and support, field trips, and two seminars by outside speakers each semester. The associated support program is called the Teaching, Research and Careers at Kutztown in Science (TRACKS) program. Some of the support services provided by the TRACKS program are open to all Biology, Environmental, and Marine Science students.

When asked about the impact of this program on her personal and professional life, KU environmental science junior Hannah Fairley said, “this program helped me become aware of opportunities for my future scientific career by introducing me to new experiences that I didn’t know were available.” In addition to providing professional development, this scholarship has been a tremendous help by reducing the financial burden of attending college, allowing scholarship recipients to focus on their scholastics.

Student Summer Research Highlights

Numerous Biology, Environmental Science, and Marine Science students were actively involved in independent research during their summer “break.” Below, we have highlighted a few of the many exciting projects that our students were engaged in.

**Pete Korpics** and **Sarah Kropf** worked with Dr. Matthew Stone on a long-term monitoring program of the Diamondback Terrapin at the Chincoteague Bay Field Station (CBFS; formerly the Marine Science Consortium). They focused, primarily, on the impact of road mortality on terrapin populations. **E. Justin Warren** also conducted research at the CBFS with Dr. Wendy Ryan. Their research focused on individual variation in metabolic rate of zooplankton as a function of varying pressure.

**Hannah Fairley** and **David Grow** conducted conservation research with Dr. Habeck at the KU Ecoplot and Hawk Mountain Sanctuary. Both projects are focused on understanding best management practices for the control of the invasive Japanese Stiltgrass. **Andrew Houck** worked in a far more exotic
location with his research advisor, Dr. Sacchi. Their research focused on understanding the composition of plant communities under different small-scale agricultural regimes in Jamaica. **Branden Kohler** had a REU at the University of Texas. The title of his research project was, “Investigating the effectiveness of geochemical proxies of hypoxia exposure in the otoliths of Atlantic Croaker.”

**Recent Publications in the Department** (*indicates former KU student*)


**2013 Annual Student Awards:**

The Biology Department recognizes the following students for their exemplary service, research, and/or academic achievement:

- CPUB Award:
  - **Jordan Kemfort**

- Ronald Rhein Scholarship:
  - **Robert Conrow**

- Cyrus E. Beekey Award:
  - **Makayla Boyd**

- Sam Gundy Early Achievement Awards:
  - Ezry St. Iago-McRae & Sasha Kulick

- Joshua W. Wesner Scholarship:
  - Tabetha Super (Fall 2012)
  - Claire Brookens (Fall 2013)

- CPUB Platform Presentation, 2nd place
  - **Jordan Kemfort**

- CPUB Poster Presentation, 2nd place
  - **Liasha Batson**
KU gets infected with Dr. Richard Heineman

We are happy to welcome Dr. Richard (Rick) Heineman, a tenure-track faculty member, to the Biology Department in Fall 2013. Dr. Heineman received his B.A. in Biology from Grinnell College in 2001 before entering a Ph.D. program in Ecology, Evolution, and Behavior at the University of Texas-Austin. After earning his Ph.D., he spent three additional years at UT doing research with students in the Freshman Research Initiative. Later he spent a couple of years as a NIH-funded Postdoctoral Fellow at the University of Minnesota studying HIV. During his postdoc, Dr. Heineman began looking for a molecule that would mutate HIV so he could study its evolution, but accidentally stumbled upon an antiviral drug interaction that could have clinical implications. Most recently, Rick joined us from Saint John’s University, where he taught Genetics, Molecular Genetics, and an introductory biology course. At KU he teaches Principles of Biology and Genetics.

Dr. Heineman’s research foci are in the fields of virology, bacteriology, and evolutionary biology. He grows populations of bacteriophages (harmless viruses of bacteria) in the lab and observes their adaptation. This work uses microbiological and molecular techniques to answer genomic and evolutionary questions. Dr. Heineman’s research has implications for increasing our understanding of the evolution of virulence in pathogens, the basis for cooperation or conflict between organisms, and our understanding of genetics. In Dr. Heineman’s short career he has amassed nine peer-reviewed publications in well-respected journals and numerous prestigious grants, fellowships, and awards. He is dedicated to advancing undergraduate research and education.

Dr. Heineman’s personal interests include A) board games, B) reading science fiction, C) keeping his 11 month old daughter alive, and D) improv comedy if he ever has time for it again (see C).

Student Highlight: Ty Frank ('14)

Ty Frank, a senior Environmental Science-Biology major, is a Pennsylvania native, from Pennsburg, PA. He is an exceptional student at KU; he currently holds a 3.83 GPA and has received several scholarships/awards. Most recently, he was recognized for his hard work and academic achievement when he was awarded an APSCUF certificate of excellence.

