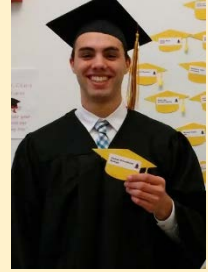
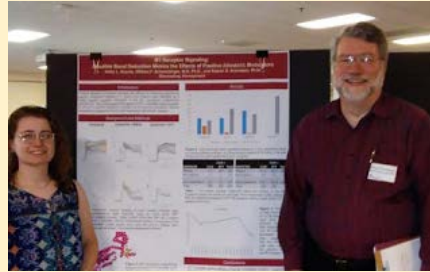
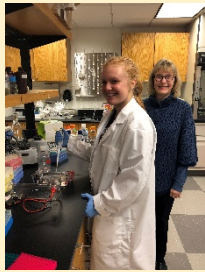


DEPARTMENT OF BIOLOGICAL AND ALLIED HEALTH SCIENCES

ANNUAL REPORT

2017



# Bloomsburg University of Pennsylvania

## Biological and Allied Health Sciences

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#### Support BAHS:

<https://giving.bloomu.edu/biology>

# Department of Biological and Allied Health Sciences

## Chairperson Remarks

Angela R. Hess



This annual report highlights many of the accomplishments of our faculty and students during 2017. We had a very exciting year and I am delighted to share with you all that has been happening. Please feel free to contact me – [ahess2@bloomu.edu](mailto:ahess2@bloomu.edu) for more details. I am always happy to talk with you about our programs, our faculty, and the success of our students.

### Vision Statement –

The Department of Biological and Allied Health Sciences aspires to:

- provide broad-based and contemporary curricula in biological and allied health sciences, preparing undergraduate and graduate students for related careers and advanced study. The curricula facilitate integration of scientific knowledge, concepts, skills, and practical applications; and cultivation of student capabilities in critical thinking and problem solving.
- foster a collaborative learning and research environment.
- offer all undergraduate students opportunities to incorporate an understanding of biological concepts and information into their general education in such a way as to contribute to their success in a diverse and rapidly changing world.

### Degree Programs –

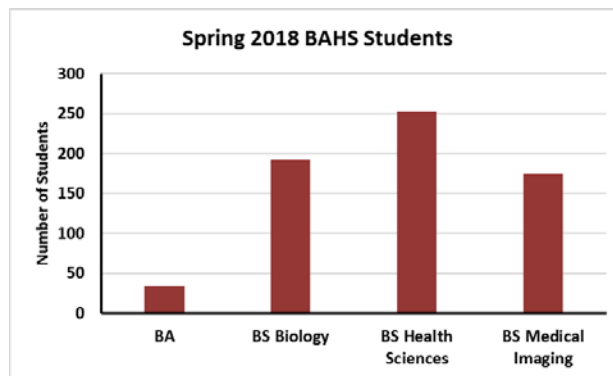
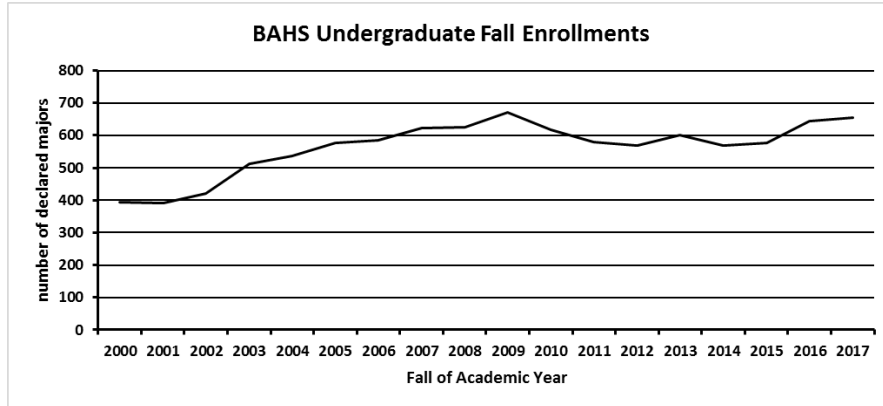
We offer five degree programs, encompassing a total of 14 different undergraduate and one graduate program of study, as well as a Certificate in Medical Genomics and Counseling:

BS Medical Imaging	BS Health Sciences
BS Biology	General
Environmental Biology	Medical Genomics and Counseling
Molecular Biology	Medical Laboratory Science
Pre-Medical Sciences	Pre-Accelerated 2 <sup>nd</sup> Degree Nursing
BA Biology	Pre-Pharmacy
Natural History	Pre-Physical Therapy
MS Biology	Pre-Physician Assistant

We recently launched an accelerated Master's degree program. This program, designed to be completed in five years will allow graduates to earn both a Bachelor's and Master's degree. This is an exciting opportunity for biology majors. A seamless progression of coursework that awards two degrees in just five years is extremely attractive to the best students. This option affords these students the opportunity to pursue graduate level work early in their academic career, allowing them to enter the job market with credentials much higher than graduates entering the workforce with just a Bachelor's degree. This option makes it more likely for our students to secure positions and advance their careers.

## Enrollment –

The number of declared BAHS undergraduate majors has experienced a steady increase since fall 2014. This growth is attributed to several things including an increase in incoming freshman and transfer students, as well as an increasing number of internal transfer students. We are excited to see our program grow and look forward to steady increases in the future.



## Departmental Seminar Series –

Under the direction of Dr. Thomas Klinger, the department launched a regular seminar series. Seminars are offered nearly every Friday afternoon through the fall 2017 and spring 2018 semesters. Speakers include BAHS faculty, BAHS graduate students, and invited speakers. The seminar series is well attended by faculty and students and promotes a culture of academia within the department.

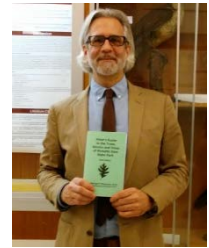
## Welcome new faculty!

In 2017 we welcomed three new full-time tenure-track faculty to our department! Dr. Kate Beishline earned her B.S. from the University of Sciences in Philadelphia and her PhD in Biochemistry from Drexel University College of Medicine. Her area of expertise is the Molecular Biology of Cancer and Aging. She studies the dynamics and maintenance of mammalian telomeres and how these pathways are important in cancer and aging. She is currently teaching Anatomy and Physiology I, Cell Biology, and Concepts in Biology 1 labs. Dr. Lauri Green earned both her B.S. and PhD from the University of California, Los Angeles. Her research interests focus on nutrient-algal interactions on trophic dynamics in estuarine habitats. Her research investigates both the effects of nutrient enrichment on food webs and the

management practices that reduce eutrophication. She is currently teaching Biodiversity and Conservation, Concepts in Biology 1 Lab I and Concepts in Biology 2 Lab. Dr. Abby Hare-Harris earned her B.S. in Biochemistry and Molecular Biology with a minor in Biostatistics at Ursinus College and her Ph.D. in Microbiology and Molecular Genetics from Rutgers University. Her area of expertise is Human and Molecular Genetics with a focus on neuropsychiatric disorders. Her research focuses on the identification and phenotypic characterization of rare genetic variants in individuals with neuropsychiatric disorders. She uses large genomic datasets that are linked to electronic health record data to assess the clinical effect of these genetic variants. She is currently teaching Anatomy and Physiology I and Concepts in Biology I labs, Bioinformatics, and developing a new course in Medical Genetics to be offered spring 2018. We are happy to have these wonderful women join our outstanding faculty.

**Thank you Dr. Chamuris –**

We experienced a change in leadership after Dr. Chamuris' long tenure as chairperson of the Department of Biological and Allied Health Sciences. Under his leadership we experienced steady growth in both student enrollment and faculty complements. During this period of time our department expanded its programs, course offerings and aligned itself with a continually changing global job market. We greatly appreciate his hard work and dedication to our department and thank him for his service.





Joseph P. Ardizzi  
Associate Professor

Ph.D. Cornell University  
Genetics

### **Teaching**

Genetics, Cell Biology laboratories, Writing in Biology, Freshman Seminar

### **Research Interests**

I have worked on and am interested in the role of microtubules and related structures in meiosis and ascospore development in the fungus *Neurospora*, the genetic components of sexual phase development in this fungus, and the effects of mitotic and actin-myosin inhibitors on ascus development.

### **Service Activities**

My most significant activities and contributions over this past year involve my work as Co-Chair of the Pre-Professional Student Advisory Committee, an interdepartmental group of advisors who work closely with students preparing for admission into the medical, dental, veterinary, optometry, and chiropractic professions. In fall 2017, we introduced our newer students to the roles of the Pre-Professional Advisory Committee in their career development and gave them advice and background on what is expected for pre-medical science students. I am also advisor for the Pre-Medical Sciences Club. This club coordinates visits from professional school admissions personnel, informational presentations by medical professionals, and outreach efforts to undergraduates interested in the medical sciences. I am grateful to all the officers for their work in assuring the success of the Club's mission.

### **Focus on Students**

We have continued to enjoy the success of our students. Several of our current applicants have had early interviews, and we hope and wish for our students' continued success. I and the other members of the Pre-Professional Student Advisory Committee are pleased that our students have achieved an overall 90% acceptance rate for the period 1997 to 2017.



Kate A. Beishline  
Assistant Professor

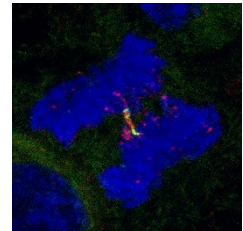
Ph.D. Drexel University College of Medicine  
Biochemistry

### Teaching

Concepts in Biology I (Bio114) Laboratory  
Cell Biology (Bio271) Laboratory

### Research Interests

My current research interests our focusing on pathways which regulate the transcription and replication of eukaryotic telomeres. More specifically I am focused on the mechanism by which the genome binding factor CTCF, and its only paralog BORIS are participating in the maintenance of telomere structures and how these functions may be important in cancer and normal cellular aging. I am currently working on setting up my lab space to work with my new undergraduate/graduate student for spring of 2018.



### Publications

Beishline K, Vladimirova O, Tutton S, Wang Z, Lieberman PM. CTCF Driven TERRA Transcription Facilitates Completion of Telomere DNA Replication. *Nat Commun.* 2017 Dec 13; 8(1): 2114.  
Torabi B, Flashner, S, Beishline K, Sowash A, Donovan K, Bassett G, Azizkhan-Clifford J. "Caspase cleavage of transcription factor Sp1 enhances apoptosis in response to DNA damage." 2018 Jan;23 (1):65-78.

### Presentations

Beishline K. Guardian of the Telomere: An unusual role for the ultimate genome regulator. Biological and Allied Health Sciences Seminar Series. Bloomsburg University. Bloomsburg, PA. September 2017.  
Beishline K. CTCF Driven TERRA Transcription Facilitates Completion of Telomere DNA Replication. PGIG Seminar Series. University of Pennsylvania. Philadelphia, PA. April 2017.  
Beishline K. CTCF Dependent Regulation of Telomere Maintenance Pathways and Regulation of Telomere Replication through TERRA Transcription. Wistar Research in Progress Seminar Series. Wistar Institute. Philadelphia, PA. March 2017.

### Funding

NRSA post-doctoral training grant, T32 CA09171, Research Training Support, June 2014- June 2017

### Service Activities

- BAHS Awards and Activities Committee
- BAHS Equipment and Facilities Committee
- BAHS Planning and Assessment Committee
- BAHS Webpage Design Taskforce
- COST Career Day
- Career Connections Expo
- Tri-Beta Mock Interview Event
- APSCUF Coffee Night Student Finals Event



Kristen D. Brubaker  
Associate Professor

Ph.D. Pennsylvania State University  
Molecular & Cell Biology

**Teaching**

Cell Biology lecture and laboratories; Molecular Biology laboratory; Immunology; Animal Cell Physiology and Cells, Genes & Molecules

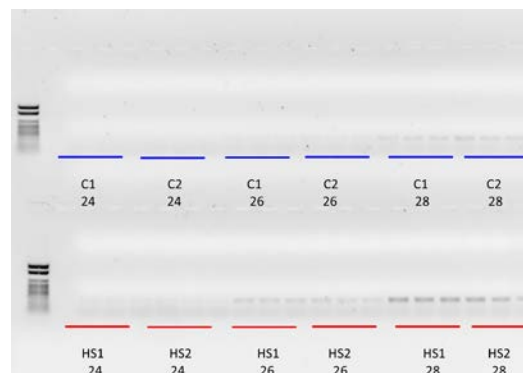
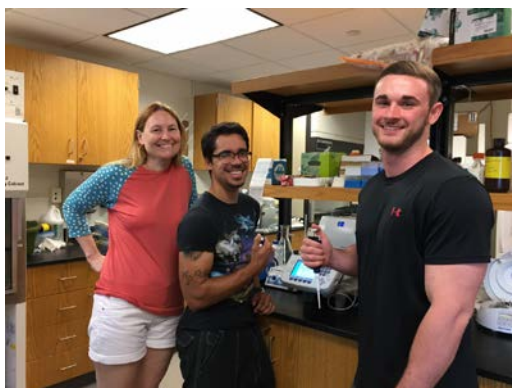
**Research Interests**

My research interests lie in the regulation of the stress response in bees. I have been studying transcription factors that aid in the survival of invasive bees in conditions where honey bees would normally not survive. Students working under my supervisions have cloned, sequenced and characterized expression of factors linked to stress response and survival, *daf-16*, *hsf-1*, and *nrf2* in *Megachile rotundata*, a solitary thermotolerant bee. This past summer we also looked at expression of a hypoxia related factor, *hif1 $\alpha$* , in response to heat stress. Recently, I have started a collaboration with Dr. John Hranitz to verify changes in genes linked to stress, behavior and metabolism in honey bees in response to ethanol.

