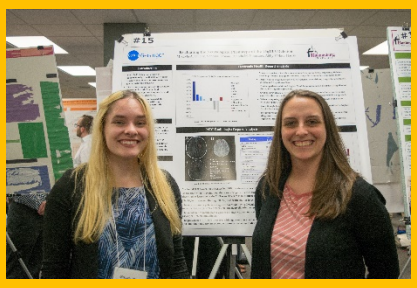
DEPARTMENT OF BIOLOGICAL AND ALLIED HEALTH SCIENCES

ANNUAL REPORT

2019




COLLEGE OF
SCIENCE &
TECHNOLOGY

Bloomsburg
University
OF PENNSYLVANIA

Bloomsburg University of Pennsylvania

Biological and Allied Health Sciences

Annual Report 2019 - Table of Contents

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 2019. 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 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 Biology
- Environmental Biology
- Molecular Biology
- Pre-Medical Sciences

BA Biology
- Natural History

MS Biology

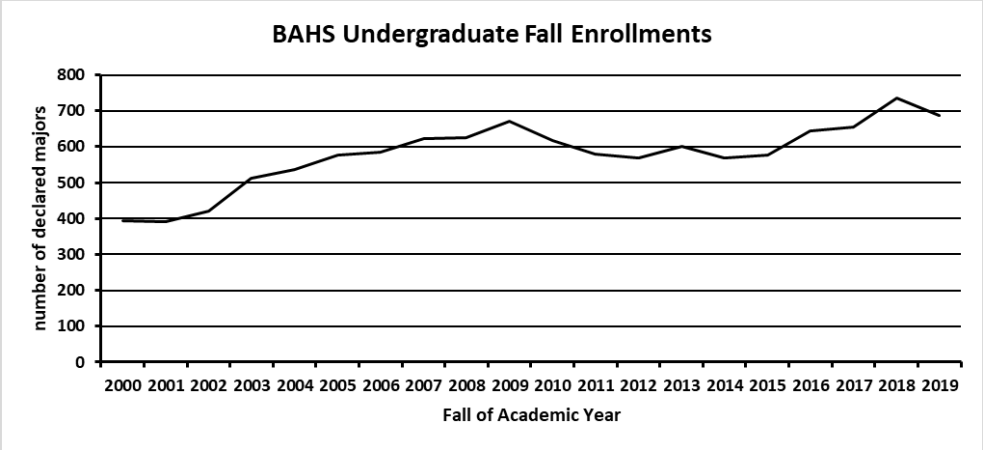
BS Health Sciences
- General
- Medical Genomics and Counseling
- Medical Laboratory Science
- Pre-Accelerated 2nd Degree Nursing
- Pre-Pharmacy
- Pre-Physical Therapy
- Pre-Physician Assistant

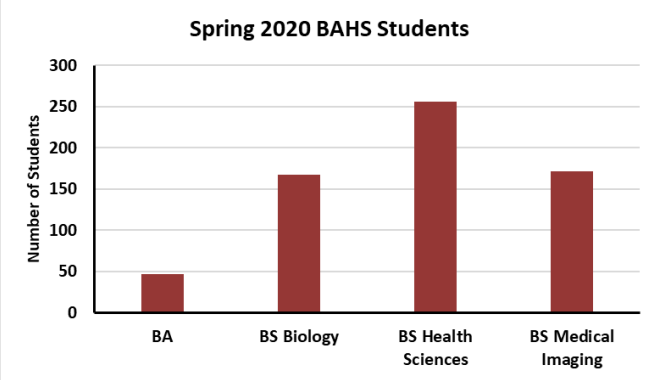
We currently have an accelerated Master's degree program. This program, designed to be completed in five years will allow graduates to earn both a Bachelor's and Master's degree. This is an exciting opportunity for biology majors. A seamless progression of coursework that awards two degrees in just five 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 remained high over the last several years. 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.





<u>Departmental Seminar Series</u> –

Under the direction of Dr. Thomas Klinger, the department continues to offer a regular seminar series. We started this effort in the fall 2017 and has grown in popularity. We outgrew our original location in an 80-seat lecture hall and now hold our weekly seminar in the large 240 seat Auditorium in Hartline Science Center! Seminars are offered nearly every Friday afternoon each semester. Speakers include BAHS faculty, BAHS graduate students, BAHS alumni, and invited speakers. The seminar series is well attended by faculty and students and continues to promotes a culture of academia within the department.