At KU, Ty has been extremely proactive at gaining hands-on experience in his field of interest, Wildlife Biology & Management. During spring of 2013, Ty completed an internship with the Pennsylvania Game Commission. Through that experience, Ty worked on a study on mortality and dispersion of white-tailed deer in the state of PA. He gained expertise in a diverse array of wildlife techniques such as mark-recapture, rocket netting, and wildlife anesthesia. During summer 2013, Ty also worked on large
mammal projects in the Upper Peninsula of Michigan as part of a collaborative research project between Mississippi State University and the Michigan Department of Natural Resources. During those projects Ty helped with the tracking of large predators such as bobcats, coyotes, bear, and wolves. He worked primarily with a mark-recapture and survival study of white-tailed deer fawns.

**Recent Graduates: Melissa Bernhard (’12)**

Melissa is currently a graduate student at the College of Charleston where she is working under the direction of Dr. Satomi Kohno. She is also working in close association with Dr. Louis Guillette, who is internationally recognized for his endocrine disruption and sexual dysfunction research with alligators at Lake Apopka, FL. Broadly, Melissa is investigating endocrine disruption in the American alligator during embryonic development. She is focusing on the activation of a specific receptor, PPARγ, and its role in development and sex determination. To do that, she is using tributyltin (TBT), a chemical found in the environment primarily through its previous use in antifouling paints on boat hulls. Although its use has been banned in most developed countries, it is still present in the water column and sediments. A major negative impact associated with exposure is the imposex condition observed in many marine gastropods. Recently, it has been identified as an obesogen, an endocrine disrupting contaminant that induces adipogenesis. Melissa is exposing alligator eggs to TBT prior to sex determination to investigate the effects on sex determination as well as its obesogenic potential using histology, qPCR gene expression profiles, and transactivation luciferase assays.

**Makayla Boyd (’13)**

Makayla was awarded a Copper Chambliss Student Academic Achievement Award in Spring 2013 for her independent research project on methods of bird feeder hygiene that was supervised by Dr. Todd Underwood in collaboration with Dr. Dan Aruscavage. Makayla studied the frequency of cleaning of bird feeders by the public and the effectiveness of a particular cleaning method. She found that most birdwatchers cleaned their feeders fewer than four times per year, and that 20% of respondents never cleaned their feeders. In her feeder cleaning experiment, Makayla found that feeders cleaned with bleach wipes every two weeks had similar levels of bacteria and fungi to control feeders that were never cleaned. Overall, the bacteria and fungi on cleaned and control feeders never reached the pathogenic levels necessary to spread disease, suggesting that a cleaning interval of two weeks is sufficient. Her results have identified that the public needs to be persuaded to clean their feeders more often, but may not need to clean them as often as currently recommended. She presented the results of her
research at two different conferences; the Commonwealth of Pennsylvania University Biologists meeting at Slippery Rock University in April 2012 and the Wilson Ornithological Society conference in March 2013. A manuscript based on her feeder cleaning experiment is currently in review for publication. In September 2013, Makayla began a Master's Entry to Nursing Practice Program at DePaul University in Chicago, IL. In her recent visit to KU, she indicated that her independent research project has prepared her very well for the research component of her master’s program. Makayla’s career goal is to become a nurse practitioner.

**Jordan Kemfort ('13)**

Jordan was another student in the Biology Department that received a Copper Medal Chambliss Student Academic Achievement Award in Spring 2013. He was selected, in part, for his research on orientation behavior of honey bees. Most notably, Jordan was a co-author on two journal articles based on research he performed with Dr. Will Towne while at KU (see above list of publications). In addition to research, Jordan was the campus coordinator of the "Take Back the Tap" campaign on water usage. He also worked as a Genetics tutor and volunteered for several campus and community organizations, including Hawk Mountain Sanctuary, the Schuylkill Rehabilitation Center, and the Biology Department’s Peer Mentoring Program (see below). In January 2014, Jordan will be entering a M.S. program in Animal Behavior at Bucknell University.

**Biology Mentoring Program:**

The Biology Peer Mentoring Program is designed to help freshmen and transfer students in the Biology Department succeed academically, socially, and personally during their transition to Kutztown University. This Fall, program participants were involved in activities that included “get acquainted” pizza gatherings and a movie night. The peer mentors volunteered at an information booth in the lobby of Boehm in order to help new students with questions regarding the registration process. Several mentors also volunteered in the Biology Department’s Shadowing Program, a program that is designed to provide high school students a better understanding of what it is like to attend KU. One of the high school seniors who participated wrote, “Being able to sit in on a lecture really helped me because I had no idea what to expect and now I feel much more prepared! It also helped me feel more comfortable about the entire college situation.” The Kutztown Biology Mentoring Program Facebook page was initiated this Fall and will be updated with events and activities that both mentors and mentees can take part in each semester. The Biology peer mentors are a dedicated group of students whose willingness to help out is well appreciated!
More Student & Alumni News:

**Megan Centeno** (‘12), who is in a RN program at Reading Hospital, was recently accepted into an Intraoperative Nursing Internship Program. She is one of 8 accepted interns who met all the eligibility criteria and passed an interview process. The internship consists of one 8 hour clinical every other week Jan-Jul.