In 2016, I applied for a year long sabbatical to specifically study stress response factors in prostate cancer cell lines and patient tissue samples. I received a Spring/Fall 2018 sabbatical and will be working on the ethanol study in the first half of my sabbatical; and studying prostate cancer in the second half at the University of Washington with my former post-doctoral fellowship colleagues.

**Service Activities**

COST Career Day- Biology/Allied Health Sciences Contact



Amplification of cDNA from heat shocked and control bees (*Megachile rotundata*) with primers targeting a portion of the heat shock factor 1 gene. The data show that HSF-1 mRNA levels were increased upon heat shock (C= control; HS= heat shock).



George P. Chamuris  
Professor

Ph.D. SUNY College of Environmental Science and Forestry  
Environmental and Forest Biology

**Teaching**

Dendrology, Comparative Biology of Plants, Human Genetics, Evolution, Human Evolutionary Genetics

**Research Interests**

Bark Ecology, Botany, Environmental Education

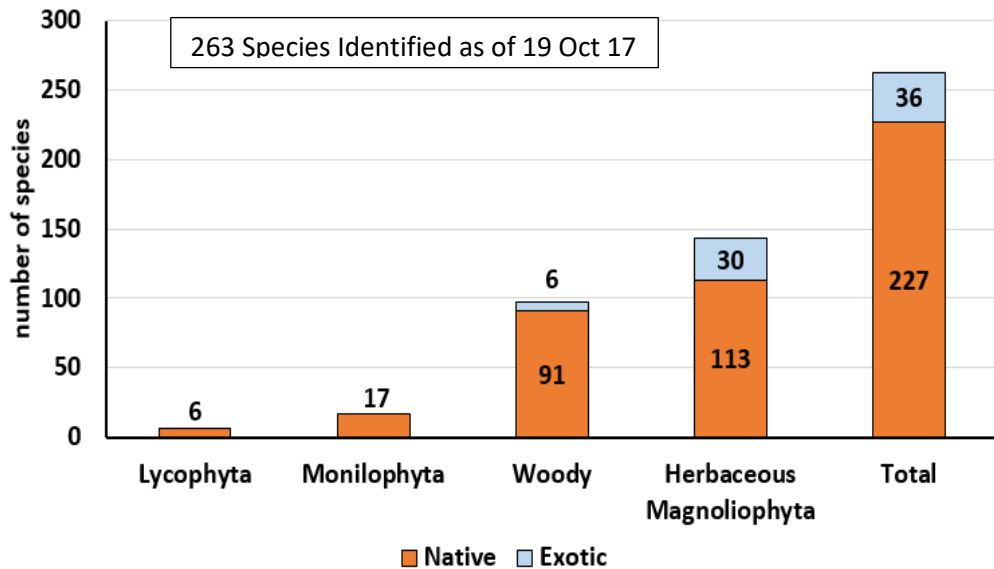
During 2017 three main projects were considered:

- Revision of *Hiker’s Guide to the Trees, Shrubs and Vines of Ricketts Glen State Park*, 6<sup>th</sup> Edition published in 2018.
- Organization and compilation of nearly 30 years of research, in collaboration with BU undergraduate and graduate students as well as faculty on various aspects of bark ecology, is in progress. The plan is to prepare either a review article or a small book on the subject.
- Work on the *Flora of Ricketts Glen* project continued. A full-color hiker’s guide to the ferns, club-mosses, conifers, woody and herbaceous flowering plants is being drafted. I will be exploring publishing options for this book during 2018. Some summary statistics through October 2017 are provided below.

More information can be found at [http://department.bloomu.edu/biology/ricketts/flora\\_index.html](http://department.bloomu.edu/biology/ricketts/flora_index.html)

- In 2018 a related, long-term project will begin. Seizing an opportunity after learning that Mountain Springs Lake was drained in August 2017, I am establishing a study of secondary succession in the lake bed. I am currently seeking prospective research students to contribute to this study.

**Vascular Plants at Ricketts Glen State Park  
(Excluding Grasses and Sedges)**



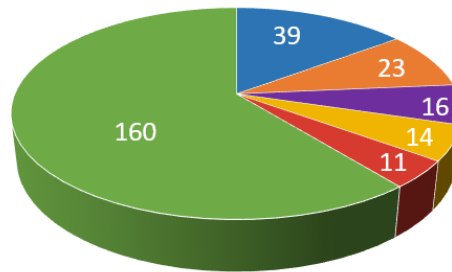
### Families Represented by Five or More Species

<u>Family</u>		<u>number of species</u>
Asteraceae	Aster Family	39
Rosaceae	Rose Family	23
Ericaceae	Heath Family	16
Polypodiaceae s.l.	Fern Family	14
Ranunculaceae	Buttercup Family	11
Fabaceae	Pea Family	9
Fagaceae	Beech Family	9
Violaceae	Violet Family	8
Pinaceae	Pine Family	8
Lycopodiaceae	Clubmoss Family	6
Lamiaceae	Mint Family	6
Liliaceae	Lily Family	5
Salicaceae	Willow Family	5
Betulaceae	Birch Family	5
Adoxaceae	Muskroot Family	5

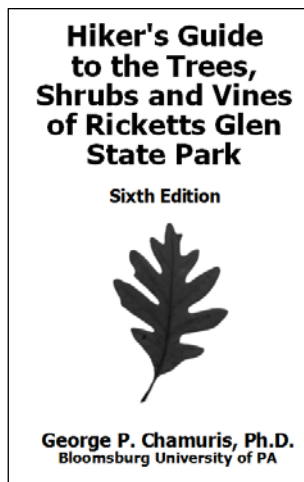
52 Families are represented by 1 - 4 species.

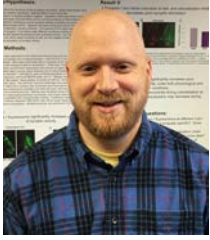
67 Total Families + Poaceae + Cyperaceae = 69 total

### Number of Species by Family



- Asteraceae
- Rosaceae
- Ericaceae
- Polypodiaceae s.l.
- Ranunculaceae
- 62 Families (<10 spp.)





William L. Coleman  
Associate Professor

Ph.D. Lehigh University  
Molecular Biology

### **Teaching**

Neurophysiology for the Audiologist, Neurophysiology, Integrated Physiology Laboratory, Anatomy and Physiology 2 Lecture and Laboratory, Human Physiology, Internship in Biology / Allied Health Science

### **Research Interests**

Synaptic Physiology, Molecular Regulation of Cellular Secretion

### **Publications:**

*Book Chapter:*

**Coleman WL** and Burger RM. Extracellular Single-Unit Recording and Neuropharmacological Methods. Basic Electrophysiological Methods. 2015; 53-75 (Editors: Covey E and Carter M, Oxford University Press).

*Journal article:*

**Coleman WL**, Kulp AC, Venditti JJ. Functional distribution of synapsin I in human sperm. FEBS Open Bio. 2015 Oct; 5: 801-808.

### **Conference Abstracts/Presentations:**

Jeffreys K and **Coleman WL**. "Investigation of GABAergic signaling on vesicle pool dynamics at the earthworm neuromuscular synapse." Bloomsburg University COST Research Day, Spring 2017.

Chamberlin LL, Venditti JJ, and **Coleman WL**. "Investigating the presence of synapsin III in human sperm cells." Bloomsburg University COST Research Day, Spring 2017.

Knepley KD and **Coleman WL**. "Distribution of and colocalization of synapsin I, II, and III, and rab3a within the earthworm nervous system." Susquehanna Valley Undergraduate Research Symposium abstract, 2016.

Bartra SK, **Coleman WL**, and Venditti JJ. "Investigating the role of synapsin I during human sperm capacitation and acrosome reaction." Bloomsburg University COST Research Day, Spring 2016, and Susquehanna Valley Undergraduate Research Symposium abstract, 2016.

Willis JM and **Coleman WL**. "Investigation of the colocalization of synaptotagmin I and synapsin I in the mouse neuromuscular junction." Commonwealth of Pennsylvania University Biologists abstract, 2015.

Kulp AC, **Coleman WL**, and Venditti JJ. "Synapsin I is enriched at the equatorial segment of capacitated human sperm." Tri-Beta Abstract, District 2 Annual Meeting, 2015.

Willis JM and **Coleman WL**. "Evaluation of the calcium dependence of synapsin I in the mouse diaphragm neuromuscular junction." Tri-Beta Abstract, District 2 Annual Meeting, 2015.



Clay E. Corbin  
Professor

Ph.D. Ohio University  
Biology

### Teaching

Comparative Vertebrate Anatomy, Concepts in Biology 1, Field Zoology, Vertebrate Zoology, Vertebrate Histology, Anatomy and Physiology laboratories, Biodiversity and Conservation

### Research Interests

Evolutionary Ecology, Foraging Ecology, Functional Anatomy

In 2017, Dr. Corbin continued his student based research program by mentoring Masters and Undergraduate students in projects ranging from functional anatomy of tadpoles, to bird populations and West Nile virus, to insects and restoration ecology.

### Publications / Presentations

- Tucker Serniak L, Corbin CE, Pitt AL, Rier ST. 2017. Effects of Japanese Knotweed on avian diversity and function in riparian habitats. *Journal of Ornithology* 158:311-321.
- In Review: Serniak, Corbin, Pitt and Rier. Invasive species influence evolutionary relationships: A case study of Japanese Knotweed and North American birds. *Functional Ecology*.
- In Press: Bright, Sustaita, Olsen, Corbin, Gussekloo, Rico-Guevara. Feeding in Birds. In Bels, V. et al (eds) *Feeding in Vertebrates*. Springer Verlag.



Beginning Birding Mini-Course offered at BU



Marine Ecology at the Chincoteague Bay Field Station



George T. Davis  
Associate Professor

Ph.D. University of Illinois at Champaign-Urbana  
Plant Molecular Biology

### Teaching

Cells, Genes, and Molecules; Ecology and Evolution; Molecular Biology; Bioinformatics

### Research Interests

Genetic engineering of crop species with the goal of increased crop yield and nutrition.

The Davis lab has identified and functionally confirmed an iron transporter from oats (*Avena*). This transporter is the basis for the development of a means of delivering growth effector molecules with specificity to a target species and may allow the development companion planting strategies to reduce the environmental impact associated with conventional agriculture. Using molecular methods, we are modifying the transporter through mutagenesis to alter its structure, function, and specificity to increase the variety of molecules recognized and taken up. We are also evaluating its ability to take up other molecules and cations

In 2017, Dr. Davis continued his student based research program by mentoring one Undergraduate Independent Study Student (Jerome Betz). We have identified a region of an iron transporter protein isolated from oats (*Avena*) that contributes to the specificity of iron uptake and its cognate carrier (avenic acid) and have mutagenized this region. This may allow us to identify amino acids that are critical to the recognition and transport process. We have also evaluated the ability of the transporter protein and identified an analog of avenic acid that is taken up efficiently by the transporter. This expands the repertoire of transporters in furtherance of the main focus of the Davis lab, namely the use of this iron uptake strategy to develop a targeted delivery system of growth effector molecules to appropriately engineered crop species and allow improved planting strategies to increase yield and reduce environmental impact. I have also submitted an application for a provisional patent proposing a technology to improve the effectiveness iron uptake using an engineered companion planting strategy.

### Awards

- Provisional patent awarded April, 2016, converted to full protection April 2017, for invention: “A ‘Trojan Horse’ Targeted Delivery System for Crop Species”.
- Bloomsburg University Mini-grant  
Project Title: Continued Development and Evaluation of a "Trojan Horse" Targeted Nutrient Delivery System for Crop Species. Fall 2017. \$3400

Functional confirmation of the AvsYS1 protein’s iron uptake ability: Oats transformed with the AvsYS1 transporter gene and non-transformants grown under Fe<sup>+3</sup> limiting conditions supplemented with avenic acid. The top plant contains the AvsYS1 gene, the lower plant is an untransformed control. Plants were grown hydroponically. Photo taken at 16 days transplanting. The transgenic is healthy, while the untransformed plant shows symptoms of iron deficiency.





**Lauri Green**  
Assistant Professor

Ph.D. University of California, Los Angeles

**Teaching**

Biodiversity and Conservation  
Concepts in Biology I (laboratory)  
Concepts in Biology II (laboratory)

**Research Interests**

My work focuses on quantifying the effects of eutrophication and applying models to reduce nutrient loads into aquatic ecosystems.