<u>Farewell to Dr. George Davis</u>

At the end of the spring 2019 semester we said farewell to Dr. George Davis who is now enjoying his retirement! Dr. Davis was a member of our department for 23 years. During his time at Bloomsburg University he published numerous papers and acquired approximately 50K in grant funding. He mentored many students – both undergraduate and graduate through research projects. Most recently Dr. Davis was awarded a patent for his invention: *Trojan horse targeted delivery systems for crop species*. Dr. Davis most popular courses were *Cells, Genes, and Molecules*, *Molecular Biology*, *Ecology and Evolution* and *Bioinformatics*. As a teacher, he is known for his enthusiasm for science, incorporating new breakthroughs in biology, and his ability to engage students. As a colleague, we appreciated

his warmth, generosity, and sense of humor. Dr. Davis will retire to Illinois with his wife Laura Davis, J.D., Professor of Business Law at BU. We will miss you Dr. Davis!

Farewell to Dr. Carl Hansen

At the end of summer 2019 we said farewell to Dr. Carl Hansen who has retired from BU and moved to sunny Florida where he is working as a professor in the Department of Biological Sciences at Florida Atlanta University. Dr. Hansen was a member of our department for 18 years. Throughout his tenure he published several papers and book chapters, served as reviewer for several high impact journals in his field and mentored several undergraduates and graduates through research projects. Dr. Hansen's most popular courses were *Cell Biology*, *Anatomy and Physiology, Human Physiology*, *Medical Terminology*, and *Developmental Biology*. As a teacher he was known for his enthusiasm and knowledge of a broad range of biomedical topics, his emphasis on critical thinking and writing, and his ability to engage students. His colleagues appreciated his ideas and insights, warmth and good humor, and dedication to the success of the department. We miss you Dr. Hansen!

Joseph P. Ardizzi
Associate Professor

Ph.D. Cornell University
Genetics

Teaching
Genetics, Cell Biology laboratories, and Writing in Biology

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.

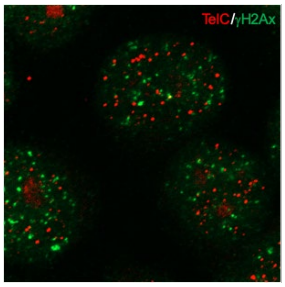
Service Activities
My most significant activities and contributions over this past year continue to involve my work as Co-Chair of the Pre-Professional Student Advisory Committee, an interdepartmental group of advisors who work closely with students preparing for admission into the medical, dental, veterinary, optometry, and chiropractic professions. In fall 2019, 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. Under the able leadership of Kayla Somple, the current president, and the other officers, the club's role has expanded. The club coordinates visits from professional school admissions personnel, informational presentations by medical professionals, and outreach efforts to undergraduates interested in the medical sciences. The members are serving as mentors to the first-year students and are engaged in more community activities. The number of requests for meeting our students has been increasing as has the geographic area represented by these professional schools contacting BU.

Focus on Students
We have continued to enjoy the success of our students. Several of our current applicants have had early interviews and acceptances, 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 we have achieved an overall 90% acceptance rate for the period 1997 to 2019.

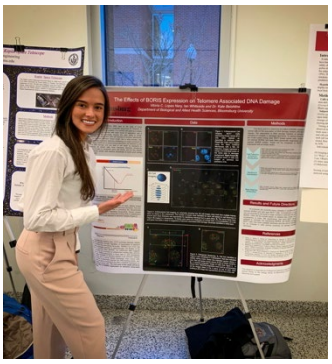
Kate A. Beishline, PhD
Assistant Professor

Ph.D Drexel University College of Medicine
Biochemistry

Research Interests



Our lab is generally interested in pathways and mechanisms in cellular biology that regulate aging and pathways which can contribute to cancer cell formation and survival. Our current research interests are focused on pathways which regulate the transcription and replication of eukaryotic telomeres. More specifically we are studying the mechanisms by which a 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. Undergraduate and graduate students in our lab are learning a variety of techniques including human cell culture, confocal microscopy, and quantitative qPCR to study these mechanisms and gain experience in a molecular biology laboratory setting.

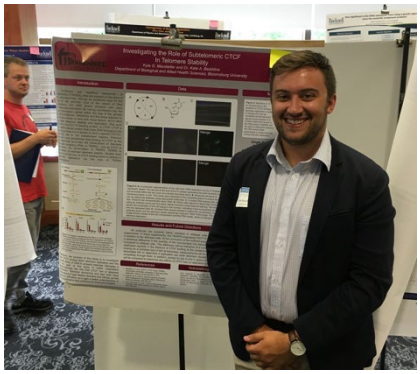


Recent Publications

Tutton S, Deng Z, Gulve N, Vladimirova O, **Beishline K**, Wiedmer A, Murphy M, Lieberman PM. Elevated telomere dysfunction in cells containing the African-Centric Pro47Ser Cancer-risk variant of TP53. *Oncotarget.* 2019 Jun 4; 10(38): 3581–3591.

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.

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.