**Linday Confer** (‘11) is currently getting her Master’s in Public Health at PSU Hershey.

**Robert Conrow** (‘13) was presented with the 2013 Outstanding Student Entomologist Award by the Entomological Society of Pennsylvania at the society's annual meeting on Oct 25th. Robert gave a presentation at the meeting on his research with Dr. Gregory Setliff on the cuckoo wasps of Pennsylvania. This was a special honor for Robert as the award is usually reserved for graduate students.

**Ashley Curatola** (‘13) is pursuing a M.S. in Microbiology and Immunology at Drexel University College of Medicine.

**Becca Eckert** (‘09) recently completed her M.S. in Wildlife & Fisheries Science and is currently teaching at Lehigh Carbon Community College. She plans to pursue a Ph.D. in the field of stream ecology. Becca recently gave a seminar at KU entitled, “KU and Beyond: A Tale of Bugs and Slime.”

**Heather Geist** (‘13) was invited to participate in Geisinger Medical Center’s summer 2013 education program at their Genomics Medicine Institute. She was recently accepted into an accelerated nursing program at DeSales University.

**Nick Hosford** (‘10) is currently working for Coordinated Health in Allentown, PA. He began there as a Medical Technician, but he is currently transitioning to Information System Manager.

**Angela Kessler** (‘09) has been a Histocompatibility Technologist for 4 years at Lehigh Valley Hospital in Allentown, PA. She performs HLA testing for kidney transplantation using cell, antibody, and DNA based assays.

**Kristin Koroncai** (‘13) is pursuing a M.S. in Environmental Science at the University of West Florida. She is researching the impacts of water quality on seagrass.

**Kelly Moser** (‘11) is currently in an account executive position for a mobile recruitment technology company, iMomentous, in Horsham, PA.

**Leah Neiderer** (‘11) is currently in a Public Health Master’s Program in conjunction with the Peace Corps.

**Sean Robinson** (‘98), a teacher at Morris Hills High School, Rockaway, NJ, was recently selected as one of the most influential teachers under 40 years of age. A short summary of his accomplishments can be found [here](#).

**Meredith Starr** (‘11) worked for two years in Washington D.C. as a medical assistant at an OB/GYN practice. She recently started medical school at Philadelphia College of Osteopathic Medicine (PCOM).

**Kaitlyn Strausser** (‘11) is currently in her last year of Physician Assistant School at DeSales University.
Henry Swartz (‘11) earned a M.S. in Biomedical Sciences at PCOM. Since then was accepted into their Doctor of Osteopathic Medicine Class of 2017.

Nicholas Vallillo (‘12) is employed as a laboratory technician at Arm & Hammer’s R&D program in Princeton, NJ.

Don Hanson presented “Morphed: The Transformation of Whales from Four-legged Land Dwellers to Today’s Marine Giants” by Jonathan Brannan (Economics)

On October 29, 2013, Don Hanson, a retired teacher from New Jersey, spoke at Kutztown University about his expertise on whale evolution. Through Mr. Hanson’s many trips around the world in search of fossil evidence, he has gained a wealth of knowledge about whale evolution. At his seminar, Mr. Hanson brought in numerous casts of prehistoric whale fossils that showed how whales have evolved over millions of years from their four-legged land-dwelling ancestors. Mr. Hanson’s seminar was well attended. Students were inspired by Mr. Hanson’s passion for the study of whale evolution. When asked about her thoughts on the seminar KU sophomore Samantha Slater said, “It was inspiring to hear how passionate he was about the evolution of these whales.”

Support Excellence in the Biology Department

We are seeking support for the Biology Department’s undergraduate research fund. This program provides direct financial support for undergraduate research projects in the department. This program is critical to the success of our students by providing our high-caliber students with valuable research experiences. If you would like to provide a donation to support this program, mail your donation to the Kutztown University Foundation at the address provided below. Checks should be made out to the KU Foundation. To specify this particular fund, include the coupon (below) with your payment.

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Stay in Touch

Recently married, had a child, or landed a new job? Let us know! We are interested in how alumni are doing. Please drop us a line and update us on your activities.

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If you have a contribution for The Leaflet or if you have any questions or comments about its content please send them directly to Dr. Matt Stone (stone@kutztown.edu)