**Publications**

- Calle, L., **Green, L.**, Strong, A., Gawlik, D. 2017 Time-integrated habitat availability is a resource attribute that informs patterns of use in intertidal areas. *Ecological Monographs* (Accepted with revision).
- Calle, L., Gawlik, D., Xie, Z., **Green, L.**, Lapointe, B., Strong, A. 2016 Tidal periodicities and foraging time-constraints give insight into mechanisms driving a wading bird numerical response to changes in habitat. *The Auk*. 133(3): 378-396
- Green, L.**, Fong, P. 2015 The good, the bad and the *Ulva*: The density dependent role of macroalgal subsidies in influencing diversity and trophic structure of an estuarine community. *Oikos*. 125: 988-1000. DOI: 10.1111/oik.02860
- Green, L.**, Gawlik, D., Lapointe, B., Calle, L. 2015 Relative effects of physical and small-scale factors on the distribution of tropical seagrasses in the Great White Heron National Wildlife Refuge, Lower Florida Keys. *Aquatic Botany*. 124: 45-53
- Green, L.**, Lapointe, B., Gawlik, D. 2015 Winter nutrient pulse and seagrass epiphyte bloom: Evidence of anthropogenic enrichment or natural fluctuations in the Lower Florida Keys? *Estuaries and Coasts*. 8(6): 1854-1871. DOI: 10.1007/s12237-015-9940-8
- Green, L.**, Fong, P. 2015 A small-scale test of the species-energy hypothesis in a southern California estuary. *Journal of Experimental Marine Biology and Ecology*. 464: 35-43. DOI: 10.1016/j.jembe.2014.12.012

**Presentations**

- Can a model transferability framework improve ecosystem service estimates? A case study of Soil forest carbon sequestration in Tillamook Bay, OR, USA. A Community on Ecosystem Services Conference, Jacksonville, FL. December 5-9. 2016
- Opening the black box: Evaluation of nonpoint source management of nutrients into estuarine watersheds. Coastal Estuarine Research Federation Conference, Portland, OR. November 8-12. 2015

**Funding**

Oak Ridge Institute for Science and Education, Developing a Transferability Framework for Ecosystem Service Models, 1/1/2015-6/23/2017, \$172,800

**2017 Service Activities** Curriculum Committee, Graduate Committee, Tri-Beta Honors Society mock interviews, Thesis Committee for Emily Ashberry, Improving the representation of minorities in marine sciences for the Coastal Estuarine Research Federation.



Carl Hansen  
Professor

Ph.D. Penn State Hershey  
Physiology

**Teaching**

On Sabbatical, Fall 2017 - Spring 2018  
Dept. Biomedical Sciences  
Charles E. Schmidt College of Medicine  
Florida Atlantic University  
Boca Raton, FL 33431

**Research Interests**

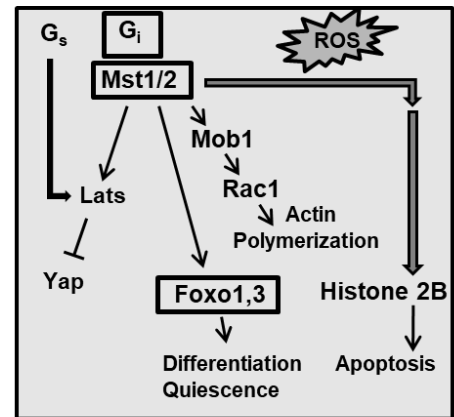
G Protein Signaling, Gene Variants and Human Disease

Heterotrimeric G protein (G- $\alpha\beta\gamma$ ) coordinate and control the coupling between G Protein Coupled Receptors (GPCRs) and numerous intracellular signaling pathways. The delineation of the G- $\alpha\beta\gamma$  associated with a specific GPCR signaling pathways is complicated by the heterogeneity of G- $\alpha$ ,  $\beta$ ,  $\gamma$  subunit genes, which creates the potential to generate several hundred different G- $\alpha\beta\gamma$  heterotrimers. The challenge has been to identify which G- $\alpha\beta\gamma$  heterotrimers actually exist *in vivo* and to establish their biological functions and cellular roles in specifying receptor activation of downstream signaling pathways.

Gene targeting in mice represents a powerful method for exploring these questions in a native system. Genetically engineered mice lacking the heterotrimeric G protein subunit  $\gamma_{11}$  (*Gng11*<sup>-/-</sup>) display a phenotype of unusual tumors for mice, including lymphomas, hemangiomas, and angiosarcomas. These tumors were not observed in wild-type littermates. This suggested that G- $\gamma_{11}$  protein-mediated signaling might function as a tumor suppressor pathway. Moreover, because these tumor cell lineages originate from a common hemangioblast precursor, this prompted us to look for a potential vascular phenotype.

Under hypoxic stress, vascular endothelial cells leave their quiescent state and enter a proliferative angiogenic phase resulting in the production of new blood vessels followed by subsequent return to the quiescent state. Associated with the transition from the proliferative state back to the quiescent state is an increased expression of G- $\alpha_{11}$ . This suggests that the induced G- $\alpha_{11}$  signaling pathway acts as a “brake” to terminate the proliferative phase of the angiogenic process. Using the Mouse Model of Retinopathy, retinas from *Gng11*<sup>-/-</sup> mice display a highly abnormal morphology characterized by tortuosity of vessels, excessive branching, and increased leakage (neo-vascularization). Endothelial cells isolated from *Gng11*<sup>-/-</sup> mice display abnormal cell cycle features, being able to more rapidly enter the proliferative phase and are slower at reentering the quiescent phase.

Current studies are focused on understanding the signaling pathways involved in endothelial cell activation and how loss of the G- $\gamma_{11}$  subunit disrupts regulation of the cell cycle in endothelial cells. Our working models is shown to the right (Fig 12).



**Fig. 12. Working model of the role of G- $\alpha\beta\gamma_{11}$  in promoting cell cycle exit.** The boxes (  $\square$  ) indicate genes up-regulated by oxidative stress and may act together to form a common signaling pathway.



Abby Hare-Harris  
Assistant Professor

Ph.D. Rutgers University  
Microbiology and Molecular Genetics

### **Teaching**

Concepts in Biology I (laboratory)  
Anatomy and Physiology I (laboratory)

### **Research Interests**

Genetics of Neurodevelopmental Disorders, Human Genetics, Bioinformatics

### **Presentations**

Abby Hare-Harris, Characterization of the 16p11.2 Deletion Phenotype. BAHS Departmental Seminar, Bloomsburg University, December 1, 2017

Abby Hare-Harris, Genetic Variants and Human Diseases. Human Genetics Guest Lecture, Bloomsburg University, October 31, 2017

Abby Hare-Harris, Careers in Genomics. Professionals Seminar Series, Bloomsburg University, October 25, 2017.

Abby Hare-Harris, Genetics Is The Spice Of Life. Tri Beta Induction Ceremony, Bloomsburg University, October 22, 2017

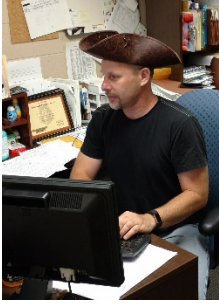
### **Funding**

Bloomsburg University COST Faculty Scholarly Activity Award, Start-up Funding, December 2017, \$11,000

Faculty and Professional Development Travel Award, Conference Travel, November 2017, \$1,600

### **Service Activities**

Allied Health Committee, Classroom Observation Subcommittee, Equipment and Facilities Committee, Planning and Assessment Committee, Sabbatical Committee, Tri Beta Mock Interviews, Academic Advisement Majors, Minors, & Career Pathway Options Fair, COST Health Sciences Career Panel, APSCUF Coffee Nights, LGBTQA Ally



Karl W. Henry, Jr.  
Assistant Professor

Ph.D. Medical College of Pennsylvania and Hahnemann  
University Microbiology and Immunology

**Teaching**

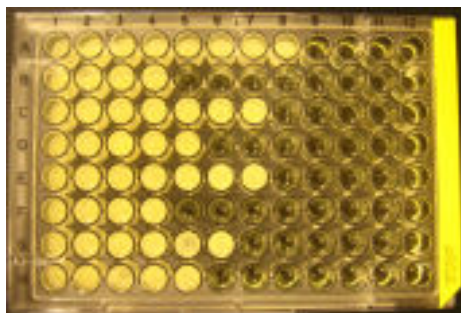
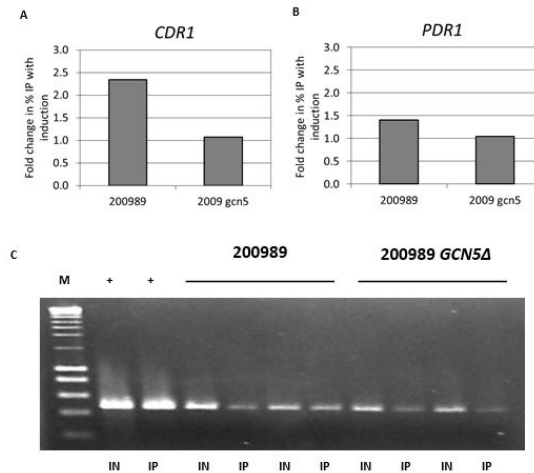
Introductory Microbiology, Medical Parasitology, Medical Microbiology, Microbiology Laboratories

**Research Interests**

Regulation of multidrug resistance genes in *Candida* species and *Saccharomyces cerevisiae*.  
Antimicrobial activity of metabolites from the oyster mushroom *Pleurotus ostreatus*.

Ghaith Ibrahim, MS candidate, completed his thesis “Role of Cgc5, a putative histone acetyltransferase, on antifungal susceptibility and multidrug resistance gene regulation in *Candida glabrata*” in December 2017.

Deletion of the gene encoding the putative histone acetyltransferase Gcn5 results in decreased acetylation of the *CDR1* promoter (A and C) which corresponds to a decrease in the expression of the gene encoding this MDR efflux pump. The loss of Gcn5 did not significantly affect the acetylation of the *PDR1* promoter (B) (encoding the transcription factor that regulates *CDR1* expression).



In the summer of 2017, Dr. Henry collaborated with the owners of Greenwood Farm to evaluate the antimicrobial activity of metabolites produced by the oyster mushroom *Pleurotus ostreatus*. Initial results show that these metabolites are capable of inhibiting the growth of several bacteria and other fungal species *in vitro*. Further studies into the spectrum of activity are planned for the 2018. If these results reveal broad spectrum antimicrobial activity, the isolation and chemical characterization of the active compound will be attempted.



Angela R. Hess  
Associate Professor and Department Chairperson

Ph.D. University of Iowa  
Anatomy and Cell Biology  
Focus: Molecular Medicine

### **Teaching**

Anatomy and Physiology I and II lecture and laboratories, Introduction to Nutrition, Medical Terminology, Cancer Biology.

### **Research Interests**

My lab explores the molecular mechanisms that promote melanoma development and progression to a metastatic phenotype. I focus specifically on the receptor tyrosine kinase, EphA2, whose expression is increased in highly aggressive melanomas. Studies from my lab have demonstrated that EphA2 expression plays a role in melanoma tumor cell proliferation, invasion, migration, and the plastic phenotype as evident in the ability to engage in vasculogenic mimicry.

Students engaged in research projects over the last year: Emily Broadbent, Torrey Brubaker, Rachel McDonald, and Claire Pressimone (undergraduates). Rebecca Price and Stephanie Buczkowski (graduate students).

### **Funding**

2018: R&S mini grant - Elucidating the molecular mechanisms for increased EphA2 expression in melanoma  
2017: CPUB student research grant to Stephanie Buczkowski  
2017: R&S mini grant – Adoption of a mouse model to study malignant melanoma.  
2016: Acquisition of a Zeiss Laser Scanning Confocal Microscope to advance research and enhance academic excellence at Bloomsburg University. Co- Principal Investigator  
2016: CPUB student research grant to Rebecca Price

### **Book Chapters**

Hess, A.R. 2017. Chapter 4 – The integumentary system. In: Anatomy and Physiology in Context. Ebook. TopHat Publishing, Toronto, Ontario, Canada. <https://app.tophat.com/e/350597/assigned>  
Hess, A.R. 2017. Chapter 23 – Nutrition and Metabolism. In: Anatomy and Physiology in Context. Ebook. TopHat Publishing, Toronto, Ontario, Canada. <https://app.tophat.com/e/350597/assigned>

### **Internship**

Faculty supervisor for 21 students conducting internships in Medical Imaging at various Geisinger Medical Center locations.

### **Service Activities**

University Wide Promotion Committee – Asst. Chairperson  
Academic Biology Learning Environment (ABLE) - Co-Director  
Middle States Standards Sub-working group member  
BU Faculty representative on PASSHE Faculty Professional Development Committee  
Faculty advisor – Biological and Allied Health Science Club  
Geisinger School of Radiologic Technology – member of advisory committee  
Science Fair Judge – Bloomsburg Area Middle School and the Bloomsburg Children's Museum



John M. Hranitz  
Professor

Ph.D. Mississippi State University  
Biology

### Teaching

Human Biology; Biology of Aging; Anatomy and Physiology of the Head, Neck and Thorax; Vertebrate Zoology; Senior Seminar in Biology

### Research Interests

My research expertise is in the ecological genetics and physiological ecology of animals. I study amphibians and reptiles and bees, but I also collaborate to study other taxa, providing expertise in ecological genetics or physiological ecology. I apply numerous techniques (allozyme genetics, microsatellite DNA genotyping, mtDNA sequencing, western blotting, ELISA, and skeletochronology) to study heterozygosity-fitness relationships, population genetic structure, and the abundance, distribution, and the physiological ecology of animals. Currently, my research is focused on studying island dwarfism and coastal ecology of amphibians and pollination systems.

### Publication

- Gonzalez VH, KE Park, I Cakmak, JM Hranitz, JF Barthell. 2016. Pan traps and bee body size in unmanaged urban habitats. *Journal of Hymenoptera Research* 51:241-247.

### Presentations at the Society for Integrative and Comparative Biology, Portland OR (3-7 Jan 2016)

- Klempay BL, Lim I, Mallula ML, Olsen AM, Park KE, Silva DH, Gonzalez VH, Hranitz JM, Petanidou T, Barthell JF. 2016. The effect of introducing differing color floral morphs on bee visitation in a native population of *Vitex agnus-castus* on the Greek island of Lesvos. *Integrative and Comparative Biology* 56:E316.
- Olsen AM, Mallula ML, Tosunoglu A, Cakmak I, Hranitz J, Barthell J, Gonzalez V. 2016. Bee visitation patterns of *Centaurea solstitialis* L. (Asteraceae) in an urban environment in northwestern Turkey. *Integrative and Comparative Biology* 56:E344.
- Park KE, Cakmak I, Hranitz J, Barthell J, Gonzalez VH. 2016. Avoidance by bees and flies to field-realistic concentrations of four types of pesticides. *Integrative and Comparative Biology* 56:E347.
- Silva DH, Cakmak I, Hranitz JM, Barthell JF, Gonzalez VH. 2016. Pollinator composition in three types of unmanaged urban habitats. *Integrative and Comparative Biology* 56:E370.