Presentations

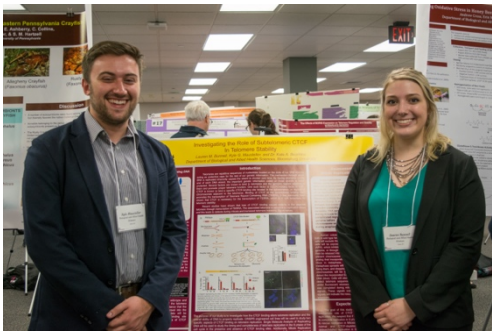
Lopes Nery V, Whiteside I, **Beishline K**. The Effects of BORIS Expression on Telomere Associated DNA damage. Informal Research Day. Bloomsburg University; Bloomsburg, PA. December 5, 2019.

Whiteside I, **Beishline K**. The effects of BORIS Expression on Telomere Regulation and Stability. 6th Annual PASSHE STEM Conference, Kutztown University; Kutztown, PA. October 2, 2019

Full T, Whiteside I, **Beishline K.** Investigating the Effects of BORIS on TERRA transcription in cancer cells. Bloomsburg University Chemistry Seminar Series. Bloomsburg University; Bloomsburg, PA. September 6, 2019

Maustellar K, **Beishline K.** Investigating the Role of subtelomeric CTCF in Telomere Stability. Susquehanna Valley Undergraduate Research Symposium. Bucknell University; Lewisburg, PA. July 31, 2019

Full T, Whiteside I, **Beishline K.** Investigating the Effects of BORIS on terra transcription in cancer cells. Susquehanna Valley Undergraduate Research Symposium. Bucknell University; Lewisburg, PA. July 31, 2019



Whiteside I, **Beishline K**. The effects of BORIS Expression on Telomere Regulation and Stability. COST Research Day. Bloomsburg University; Bloomsburg, PA. April 26, 2019

Bunnell L Maustellar K, **Beishline K.** Investigating the Role of subtelomeric CTCF in Telomere Stability. COST Research Day. Bloomsburg University; Bloomsburg, PA. April 26, 2019

Bunnell L Maustellar K, **Beishline K.** Investigating the Role of subtelomeric CTCF in Telomere Stability. Beta Beta Beta Northeast District 2 Convention. Bloomsburg University; Bloomsburg, PA. March 23, 2019

Whiteside I, Beishline K. The effects of BORIS Expression on Telomere Regulation and Stability. Beta Beta Beta Northeast District 2 Convention. Bloomsburg University; Bloomsburg, PA. March 23, 2019

Recent Funding

- Jessica S and Stephen R. Kozloff Faculty Fellowship (4 Years, 2018-2022)
- Bloomsburg University Research and Scholarship Award: New Faculty Category (2018-2019, extended)
- Mobile Science and Math Grant, Science in Motion; PA Department of Education (2019-2020, renewable)
- *Commonwealth of Pennsylvania University Biologists Student Grant (Ian Whiteside, 2019-2020)*
- *Beta Beta Beta Research Foundation Student Grant (Kyle Mausteller, 2019-2020)*
- *COST Professional Experience Grant. Bloomsburg University (Vitoria Nery, Fall 2019)*
- *SURe Award. Department of Chemistry and Biochemistry. Bloomsburg University (Tara Full, 2019)*
- *Undergraduate Research and Scholarly Activity Award. Bloomsburg University. (Kyle Mausteller, 2019)*
- *COST Dean's Summer research scholarship. Bloomsburg University. (Justin Salak, 2018)*

Teaching	**2019-2020 Service Activities**
• Cell Biology (Bio271) Lecture and Laboratory • Anatomy and Physiology 1 (Bio173) Laboratory • Animal Cell Physiology (Bio 472)	• BAHS Awards and Activities Committee • BAHS Equipment and Facilities Committee • BAHS Planning and Assessment Committee • COST Career Day Committee • COST Pathways in Science Event, Moderator • University General Education Council • Faculty Director, Bloomsburg Science In Motion Program

Kristen D. Brubaker
Associate Professor

Ph.D. Pennsylvania State University
Molecular & Cell Biology

Teaching
Cell Biology lecture and laboratory; Molecular Biology lecture and laboratory; Immunology; Cancer Biology

Research Interests
My research interests lie in the regulation of the stress responses 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. In collaboration with Dr. John Hranitz, we recently have conducted experiments to verify metabolism in honey bees in response to ethanol.

Honey bees were treated with ethanol (or control) and RNA was isolated for real time PCR experiments, to study gene expression changes indicated by an initial microarray experiment. We conducted real-time PCR experiments to verify gene expression changes in *hsc70-4*, *nrf2, egln1* and *foxp2* to name a few genes, in the ethanol treated bee samples. This past year one of my students, Justin Heller, decided to work with me on his Master's degree pursuing genes involved in alcohol tolerance. We are currently looking at changes in *hsp-70* to demonstrate a stress response, and two genes, *jwa* and *dunce*, that have been reported to be involved in alcohol tolerance.