### Funding

- 2016-2020. NSF-International REU Grant: Synergistic Studies of Honey Bees in the Republic of Turkey. John F. Barthell (PI), Charles Abramson (Co-PI), Victor H. Gonzalez (Senior Personnel), John M. Hranitz (Senior Personnel). Funded (\$396,640)
- 2013-2016. NSF-International REU Grant: Integrative Biological Studies of Honey Bees in the Republic of Turkey. John F. Barthell (PI), Charles Abramson (Co-PI), Harrington Wells (Senior Personnel), John M. Hranitz (Senior Personnel). Funded (\$230,310).

### Service Activities

- Director, Office of Research and Sponsored Programs and the Center for Undergraduate Research
- MS Thesis Advisor to Alan Belles, Jonathan Bobek, Bradley Ohlinger



Judith A. Kipe-Nolt  
Professor  
Allied Health Coordinator

Ph.D. Penn State University  
Microbiology

### Teaching

Microbiology lecture and laboratories, BAHS Freshman Seminar

### Research Interests

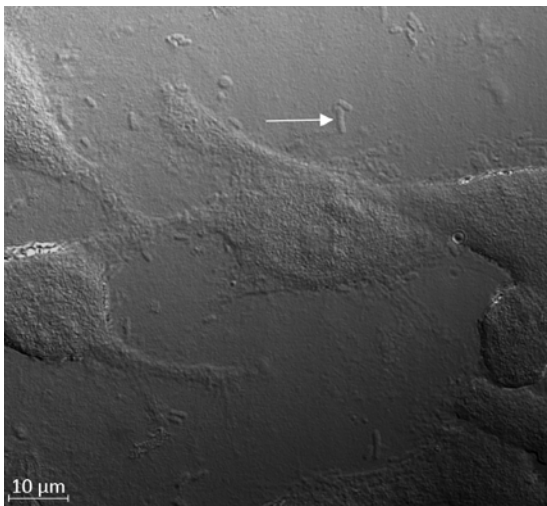
Soil and environmental microbiology, symbiotic nitrogen fixation, composting, manure odors and anaerobic digestion

### Activities

Student interest in Medical Imaging and Medical Laboratory Science programs remains strong. Fifty-one MI students began clinical programs in 12 different hospitals in 2017, and 7 MLS students began clinical programs at four different sites this year. Expanding clinical options involved communication with several program directors, and a site visit to JFK Muhlenberg Schools. Student group visits to Johns Hopkins Hospital Schools of MI and Geisinger Medical Laboratories were arranged.

Various health professionals and graduate program representatives were invited to give presentations and meet with students to share experiences, information and insights. These included the following individuals. Ken Roszel, Geisinger Radiography; Stephanie McDaniels, Lackawanna Sonography; John Shonis, Veterinary Medicine; Mike Lynch and Mike Penkin, NY Chiropractic; Kevin Zajac, PCOM Physician Assistant, Pharmacy, and Medical School; Steve Uhl, Evangelical Community Hospital Physician Assistant; Todd Bardua, Health South Physical Therapy; Devin Shuman, Geisinger Genetic Counseling; Donna Wolk and Donna Young, Geisinger Medical Labs, Jason Stack, Duquesne University Pharmacy; and Sarah Combs, Campbell University Pharmacy, Physician Assistant, Physical Therapy. At the university level, I served on the Enrollment Management Committee, and Middle States Self-Study.

Emily Noll conducted an Honors Research study with me this year investigating the effect of cranberry juice on attachment of *E. coli* to cultured HeLa cells. With the help of Dr. Venditti, we learned a little confocal microscopy as part of the project. DIC image of *E. coli* and HeLa cells shown below.





Thomas Scott Klinger  
Professor  
Graduate Coordinator for the Department of Biological and Allied Health Sciences

Ph.D. University of South Florida  
Biology

### Teaching

Human Sexuality, Concepts in Biology 1 (Laboratory), and Human Biology. Participated in the course *Biology in the Galapagos* with the University of Alabama at Birmingham during summer 2017.

### Research Interests

Invertebrate Zoology, Marine Biology, Nutritional Behavior and Ecology, Aquaculture, Impacts of Climate Change on Marine Ecosystems, Conservation.

My investigations have related to the functional aspects of invertebrate zoology. Most of these studies have focused upon physiological, behavioral, and ecological aspects of nutrition of echinoderms. Recent studies have emphasized impacts of climate change, particularly elevated sea surface temperatures and ocean acidification. This work upon novel challenges to sea animals has led to increased involvement in environmental policy and conservation efforts.

2017 was again a year for travel. In May, I was invited to participate in a course on the Biology of the Galapagos Islands and made promising contacts at the Darwin Research Center. In July, I participated in the 8<sup>th</sup> North American Echinoderms Conference at the College of the Holy Cross in Massachusetts, where I presented some of the research we had conducted the prior year in Panama.

### Presentations

*Thermal tolerances of three species of Echinometra (Echinodermata: Echinoidea) in Panama.* With H. A. Lessios and A. Calderon. 8<sup>th</sup> North American Echinoderm Conference. Worcester, Massachusetts. July 12, 2017.

### Funding

Travel Award for the 8<sup>th</sup> North American Echinoderm Conference. Worcester, Massachusetts

### Service Activities

Organized the fall 2017 BAHS Weekly Departmental Seminar Series.

Grade School presentation at the Greenwood Friends School: "Research in Antarctica."

Mace Bearer at the spring and the fall Graduate Commencement Convocations.

Departmental APSCUF Representative.

Represented Bloomsburg University Graduate Programs at the 48<sup>th</sup> Annual Meeting of the Commonwealth of Pennsylvania University Biologists at Kutztown University

Represented Bloomsburg University Graduate Programs at the Millersville University on Campus Recruiting Program

BU Career Intensive Boot Camp



In the collections of the Museum of Comparative Zoology at Harvard University.



Galata Marine Laboratory of the Smithsonian Tropical Research Center, which is at the Caribbean end of the Panama Canal.



Candice M. Klingerman  
Assistant Professor

Ph.D. Lehigh University  
Integrative Biology

### **Teaching**

Introduction to Nutrition and Anatomy and Physiology II (laboratory)

### **Research Interests**

My research laboratory is dedicated to understanding the neuroendocrine mechanisms underlying diseases of energy dysregulation (e.g. obesity, anorexia). These mechanisms are studied from an evolutionary perspective – traits evolve if they increase reproductive success. Therefore, we examine both ingestive as well as reproductive behaviors simultaneously, using zebrafish as our animal model.

A graduate student in my research laboratory, John Poling, presented his Master's thesis proposal (spring 2017) on the effects of environmental neurotoxins on learning and memory in the zebrafish. He is currently writing his thesis.

### **Funding**

Continuation of a research and scholarship grant provided by Bloomsburg University.  
Title: Food-restriction affects reproductive and ingestive behaviors in zebrafish (*Danio rerio*). Received approval for a change in the topic of interest to provide financial support for my graduate student, John Poling.

### **Publications**

Schneider, J., Benton, N., Russo, K., Klingerman, C., Williams, W., Simberlund, J., Abdulhay, A., Brozek, J., and Kriegsfeld, L. (2017) RFamide-related Peptide-3 and the Trade-off Between Reproductive and Ingestive Behavior. *Integr Comp Biol.* 57:1225-1239.

### **Presentations**

Burroughs, S., Trautwein, T., Dalsania, A., Schwindinger, W., Venditti, J., and Klingerman, C.M. "Effects of prokineticin-2 on the sexual and ingestive behaviors of female Syrian hamsters." (poster) Interdisciplinary Neuroscience Conference at Lehigh University. Bethlehem, PA. 2017.



Barry L. Nolt  
Assistant Professor

Ph.D. Pennsylvania State University  
Plant Pathology

### Teaching

Concept 1 laboratories, Microbiology laboratories, Virology lecture

### Research Interests

The identification and management of *Pythium* species infecting ornamental crops

*Pythium* is a group of soil-borne fungi that cause economic losses on a wide range of field and greenhouse crops. My research group is currently developing methods for detecting and quantifying *Pythium* in infested greenhouse soils, studying the effect of control measures on species diversity and evaluating the efficacy of chemical treatments on disease management. I am fortunate to have close collaboration with Dillon Floral in Bloomsburg.

### Internships

I served as a faculty supervisor for 24 medical imaging majors completing internships at Geisinger Medical Center facilities around the region. I also assisted the Geisinger internship coordinator in bringing a new internship site in State College on line for future interns.





Steven T. Rier  
Professor

Ph.D. University of Louisville  
Environmental Biology

### Teaching

Ecology and Evolution, Global Change Biology, Freshwater Biology, Ecosystem Management, Freshman Seminar in Biology, Concepts 1 laboratory

### Research Interests

Stream Ecosystem Ecology, Algal and Microbial Ecology, Water Pollution

Dr. Rier mentored two undergraduate research students and two Master's Students. Projects included:

- High resolution monitoring of phosphorus dynamics in Fishing Creek
- Effects of a simulated brine spill on stream ecosystem function (collaboration with the United States Geological Survey), manuscript in preparation
- Agriculture impacts on stream ecosystem function and the development of rapid functional indicators
- Measuring performance of best management practices installed as part of the implementing precision conservation in the Susquehanna River Watershed
- Ecology of *Phormidium*, a potentially toxic cyanobacterium in Fishing Creek

### Publications

- Hartzell, S.M. and S.T. Rier. 2017. A crayfish survey of the fishing creek watershed in northeastern Pennsylvania suggests widespread prevalence of a nonindigenous species and the absence of a native congener. *Journal of the Pennsylvania Academy of Science* 91:1-10.
- Rier, S.T., K.C. Kinek, S.E. Hay and S.N. Francoeur. 2016. Polyphosphate plays a vital role in the phosphorus dynamics of stream periphyton. *Freshwater Science* 35:490-502.
- Tucker-Serniak, L., C. Corbin, A. Pitt, S. Rier. 2016. The effects of Japanese Knotweed on avian diversity and function in riparian habitats. *Journal of Ornithology*.

### Grants

- Measuring performance of best management practices installed as part of the implementing precision conservation in the Susquehanna River Watershed. National Fish and Wildlife Federation, project in second year (\$115,000, BU budget)
- Water quality investigations at Bloomsburg University: Summer 2017. Degenstein Foundation (\$25,000)

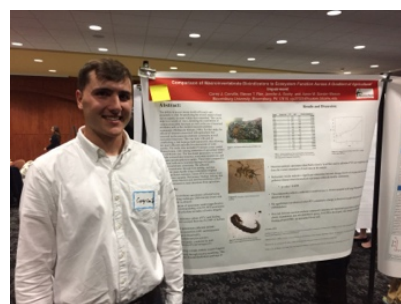
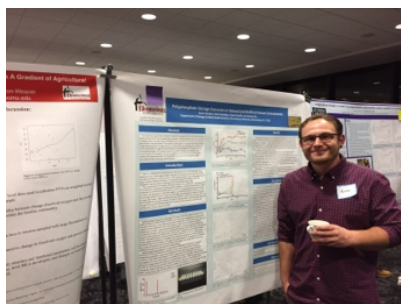
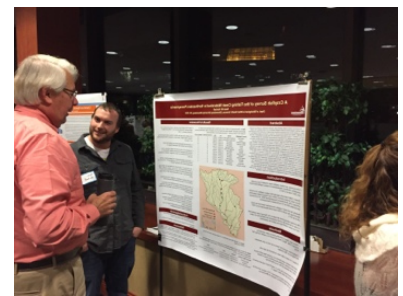
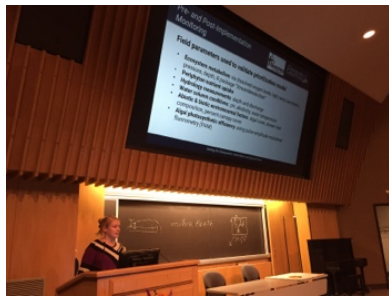
### Presentations at Scientific meetings (bold denotes BU student mentored by STR)

**Conville, C.J.**, S.T. Rier, **J.A. Soohy** and **A. Gordon-Weaver**. 2017. Comparison of macroinvertebrate bioindicators to ecosystem function across a gradient of agricultural impairment. Susquehanna River Symposium, Lewisburg PA

Gemberling, A. and **J.A. Soohy** 2017. Precision conservation in the Susquehanna River watershed: tools and high-resolution datasets for watershed organizations and community-based strategies for success. Susquehanna River Symposium, Lewisburg PA

**Gordon-Weaver, A.**, **J.A. Soohy**, **C.J. Conville** and S.T. Rier, S.T. 2017. Polyphosphorous storage dynamics in stream biofilms. Susquehanna River Symposium, Lewisburg PA

- Gordon-Weaver, A., J.A. Tuomisto, and S.T. Rier, S.T.** 2017. Response of stream biofilms to pulsed versus steady-state phosphorous additions. Annual meeting of the Society for Freshwater Science, *Raleigh, NC.*
- Hartzell, S.M.** and S.T. Rier. 2017. A crayfish survey of the Fishing Creek watershed in northeastern Pennsylvania. Susquehanna River Symposium, Lewisburg PA
- Rier, S.T. and **M. Salmon.** 2017. Effects of post-flood “stream cleaning” on benthic organic matter storage and ecosystem function in three northern Appalachian streams. Annual meeting of the Society for Freshwater Science, *Raleigh, NC.*
- Rier, S.T. **J.A. Soohy, C.J. Conville, and A. Gordon-Weaver.** 2017. *Rapid assessment of stream ecosystem function across an agricultural impact gradient.* Susquehanna River Symposium, Lewisburg PA
- Soohy, J.A., S.T. Rier, C.J. Conville and A. Gordon-Weaver.** 2017. A survey of *Phormidium* sp. across an agricultural impact gradient in central Pennsylvania. Susquehanna River Symposium, Lewisburg PA
- Steinhauser, D.J. C. Venn and S.T. Rier.** Diatoms as water quality indicators in the headwaters of Fishing Creek (Columbia and Sullivan counties), Pennsylvania. Northeastern Section- 53rd Annual Meeting, GSA
- Tuomisto, J.A., A. Gordon-Weaver and S.T. Rier.** 2017. Effect of temporal changes in phosphorus supply on stream biofilms and phosphorus limitation indicators. Annual meeting of the Society for Freshwater Science, *Raleigh, NC.*





William F. Schwindinger  
Assistant Professor

MD Albert Einstein College of Medicine  
PhD Albert Einstein College of Medicine  
Biochemistry

### Teaching

Anatomy and Physiology laboratories, Pharmacology for the Health Sciences, Medical Terminology

### Research Interests

My research interest is in G-protein coupled signal transduction. G-proteins initiate the cellular response to activation of cell surface receptors for numerous signals including hormones, neurotransmitters, paracrine factors, odorants, and light. G-proteins are composed of three subunits, an  $\alpha$ -subunit and a  $\beta\gamma$ -dimer; each of these subunits is encoded by a gene family. My aim is discover the specific roles of individual G-protein  $\gamma$ -subunits in signal transduction.

### Mentored Student Presentations

Maneval, Jr. GA and Schwindinger W (2017) Antisense Oligonucleotide Knock-Down of Gng5 and Gng11 in Chinese Hamster Ovary (CHO) Cells. 7<sup>th</sup> Annual Susquehanna Undergraduate Research Symposium, Bloomsburg University. First Place Biology/Molecular Biology Poster Award.

Kravitz HL, Schwindinger WF and Aronstam RS (2017) M1 Receptor Signaling: Disulfide Bond Reduction Mimics the Effects of Positive Allosteric Modulators. 7<sup>th</sup> Annual Susquehanna Undergraduate Research Symposium, Bloomsburg University

Kravitz HL and Schwindinger WF (2017) Targeting Gng5 and Gng11 expression and calcium signaling in Chinese hamster ovary cells. Beta Beta Beta National Biological Honor Society, Northeast District 2 Convention, Moravian College.

Falko O and Schwindinger (2017) Expression of G Protein Gamma Subunits in CHO Cells. Beta Beta Beta National Biological Honor Society, Northeast District 2 Convention, Moravian College.

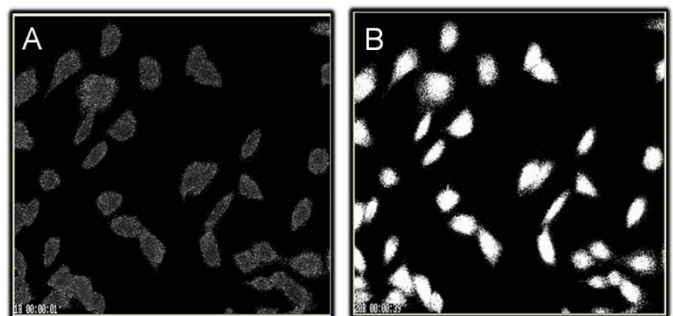
### Grants

Bloomsburg University, Research and Scholarship Mini-Grant, May 2017 - May 2018, \$4000

### Service Activities

Institutional Review Board for Human Subjects Research  
COST Curriculum Committee  
BAHS Pre-professional Committee

Ratiometric imaging of calcium in Chinese hamster ovary cells expressing the human M3 muscarinic receptor before (A) and after (B) addition of  $10^{-5}$ M carbachol.





Cynthia Surmacz  
Professor

Ph.D. Pennsylvania State University, College of  
Medicine  
Physiology

**Teaching**

Concepts in Biology 1 lecture, Anatomy and Physiology lectures and laboratories



**Research Interests**

Investigating physiological, behavioral, and cellular stress responses in honey bees

Pesticides have been shown to cause sublethal effects in honey bees, impairing memory, mobility, and foraging behavior that may affect hive health and contribute to the decline of honey bee populations. We are collaborating with Dr. Hranitz to investigate the effects of commonly used neonicotinoid pesticides on indicators of sublethal stress in honey bees, such as motor function and levels of the intracellular chaperone heat shock protein 70. This research has involved several BAHS students. Undergraduates Beverly Andre, Kyle Gainard, Joshua Petersheim, and Madison Aungst presented their results this year at local, regional, and national meetings. Graduate student Heather Llewellyn began her thesis research on the effects of pesticides on the honey bee transcriptome.



**Grants**

- Bloomsburg University Disciplinary Grant, Acute Sub-lethal Effects of the Neonicotinoid Imidacloprid on the Honey Bee Brain Transcriptome. J. Hranitz, C. Surmacz and H. Llewellyn
- Catalyst Grant, Pearson. Learning to Study Smart: Building Metacognitive Skills using Evidence-Based Study Practices. Collaborators: C. Davis, J. Jensen, G. Lindbeck, K Murphy, C. Surmacz.

**Presentations:**

- Society for Integrative and Comparative Biology (SICB). Jan 2017. B. Andre, C. Surmacz, J.Hranitz, I Cakmak, S Cakmak. Sublethal Stress Associated with Apiary Treatments for *Varroa* Mites.
- Commonwealth of PA Biologists. April 2017: K. Gainard, C. Surmacz, J. Hranitz, I.Cakmak, S. Cakmak. Effects of Thiamethoxam on Cellular Stress in Honey Bees.
- Tri-Beta Biology Convention. March 2017. B. Andre, C. Surmacz, J.Hranitz, I Cakmak, S Cakmak. Sublethal Effects of Acaracide Treatments in Honey bees.
- College of Science and Technology Research Day. April 2017. M. Aungst, C. Surmacz, J. Hranitz, I. Cakmak, S. Cakmak. Effects of Deltamethrin on Sub-lethal Stress in Honey Bees.
- Susquehanna Valley Undergraduate Research Symp. Aug 2017. J. Petersheim, H. Llewellyn, C. Surmacz, J. Hranitz, Sublethal Effects of Imidacloprid on Motor Responses in Honey Bees.

**Campus and Community Service Activities:**

- Advisor, Tri-Beta Biology Honor Society
- Secretary, The Honor Society of Phi Kappa Phi
- Honors Program Advisory Committee
- Health Sciences Symposium Committee
- Instructor, The Great STEM Adventure Camp
- Science Fair Judge, Bloomsburg Middle School
- Poster judge: Pennsylvania Academy of Sciences
- Praxis National Advisory Committee for Biology, Educational Testing Service
- Career Day Panel, Penn State College of Medicine



Jennifer J. Venditti  
Associate Professor  
Assistant Dean, College of Science & Technology

Ph.D. Lehigh University  
Molecular Biology

### **Teaching**

Human Biology, Anatomy & Physiology laboratories, Cell Biology laboratories, Introduction to Health Care Practice, Health Care Practicum, Health Sciences Seminar

### **Research Interests**

Andrology, fertilization, sperm architecture/morphology

### **Student Research Presentations**

Bartra SK, Coleman WL, and Venditti JJ. “Investigating the role of synapsin I during human sperm capacitation and acrosome reaction.” Bloomsburg University COST Research Day (April 2016), Susquehanna Valley Undergraduate Research Symposium (July 2016), Beta Beta Beta Regional Meeting (April 2017).

Burroughs, S, Trautwein, T, Dalsania, A, Schwindinger, W, Venditti J, and Klingerman, C. (April 2017). “Effects of Prokineticin 2 on the Sexual and Ingestive Behaviors of the Female Syrian Hamster”. Lehigh University Interdisciplinary Neuroscience Symposium.

Chamberlin LL, Venditti JJ, and Coleman WL. “Investigating the presence of synapsin III in human sperm cells.” Bloomsburg University COST Research Day (April 2017).

### **Publications**

Cumberledge, EA, Dixon, CB, **Venditti, JJ**, and Andreacci, JL. 2018. *The effect of the menstrual cycle on the reliability of contact-electrode bioelectrical impedance analyzers*. International Journal of Exercise Science. Accepted.

Coleman WL, Kulp AC, **Venditti JJ**. 2015. *Functional distribution of synapsin I in human sperm*. FEBS Open Bio 5:801-8.

### **Funding**

Bloomsburg University Research and Scholarship Grant to Drs. Venditti and Coleman May 2017  
“Investigating the functional distributions of synapsins I, II, and III in Human Sperm”  
\$4000

### **New Health Sciences Internships Developed**

Surgical Services Transport  
Inpatient iPad Educator  
Geisinger Medical Center, Danville, PA

### **Service Activities**

- Biology Club Advisor
- Science Programming: Children’s Museum, Danville Primary School, Liberty Valley Elementary, Girl Scouts of America
- Science Fair Judge, Bloomsburg Area Middle School, Bloomsburg, PA



Kevin J. Williams  
Assistant Professor

Ph.D. Syracuse University  
Physiological Ecology

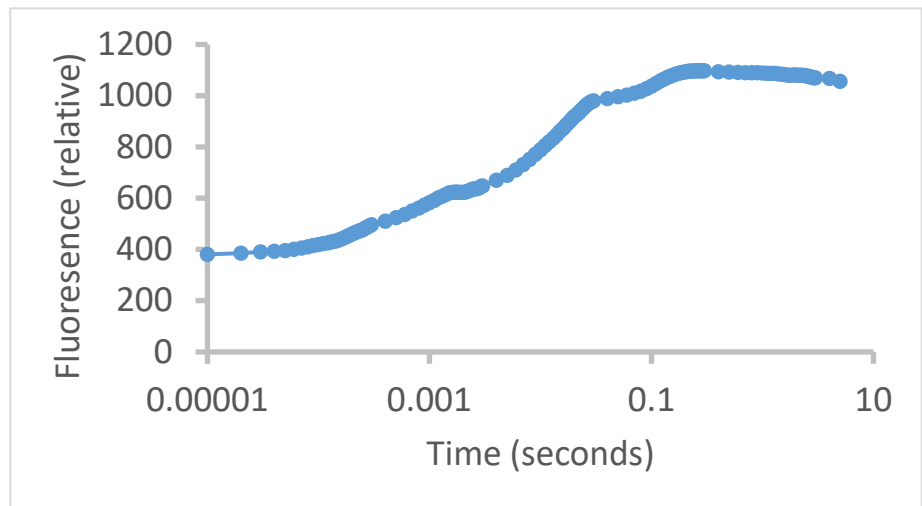
### Teaching

Ecology lecture and laboratories, Concepts in Biology 2 laboratories, Integrated Physiology Laboratory, Plant Physiology.

### Research Interests

Plant ecology and plant physiological ecology, with a focus on plant responses to defoliation and stress.

During 2017 Dr. Williams worked with Alexandria Ostman (an undergraduate research student) studying the influence of leaf damage on leaf thermos regulation, water loss and chlorophyll fluorescence. The long-term goal of this research is to understand how leaves regain their ability to control water loss following damage to the cuticle.



The results of an OJIP test measuring fluorescence of a damaged Poinsettia leaf

### Service

Dr. Williams served on the Commonwealth of Pennsylvania University Biology (CPUB) committee that reviews student grant application and awarded in excess of \$2000 grants to Biologist enrolled in PASSHE schools in 2016. He also chairs the department curriculum committee.



Marianna D. Wood  
Associate Professor

Ph.D. University of Kansas  
Biology

**Teaching**

Ecology lecture and laboratories, Concepts in Biology 2 laboratories, Current Topics in Biology (Lyme Disease)

**Research Interests**

Foraging Behavior, Mammalogy, Forest Ecology, Biology Education

In 2017, Dr. Wood and a student had a paper on effective strategies for teaching biology writing conventions accepted for publication. She also collaborated with undergraduates on projects to assess learning gains in biology courses and to measure decomposition in forest soils and contribute to a global decomposition database.

**Publication**

Wood MD and Wood JM. 2018. Saving time, increasing learning: Using checklists to help students perform disciplinary writing conventions. *Journal on Excellence in College Teaching* *in press*.

## Temporary Faculty



Zareen Amin

Instructor

BS, MBBS Medicine and Surgery, Dhaka University

MEd Community Health Education, Kent State University

### Teaching

Anatomy and Physiology I laboratories

### Research Interests

Human Anatomy and Physiology; Human Biology; Disease, Health and Wellness; Health Education.

### Service Activities

Involved with students outside class at ABLE, the Academic Biology Learning Environment center, where resources like books, lab manuals, microscopes, slides, bones, models are available. Guiding individual or groups of students needing extra help with their course. I have also done review sessions at ABLE, for students, before an exam.



Deborah Heitzman

Instructor

M.S. Biology, Bucknell  
University

### Teaching

Anatomy and Physiology I laboratories; Anatomy and Physiology of the Head, Neck and Thorax laboratories; Concepts in Biology 1 laboratories, and Introduction to Nutrition



Sean Hartzell  
Instructor

M.S. Biology, Bloomsburg University

### Teaching

Invertebrate Zoology

### Research Interests

Herpetology, Freshwater Ecology, Crayfish, Invasive Species, Freshwater Invertebrates, Natural History & Collections Based Research.

### Publications

- Hartzell, S.M. 2017. Ontogenetic Color Change in the Crayfish *Cambarus b. bartonii* and *Faxonius obscurus*: A Test of Ortmann's Hypotheses. *Freshwater Crayfish*. 23(1): *in press*
- Pitt, A.L., Shinskie, J.L., Tavano, J.T. Hartzell, S.M., Delahunty, T., and Spear, S.F. 2017. Decline of a Giant Salamander assessed with Historical Records, Environmental DNA and Multi-Scale Habitat Data. *Freshwater Biology*. 62(6):967-1116.
- Hartzell, S.M. and Rier, S.T. 2017. A Crayfish Survey of the Fishing Creek Watershed in Northeastern Pennsylvania Suggests Widespread Prevalence of a Non-Indigenous Species and the Absence of a Native Congener. *Journal of the Pennsylvania Academy of Science*. 91(1):1-10.
- Hartzell, S.M., Pitt, A.L., and Davis, S. 2017. Observations of Yawning Behaviour in the Eastern Hellbender (*Cryptobranchus alleganiensis alleganiensis*). *Herpetological Bulletin*. 142:46-47.
- Hartzell, S.M. 2017. *Glyptemys insculpta* (Wood Turtle) and *Graptemys geographica* (Northern Map Turtle). Intraspecific Basking. *Herpetological Review*. 48(3):622.
- Hartzell, S.M. 2017. Tail Bifurcation in the Northern Dusky Salamander, *Desmognathus fuscus* (Caudata: Plethodontidae). *Herpetology Notes*. 10:181-182.
- Hartzell, S.M., Pitt, A.L., Davis, S, Pavlick, C.R. and Tavano, J.T. 2017. *Cryptobranchus alleganiensis alleganiensis* (Eastern Hellbender). Temporal and Spatial Niche Partitioning. *Herpetological Review*. 48(1):84-85.



Evan Houston  
Instructor

Ph.D. University of Washington.  
Immunology

**Teaching**

Cell Biology laboratories and Immunology

**Research Interests**

Immunology, Avian biology, Evidence-based learning

## DEPARTMENT STAFF



Melinda S. Diltz  
Biology Laboratory Coordinator / Instructor

M.S. Millersville University of PA  
Biology

### Duties

Train and supervise *Anatomy & Physiology*, *Microbiology*, and *Concepts* undergraduate student lab assistants. Train and supervise graduate assistants in laboratory prep duties and teaching assistant duties. Supervise and complete the set-up, testing, and teardown of *Anatomy & Physiology I and II*, *Anatomy and Physiology of the Head, Neck Thorax*, and *Concepts in Biology I* laboratories. Supervise and complete the preparation of sterile media, equipment and supplies for *Introductory Microbiology*, *Microbiology*, and *Medical Microbiology* laboratories. Maintain and inventory all laboratory equipment and perform routine maintenance on equipment including follow-up on equipment sent out for repair. Assist with set-up and teardown of lab exams. Proctor lecture and laboratory exams. Supervise and assist in the maintenance of living specimens such as frogs, fish, worms, crayfish, snakes, lizards, hamsters, and turtles. Determine need, find vendors, and place orders for laboratory supplies and keep a record of receipt of supplies. Coordinate the disposal of chemical wastes, preservatives, and medical wastes. Inventory laboratory equipment in the department. Inventory equipment containing refrigeration in the department. Carry out other special assignments for the Department Chairperson and the Dean of the College of Science and Technology as required.

### Teaching

*Anatomy and Physiology* laboratories, *Concepts in Biology I* laboratories

### Service Activities

Space and Facility Committee, Bloomsburg University of Pennsylvania 2006 to present.



Amy Hettinger  
Department Secretary

MEd Student Affairs  
Kutztown University of PA

### A special thank you to our student workers –

Heather Beattie, Lauren Damiter, Jean Freyberger, Aaron Gordon-Weaver, Clifford Jones, Brooke Malore, Benjamin Paul, Nicole Scutti, and Aryana Simpson

## Graduate Program in Biology

The past year has been a period of substantial growth for the Master of Science Program in Biology. We have experienced an increase in applications and admissions. The first students were accepted into the Accelerated Combined Master's and Bachelor's Degree Program, taking advantage of a new pathway for advanced study and research. The Department of Biological and Allied Health Sciences and the Department of Environmental, Geographical and Geological Sciences are currently developing an additional accelerated tract for Environmental Geoscience students, which will allow these students to seamlessly join the Master of Science in Biology Program. We have also been able to recruit more Graduate Assistants, who are now a much more visible presence in the Department. These additional laboratory assistants, tutors, and researchers have increased the effectiveness of undergraduate education in foundational courses and have provided undergraduate students with readily accessible examples of the next steps in the progression of a career in biology. Graduate student research continues to be the life-blood sustaining research programs in the biological and allied health sciences. Graduate students published and presented a prodigious amount of scholarly work in 2017, clearly illustrating the sustained productivity of our graduate students and their faculty mentors.

### Current graduate students



#### Stephanie Buczkowski

Stephanie is originally from Erie, PA and earned her B.S Biology degree at Edinboro University. While there, she worked on research about proteins in spiders being potential angiogenic inhibitors. She also had the chance to travel to South Africa and Botswana with a group of biology students to learn more about wildlife conservation. She started her M.S Biology degree here at Bloomsburg University in January 2017 and has been working with Dr. Hess with a mouse melanoma model to study its aggressive phenotype. The goal of her research is to target the MAPK pathway using ERK1/2 inhibitors to illustrate that they are successful in decreasing proliferation, migration, invasion, and

vasculogenic mimicry. These results can aid in future therapeutic developments for melanoma. Stephanie received a research grant from the Commonwealth of Pennsylvania University Biologists to fund her project.



#### Corey Conville

Corey Conville, is from Pottsville, Pennsylvania. Mr. Conville's thesis research has focused on examining how agricultural land use effects lotic aquatic ecosystems. In particular, he has studied how the effects of stressors associated with agriculture are reflected in both the macroinvertebrate community and ecosystem functions. To do this he has sampled 19 streams across central Pennsylvania, with varying intensities of agriculture within the catchment area. The functional parameters of interest included extracellular enzymes, ecosystem metabolism, total phosphorous, and nitrogen. These were then compared to structural indicators examined through the benthic macroinvertebrate community. He has collected macroinvertebrates through kick netting, and then quantified stream health using a calculated index of biotic integrity to assess water quality across

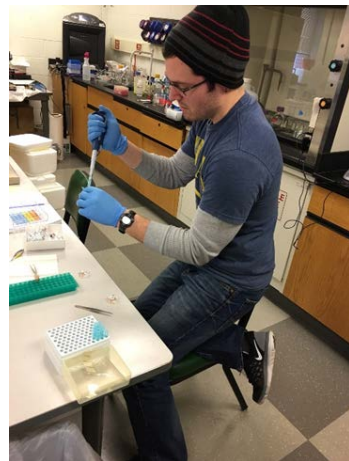
samples. By better understanding this linkage between stream structure and function, Mr. Conville hopes to develop an efficient and effective method of stream health analysis. After completing his Master's research, Corey plans to continue his education and earn a Ph.D. His ultimate goal is to then pursue a career in academia.



### **Alex Hoke**

Alex Hoke is from Selinsgrove, Pennsylvania. He received his Bachelor's degree in Biology from York College of Pennsylvania. He has loved reptiles and dinosaurs since he was very young and that is what sparked his interest in biology. Alex loves ectotherms. His current Thesis research looks at how maximal performance changes with changes in thermal regime in the American bullfrog tadpole. This is being done by initiating an escape response in a controlled arena, and then videotaping the resulting activity. This

may help in finding out how to best manage for this species for continuity, given the challenges associated with global climate change.



### **Kirk Jeffreys**

Kirk is from Danville, PA. He received his Bachelor's degree from Bloomsburg University in Biology – Molecular Biology. Kirk's graduate work is under the direction of Dr. William Coleman. Kirk is studying synaptic vesicle pool dynamics in the nervous system of the common earthworm.



### **Heather Llewellyn**

Heather Llewellyn earned her undergraduate degree in Biology from Lock Haven University. She received clinical training in Medical Laboratory Science and is employed in the laboratory at Evangelical Community Hospital in Lewisburg, PA. Heather's thesis research examines "The Acute Sub-lethal Effects of the Neonicotinoid Pesticide Imidacloprid on the Honey Bee Transcriptome."

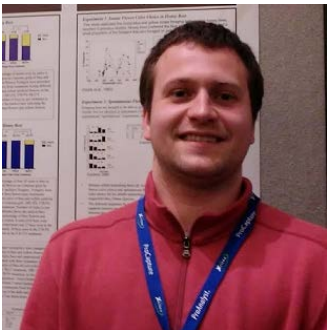
Honeybees are important pollinators of a wide variety of crops and are experiencing global declines. The losses of honey bee populations have been linked to a disorder known as Colony Collapse Disorder (CCD). In this phenomenon, worker bees disappear from the colony, leaving the brood unattended. While there is no single cause of CCD, sublethal doses of pesticides cause physiological and behavioral changes that adversely affect hive health.

Heather's research aims to determine how gene expression is altered in bees at doses of imidacloprid that cause these sublethal stress responses. This work has the potential to increase our understanding of the mechanisms underlying Colony Collapse Disorder. Dr. Surmacz is Heather's thesis advisor. Drs. Hranitz and Schwindinger serve on her thesis committee.



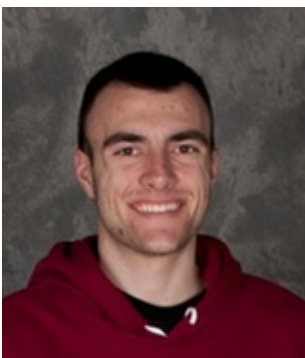
### **Samantha Maywald**

Samantha Maywald received her B. S. in Biology from Arcadia University in 2017. She is a Graduate Assistant and is currently conducting research on West Nile Virus. Her interest is in Wildlife, and her ultimate goal is to join the Pennsylvania Game Commission as a Biologist. Ms. Maywald's Thesis research consists of determining landscape properties of the mosquito *Culex restuans* in Northeast Pennsylvania where there is Ruffed Grouse present. These mosquitoes are being tested to determine the host which gave them their last blood meal, and to determine if the mosquitoes carry West Nile Virus. Ms. Maywald is partnering with the Pennsylvania Game Commission, the Pennsylvania State University, and the Department of Environmental Protection in order to carry out her Thesis research.



### **Bradley Ohlinger**

Bradley just recently defended his thesis and is now working as an adjunct faculty member at the Berks Technical Institute. In January he presented his work at the Society for Integrative and Comparative Biology annual meeting.



### **John Poling**

John received his undergraduate degree from Susquehanna University. His research in the Klingerman laboratory over the past year assessed how very low levels of environmental arsenic and thimerasol effect learning and memory in the zebrafish. Fish were trained to use a T-shaped maze and were rewarded with food when they entered the correct side of the apparatus. John is currently analyzing his data and finishing his thesis.



### **Rebecca Price**

Rebecca received her Bachelor of Science in Biology with a concentration in Spanish from Albright College in Reading, Pennsylvania. Her Thesis research focuses on the signal transduction mechanisms of aggressive forms of cutaneous melanoma. Her research will investigate the roles the EphA2 receptor and the Ras-Raf-Mek1/2-Erk1/2 signal transduction pathway have in melanoma development. Understanding how the EphA2 receptor and Erk1/2 signaling pathway regulate aggressive cutaneous melanoma will help provide new knowledge about melanoma pathogenesis and potential therapeutic interventions. She was awarded a student research grant from The

Commonwealth of Pennsylvania University Biologists (CPUB) for her Thesis work. She presented a poster presentation at the Pennsylvania Academy of Science at Delaware Valley University, and has given a research talk at the Health Sciences Symposium at Bloomsburg University. She currently works in healthcare operations research as a Project Manager and helps manage federally funded research studies. In the past, she has worked on healthcare research studies which focused on population health, outcomes research and the epidemiology of diseases such as rheumatoid arthritis, chronic hepatitis, coronary heart disease, and a veteran's health study which studied post-traumatic stress disorders.



### **Jennifer Soohy**

Jenni Soohy joined the Biology Department of Bloomsburg University after completing an REU internship at the Bermuda Institute of Ocean Sciences, where she studied copepods. She is currently working in Dr. Rier's Stream Ecology Laboratory studying ecosystem function of streams. She is collaborating with the Chesapeake Conservancy to monitor stream restoration projects. Her research focuses on a benthic cyanobacteria, *Phormidium spp.* She would like to better understand the environmental conditions which cause this blue green alga to proliferate and learn more about the ecosystem function of the benthic mat which it creates.

**Theses completed:**

Sean M. Hartzell. Behavior of Eastern Hellbenders and Native and Non-native Crayfish from the Susquehanna Drainage of Pennsylvania.

Ghaith G. Ibrahim. Role of Cggn5, a Putative Histone Acetyltransferase, on Antifungal Susceptibility and Multidrug Resistance Gene Regulation in *Candida glabrata*.

Bradley Ohlinger. Innate Color Choice and Flower Constancy Behavior in a Solitary Bee and a Social Bee.

Andrew King. Evaluating G-Protein Subunit Gamma-4's Effect on Cell Migration in Response to PROKR2 in a Model System of Kallman Syndrome Using CRISPR/Cas9.

Megan Leigh Kopec. Characterization of Heat Shock Factor-1 in the Thermotolerant Species *Megachile retundata*.

Shandna E. Burroughs. Ghrelin and prokineticin-2 are affecting the sexual and ingestive behaviors of the female Syrian hamster.

**Graduate Student Scholarly Publications:**

Belles A. P., Huckans J., Klinger T.S., and Hranitz, J.M. 2017. Call characteristics of island and mainland Fowler's toad. *Integrative and Comparative Biology* 57: E29-29.

Hartzell, S.M. 2017. Ontogenetic Color Change in the Crayfish *Cambarus b. bartonii* and *Faxonius obscurus*: A Test of Ortmann's Hypotheses. *Freshwater Crayfish*. 23(1): in press

Pitt, A.L., Shinskie, J.L., Tavano, J.T. Hartzell, S.M., Delahunty, T., and Spear, S.F. 2017. Decline of a Giant Salamander assessed with Historical Records, Environmental DNA and Multi-Scale Habitat Data. *Freshwater Biology*. 62(6):967-1116.

Hartzell, S.M. and Rier, S.T. 2017. A Crayfish Survey of the Fishing Creek Watershed in Northeastern Pennsylvania Suggests Widespread Prevalence of a Non-Indigenous and the Absence of a Native Congener. *Journal of the Pennsylvania Academy of Science*. 91(1):1-10.

**Graduate Student Oral and Poster Presentations at Professional Meetings:**

Belles, A. P., Huckans, J., Klinger, T. S. and Hranitz, J. M. 2017. Call Characteristics of Island and Mainland Fowler's Toad. Annual Meeting of the Society of Integrative and Comparative Biology, New Orleans.

Hartzell, S.M. and Rier, S.T. 2017. A Crayfish Survey of the Fishing Creek Watershed in Northeastern Pennsylvania. The 12th Annual Susquehanna River Symposium, Lewisburg, PA.

Pitt, A.L., Delahunty, T., Hartzell, S.M., Shinskie, J.L., and Tavano, J.J. 2017. Using Old and New Data to Rapidly Identify Extent and Drivers of Aquatic Species Population Decline. International Congress for Conservation Biology, Cartagena, Columbia.

Pitt, A.L., Shinskie, J.L. Tavano, J.T., Hartzell, S.M., Delahunty, T. and Spear, S. 2017. Using Historical Data and eDNA Surveys to Rapidly Evaluate Hellbender Population Decline. Northeast Natural History Conference, Cromwell, CT.

Hartzell, S.M., Corbin, C.E., Hranitz, J.M., and Klinger, T.S. 2017. Treasures in the Cabinet: A Case Study in the Value of a Small, Institutional Natural History Collection, and a Call for Collaboration. Commonwealth of Pennsylvania University Biologists Meeting, Kutztown, PA.

Conville, C.J., S.T. Rier, J.A. Soohy and A. Gordon-Weaver. 2017. Comparison of macroinvertebrate bioindicators to ecosystem function across a gradient of agricultural impairment. Susquehanna River Symposium, Lewisburg PA

Gemberling, A. and J.A. Soohy 2017. Precision conservation in the Susquehanna River watershed: tools and high-resolution datasets for watershed organizations and community-based strategies for success. Susquehanna River Symposium, Lewisburg PA

Gordon-Weaver, A., J.A. Tuomisto, and S.T. Rier, S.T. 2017. Response of stream biofilms to pulsed versus steady-state phosphorous additions. Annual meeting of the Society for Freshwater Science, Raleigh, NC.

Gordon-Weaver, A., J.A. Soohy, C.J. Conville and S.T. Rier, S.T. 2017. Polyphosphorous storage dynamics in stream biofilms. Susquehanna River Symposium, Lewisburg PA

Soohy, J.A., S.T. Rier, C.J. Conville and A. Gordon-Weaver. 2017. A survey of *Phormidium* sp. across an agricultural impact gradient in central Pennsylvania. Susquehanna River Symposium, Lewisburg PA

Tuomisto, J.A., A. Gordon-Weaver and S.T. Rier. 2017. Effect of temporal changes in phosphorus supply on stream biofilms and phosphorus limitation indicators. Annual meeting of the Society for Freshwater Science, Raleigh, NC.

Burroughs, S., Trautwein, T., Dalsania, A., Schwindinger, W., Venditti, J., and Klingerman, C.M. 2017. Effects of prokineticin-2 on the sexual and ingestive behaviors of female Syrian hamsters. Interdisciplinary Neuroscience Conference at Lehigh University. Bethlehem, PA.

#### **Extramural Grants Secured by Graduate Students:**

Buczowski, S. Interpreting the Roles of EphA2 in Mediating Vasculogenic Mimicry in a Mouse Melanoma Model. Commonwealth of Pennsylvania University Biologists Student Research Grant (\$600).

#### **Notes and Popular Articles Published by Graduate Students in 2017:**

Hartzell, S.M. (in press). *Trachemys scripta* (Pond slider). USA: Pennsylvania: Columbia Co., Luzerne Co., and Montour Co. Collinsorum.

Hartzell, S.M., Pitt, A.L., Davis, S, Pavlick, C.R. and Tavano, J.T. 2017. *Cryptobranchus alleganiensis alleganiensis* (Eastern Hellbender). Temporal and Spatial Niche Partitioning. *Herpetological Review*. 48(1):84-85.

Hartzell, S.M. 2017. *Plestiodon fasciatus* (Five-lined Skink). USA: Pennsylvania: Lycoming Co. *Herpetological Review*. 48(1):126.

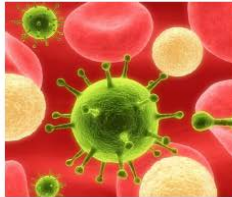
Hartzell, S.M. 2017. *Pseudotriton ruber* (Red Salamander). USA: Pennsylvania: Montour Co. *Herpetological Review*. 48(1):118

Hartzell, S.M., Pitt, A.L., and Davis, S. 2017. Observations of Yawning Behaviour in the Eastern Hellbender (*Cryptobranchus alleganiensis alleganiensis*). *Herpetological Bulletin*. 142:46-47.

- Hartzell, S.M. 2017. Winter Aggregations of Adult Red Salamanders (*Pseudotriton ruber*). *Herpetological Bulletin*. 142:44-45.
- Hartzell, S.M. 2017. *Glyptemys insculpta* (Wood Turtle) and *Graptemys geographica* (Northern Map Turtle). Intraspecific Basking. *Herpetological Review*. 48(3):622.
- Hartzell, S.M. 2017. *Terrapene carolina* (Eastern Box Turtle). Diet. *Herpetological Review*. 48(2):429.
- Hartzell, S.M. 2017. Tail Bifurcation in the Northern Dusky Salamander, *Desmognathus fuscus* (Caudata: Plethodontidae). *Herpetology Notes*. 10:181-182.
- Hartzell, S.M. 2017. An Egg Mass of the Spotted Salamander, *Ambystoma maculatum*, in an Unusual Terrestrial Microhabitat. *Herpetological Bulletin*. 139:38.
- Hartzell, S.M. 2017. *Hemidactylium scutatum* (Four-toed Salamander). Habitat. *Herpetological Review*. 48(1):155.
- Hartzell, S.M. 2017. Wherefore and Whither the Reprint? (Letter to the Editor). *Herpetological Review*. 48(2):502.
- Hartzell, S.M. 2017. Turtle Poetry: Chelonian Epitaph. *Chelonian Conservation and Biology*. 16(1):110.



# Academic Biology Learning Environment




Housed in Columbia Residence Hall, Science and Health Science Living-Learning Community Room, first floor (room 119)

**FEBRUARY EVENTS:**  
**Review Sessions at ABE:**  
 A & P I: 2/23 5:30-6:00pm for Lecture Exam 1  
 A & P II: 2/24 1:30-2:30pm Carlin: Cycle Workshop  
 2/25 4:30-5:00pm for Lecture Exam 2  
 Concepts in Biology I: 2/26 4:30-5:00pm for Lecture Exam 2

**Tutoring Sessions:**  
 Tri-Bez, the Biology Honor Society, will provide tutoring in ABE for Concepts in Biology; A & P; Human Biology; Cells, Genes, and Molecules; ecology and evolution; Cell Biology and Microbiology each **Wednesday from 6:00-7:00pm.**

**Faculty Office Hours** in ABE/faculty office cubicle. Come visit us! Bring your lecture guides, books, and materials with you!

Monday 9:00-9:30am	Mr. Alex Hesse (Concepts in Biology, A&P)
Monday 1:00-3:00pm	Prof. Neitzman (Concepts in Biology, A&P)
Monday 3:00-4:00pm	Ms. Alex Tsuiw (Concepts in Biology, A&P)
Monday 4:00-5:00pm	Ms. Kayla Minket (A&P)
Tuesday 9:00-11:00am	Ms. Swati Inatal (Concepts in Biology)
Tuesday 11:30am-1:00pm	Mr. Brad Obinger (Concepts in Biology)
Tuesday 2:00-3:00pm	Dr. Amin (A&P)
Wednesday 9:00-10:30am	Ms. Stephanie Buczkowski (A&P)
Wednesday 11:00am-12:30pm	Mr. Brad Obinger (Concepts in Biology)
Wednesday 2:00-3:30pm	Mr. John Polling (A&P)
Thursday 9:10-11:00am	Mr. John Polling (A&P)
Thursday 12:00-1:00pm	Dr. Neit (Concepts in Biology)
Thursday 4:00-5:00pm	Dr. Sumner (Concepts in Biology, A&P)
Friday 9:30-9:50am	Mr. Alex Hesse (Concepts in Biology, A&P)
Friday 2:00-3:00pm	Ms. Stephanie Buczkowski (A&P)

ABLE, short for Academic Biology Learning Environment, is a resource area in the Health Science Learning Community Room on the first floor of Columbia Residence Hall. ABE provides a place and resources for students in introductory biology courses to study individually and in groups together and with faculty and graduate assistants in our biology masters program. ABE kicked off the academic year with an Open House with a standing-room crowd. Students had the opportunity to view ABE resources and facilities, meet faculty and tutors, learn about ABE workshops, office hours, and study sessions, and of course have some snacks. Dr. Hess's human body cookies were a big hit! Students also received door prizes that ranged from school supplies to miniature skeletons. ABE is supported by the Department of Biological and Allied Health Sciences and a TALE Center grant.



# Tri Beta Biology Honor Society

Our department's chapter of Beta Beta Beta (Tri-Beta) has had a busy year! Tri-Beta is an honor society for biology students who achieve superior academic records and who display an aptitude for and an interest in the life sciences. Its mission is to stimulate scholarship, to disseminate scientific knowledge, and to promote biological research. Leading Tri-Beta during spring semester 2017 were: President Lauren Chamberlin, Vice-President Emily Broadbent, secretary Alex Schlack, Treasurer Aubrey Cole, and Historian, Gabriella Bonchack. Fall semester 2017 officers were President Jerome Betz; Vice-President Nathan Feiertag; Secretary: Jade Hunsinger; Treasurer, Jamie Davis; and Historian Adrienne Yordy. Dr. Surmacz is the Tri-Beta advisor.

Some of the chapter's activities this year include weekly tutoring to students in introductory biology course, sponsoring Mock Interviews for biology and allied health science majors, holding bake sales to fund a planned trip to the Mutter Museum in Philadelphia, hosting several Biology Trivia contests, offering biology games at Children's and Siblings carnival, participating in the Big Event, honoring seniors at an outdoor reception, and providing coffee and donuts to Hartline students, staff and faculty during finals week. The group collaborated with the BAHS club to hold a Merit Badge Workshop for area Girl Scouts and a reception following graduation. Thirty-five new members were initiated during a November ceremony. Dr. Abby Hare-Harris Hess, the keynote speaker, addressed "Genetics is the Spice of Life."

Tri-Beta aims to promote and disseminate biological research. The BAHS chapter certainly met this challenge this year! Several members presented posters at the Tri-Beta Northeast District 2 Convention at Moravian College. The BU contingent received the award for the largest delegation! Beverly Andre earned honorable mention for her poster, *Effects of Acaricide Treatments in Honey Bees*. Beverly's work was supported by a Tri-Beta Undergraduate Research grant. 2017 was indeed a great year for Tri-Beta!



College of Science & Technology Students, Staff, & Faculty


**FREE COFFEE  
AND DONUTS**

on Tuesday and Wednesday morning


Sponsored by Tri-Beta

Biology Seminar Room 178 HSC

Good Luck on Finals



**MOCK  
INTERVIEWS**



For Health Science and Biology majors who are in the process of applying for graduate and professional school and clinical programs.

**FRIDAY, NOVEMBER 18 at 3:00 pm**

Sign-up outside 145 Hartline

For more information contact Lauren Chamberlin or Dr. Surmacz

Sponsored by Tri-Beta Biology Honor Society



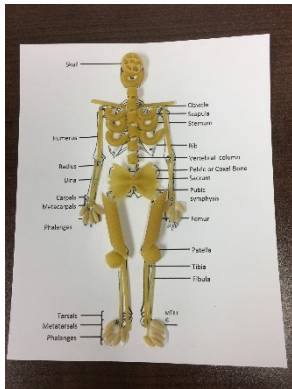
# Biological and Allied Health Sciences Club

The Biological and Allied Health Science club is open to all majors in Biology, Health Science, and Medical Imaging. The club meets twice a month. Members were very active this year hosting biology related activities at the Bloomsburg Children's Museum, Danville Elementary School, for Cub Scout Pack 24 and the Girl Scouts.

**Faculty Advisors:** Angela R. Hess and Jennifer Venditti

**2017/2018 Club Officers:**

President:	Elyse Shultz
Vice President:	Alexandra Ostman
Secretary:	Julianna Hernandez
Treasurer:	Emily Noll
Public Relations Officer:	Robert Kilpatrick



## BAHS Departmental Seminar Series

The Department of Biological and Allied Health Sciences Seminar Series had a very successful start in the Fall of 2017. The Department was able to attract a full roster of scholars to speak at the regularly scheduled weekly seminars. The seminars featured leading authorities in a variety of disciplines, who traveled to Bloomsburg to share their expertise, Bloomsburg University faculty sharing their current research with their colleagues and students, and graduate students displaying the culmination of their Thesis research.

### Invited speakers included:

DATE	INVITED PRESENTER	AFFILIATION	PRESENTATION TITLE
September 22, 2017	Jon Busada, Ph.D.	Postdoctoral Research Associate (PRAT) Fellow at the National Institute of Environmental Health Sciences (NIEHS/NIH)	<i>Endogenous glucocorticoids are required to suppress spontaneous gastric inflammation and metaplasia</i>
October 13, 2017	Bill Manley, Ph.D.	Department of Genetics at Rutgers University	<i>Exploration of miRNA expression in Schizophrenia using neuronal iPSCs.</i>
October 27, 2017	Moria Chambers, Ph.D.	Department of Biology of Bucknell University	<i>Consequences of chronic infection in <u>Drosophila melanogaster</u></i>
November 10, 2017	Douglas Frank, Ph.D.	Department of Biology of Syracuse University	<i>The grazing ecology of Yellowstone National Park</i>

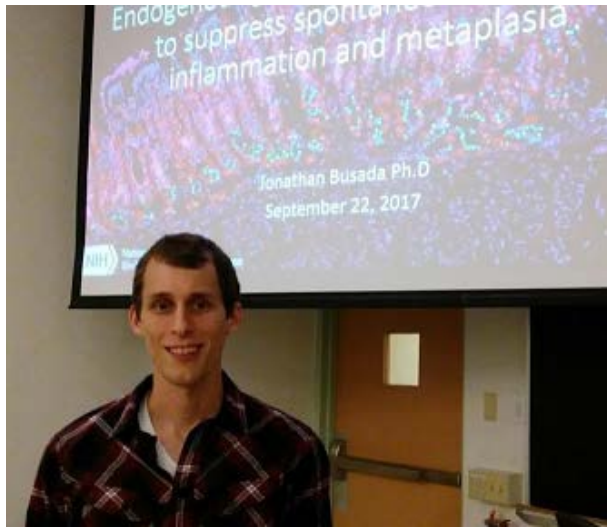
### Bloomsburg University faculty who shared their ongoing scholarship included:

DATE	FACULTY PRESENTER	PRESENTATION TITLE
September 8, 2017	John M. Hranitz, Ph.D.	<i>Ten Years in Turkey: Transformative Undergraduate Research Experiences and Their Outcomes</i>
September 15, 2017	Kate Beishline, Ph.D.	<i>Guardian of the Telomere: An unusual roll for the ultimate genome regulator</i>
December 1, 2017	Abby Hare-Harris, Ph.D.	<i>Characterization of the 16p11.2 deletion phenotype</i>

**And, our first Thesis Defense as part of our regularly scheduled Seminar Series was:**

<b>DATE</b>	<b>STUDENT PRESENTER</b>	<b>PRESENTATION TITLE</b>
November 17, 2017	Brad Ohlinger	<i>Innate Flower Color Choice and Flower Constancy in a Solitary Bee and a Social Bee</i>

Students and faculty were not only able to hear speakers during their formal presentations, but were also able to discuss their research over scheduled lunches and during a reception held after each talk. These opportunities for faculty and students to interact with leading researchers in a variety of fields help faculty maintain professional networks and provide students with abundant opportunities for exploring the diversity of options for professional development within the biological sciences. The BAHS Departmental Seminar Series is continuing into 2018 with a full slate of speakers for the Spring Semester.



Jon Busada, a 2010 graduate of BU with a B.S. Biology degree came back to present his work as a post-doctoral trainee at the NIH.



Dr. Hranitz (right) with Brad Ohlinger after a successful thesis defense.

# Congratulations to Our 2017 Graduates!

## **B.S. Biology**

Ashley Schucker  
Shawna Blake

### *Environmental Science*

Michael Baade  
Allison Bleistein  
Elliott Fackler  
Tim Fedor  
Aaron Gordon-Weaver  
Jacqlene Hoffman  
Bram Peart  
Matthew Schaeffer  
Daniel Steinhauer

### *Molecular Biology*

Jerome Betz  
Jaclyn Cortellessa  
Kurt Knepley  
Ali-reza Mobaraki  
Joshua Petersheim

### *Pre-Medical Sciences*

Beverly Andre  
Brandon Arnsberger  
Randy Bonilla  
Ryann Carroll  
Lauren Chamberlin  
Rebecca Davison  
Andrew Denisenko  
Olivia Falko  
Abigail Jones  
William Madden  
Rachel McDonald  
Andrey Minenko  
Shaidy Moronta  
Jonathan Perez  
David Pérez  
Ethan Powell  
Colleen Tobey  
Alex Trezza

## **B.A. Biology**

### *Natural History*

BrieAnna Stauffer

## **B.S Health Sciences**

Tala Abdulal  
Caitlin Barr  
Olivia Burley  
Molly Crawford  
Joseph Domanski  
Katelyn Faughnan  
Alexandra Harty  
Haley Kravitz  
Alexandra Schlack  
Michelle Stranix  
David Vazquez  
Cassandra Zaiac

### *Medical Lab Science*

Paige Betts  
Andrew Shamburg  
Brittany Underkoffler

### *Pre-Accelerated 2<sup>nd</sup> degree Nursing*

Alisha Grogg

### *Pre-Physician Assistant*

Sarah Bartra  
Emily Broadbent  
Maggie Bryner  
Laura Cochran  
Aubrey Cole  
Samantha D'Antonio  
Ashley Ferstermann  
Taban Jaaf  
Kendall Leet  
John McDonnell  
Jessica Peters  
Kaytlyn Suranofsky  
Mallory Tomaschik

### *Pre- Physical Therapist*

Hanan Ben Nacef  
Stephanie Buck  
Courtney Burke  
Samuel Demianovich  
Anthony Dilucido III  
Meaghan Eckel  
Edgar Garcia  
Dylan Houser  
Troy Koch  
Kayla Lavella  
Erika Lebron  
Megan Muthard  
Teresa Ortiz  
Joseph Retallick

## **B.S. Medical Imaging**

Darianny Antonio  
Carl Basore  
Hannah Cherry  
Emma Chesko  
Emily Cropper  
Bethany Deppen  
Matthew Derkits  
Aissatou Diop  
Michelle Fartel  
Gina Fiore  
Robert Gilday  
Emily Heintzelman  
Sierra Isaac  
James Kelly  
Joel Kulick  
Elena LaJuett  
Jessica Lavalva  
Marissa Lenkvich  
Oswald Mancini  
Steffani Monti  
Alex Moore  
Madeline Moser  
Olivia Mulvaney  
Elle Murdock  
Eduardo Osorio  
Jacob Plachko  
Heather Raymond

Victoria Reinert  
Jennifer Reynolds  
Stephanie Serafin  
Cole Sexton  
Sabrina Sholtes  
Angelina Shubert  
Megan Smith  
Amanda Swinehart  
Trac Tran

Derek Tripp  
Sarah Vital  
Brooke Waidelich  
Dagmara Wnuk

### Master's Degree in Biology

Ashley Schucker  
Sean Hartzell  
Ghaith Ibrahim  
Andrew King  
Megan Kopec

Dear BAHS alumni –

We want to hear from you! Please contact us and let us know of all the wonderful things you have been doing since you left BU. We are always interested in having our alumni come back to speak to our students during the College of Science and Technology Career Day. This is an excellent opportunity for you to share your career success with our current students. If you are interested in participating as a speaker for our weekly seminar series we would love to hear from you! We are very proud of all of our alumni – please keep in touch!





## *A special thank you to our donors!*

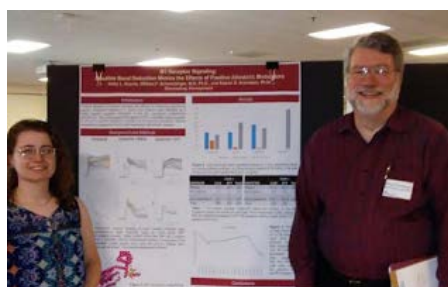
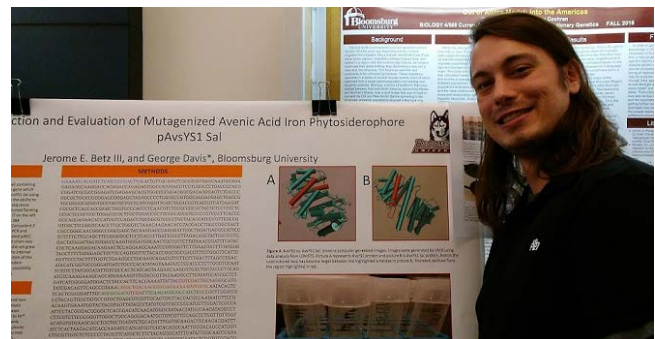
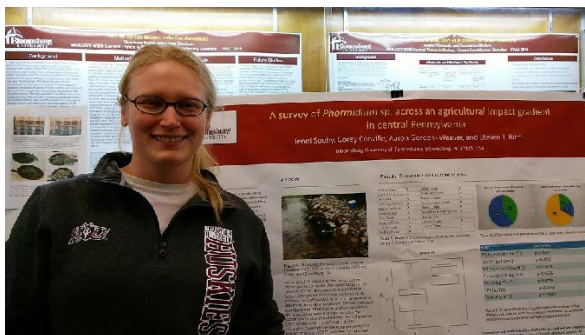
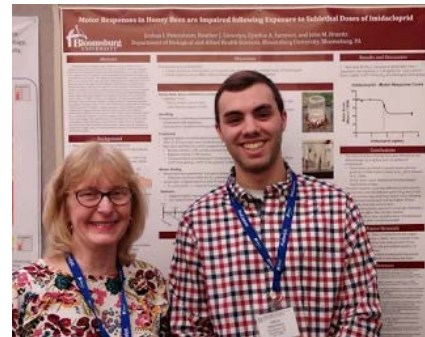
Ms. Caitlin Barr  
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Mr. Matthew Derkits  
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Mr. Michael Morrow  
Ms. Madeline Moser

Dr. Barry Nolt  
Dr. Rachel Melnick  
Dr. John Pyne  
Ms. Michelle Stranix  
Dr. Cynthia Surmacz  
Dr. Jennifer Venditti

We greatly appreciate your contributions! Generous support from donors like you allow students majoring in biology or allied health fields to participate in many educational opportunities they might not otherwise have. Funds are used to support student lab assistants, student research projects, BAHS research seminar series, student travel to professional meetings, and educational field trips for our student-lead organizations. For more information about what our students are involved in please visit our department blog: [Biosynthesis](#).

A sample of students presenting results of independent research projects at various meetings. Students from BAHS presented at a variety of meetings in 2017 including: College of Science and Technology research day, Society for Integrative Biology annual meeting, Susquehanna Valley Undergraduate Research Symposium, The Pennsylvania Academy of Sciences annual meeting, Society for Freshwater Science and the Tri Beta Northeast District 2 Convention.

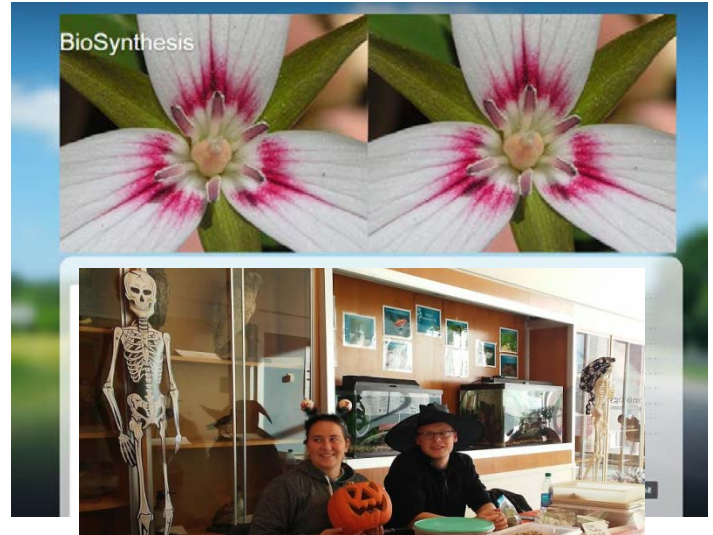


# BioSynthesis

<https://bloomsburgbiosynthesis.blogspot.com>

*BioSynthesis*, the newsletter of the Department of Biological and Allied Health Sciences is now online! Access the *BioSynthesis* to stay informed of department activities, clubs and organizations, upcoming events, research, alumni features, student achievements, faculty news, and more. Previous issues of *BioSynthesis*, capturing over ten years of BAHS history, is available at the department website at <http://departments.bloomu.edu/biology/biosynthesis.php>

Have news to share? Please drop a line to Cindy Surmacz at [csurmacz@bloomu.edu](mailto:csurmacz@bloomu.edu)



The Department of Biological and Allied Health Sciences of Bloomsburg University is pleased to announce an Invited Seminar by **Douglas Frank, Ph.D.** of the Department of Biology of Syracuse University Who will be presenting a talk entitled:


## The Grazing Ecology of Yellowstone National Park

Please join us at 3:00 p.m. on Friday, in Hartline Science Center, Room G40  
Refreshments will be provided



## THE PLANTS OF RICKETTS GLEN

A Preliminary Vascular Flora, Excluding the Grasses and Sedges



October 19, 2017 7 pm  
Hartline Science Center 108  
(Kuster Auditorium)  
Bloomsburg University

George P. Chamuris  
Biological & Allied Health Sci.  
Bloomsburg University