Grants to Support Recent Research
Research and Scholarship Mini-Grant: Expression Study of Acute Alcohol Tolerance-Associated Genes *jwa* and *hangover* in *Apis mellifera* (Western honey bee), Kristen Brubaker ($2680, 2019-2020).

Research and Scholarship Mini-Grant: Ethanol-Induced Changes in Gene Expression in the Brain of European Honey Bees, *Apis mellifera*, Kristen Brubaker and John Hranitz ($2430, 2018-2019).

Recent Student Presentations
Heller J., Harris J., Arnsberger B., Hranitz J. and Brubaker KD. qPCR Study of Acute Ethanol-Induced Changes in Gene Expression in the Honey Bee (*Apis mellifera)* Brain. The Bloomsburg University COST Research Day, April 2018. (poster)

Arnsberger B., Harris J. and Brubaker K.D. Changes in expression levels of transcription factors associated with stress response in a solitary bee species, *Megachile rotundata.* Summer 2017 URSCA Poster Presentation at the Susquehanna Valley Undergraduate Research Symposium. (poster)

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

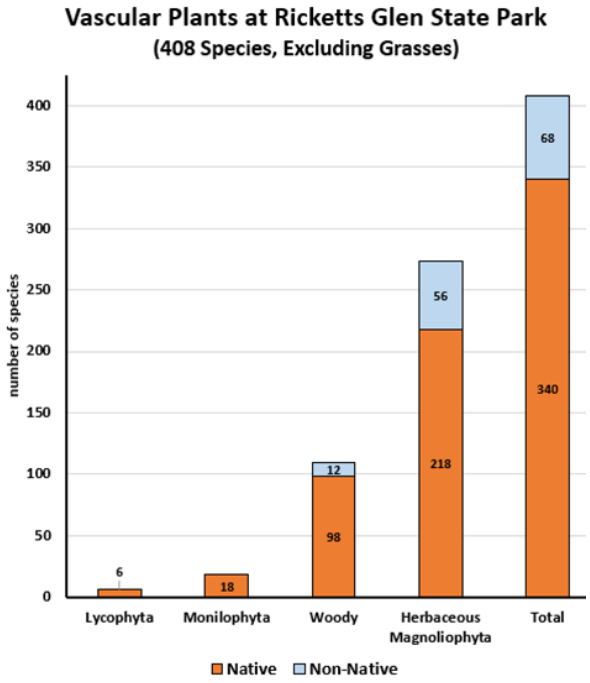
Research Interests
Bark Ecology, Botany, Environmental Education

Over the past year I have made considerable progress on the Flora of Ricketts Glen State Park project. I am working toward two main project outcomes.

1. A full-color field guide to the vascular plants of Ricketts Glen State Park, excluding grasses. Most of the inventory and photography has been completed, and now the layout of the book is being planned. Also, the search for a publisher is in progress.

2. A paper presenting species occurrence data, taxonomic representation, wetland status, occurrence of non-native and invasive species is in preparation for submission to the journal *Northeast Naturalist*. As of November 2019, I have identified 408 species of vascular plants, excluding grasses. 340 of these are native plants, and 14 are important invasive species in Pennsylvania.

The 408 species are classified in 87 families, eight of which include at least 10 species and 24 of which include at least five species in the Park. Thirty-five new records of species occurrence in either or both Luzerne and Sullivan counties have been reported to the USDA Plant Database and other database lists. Two of the previously unreported species are invasive species. More information can be found at http://department.bloomu.edu/biology/ricketts/flora_index.html



24 Families are Represented by 5 or More Species		
Family		# species
Asteraceae	Aster Family	64
Cyperaceae	Sedge Family	27
Rosaceae	Rose Family	27
Ericaceae	Heath Family	16
Fabaceae	Pea Family	16
Polypodiaceae s.l.	Fern Family	15
Ranunculaceae	Buttercup Family	13
Violaceae	Violet Family	10
Fagaceae	Beech Family	9
Lamiaceae	Mint Family	9
Pinaceae	Pine Family	9
Polygonaceae	Smartweed Family	8
Hypericaceae	St. John's-Wort Family	7
Juncaceae	Rush Family	7
Plantaginaceae	Plantain Family	7
Rubiaceae	Madder Family	7
Brassicaceae	Mustard Family	6
Lycopodiaceae	Clubmoss Family	6
Onagraceae	Evening-Primrose Family	6
Salicaceae	Willow Family	6
Adoxaceae	Muskroot Family	5
Apocynaceae	Dogbane Family	5
Betulaceae	Birch Family	5
Liliaceae	Lily Family	5
63 Families are represented by 1 - 4 species.		
87 Total Families + Poaceae = 88 total		

William L. Coleman
Associate Professor

Ph.D. Lehigh University
Molecular Biology

Teaching
Neurophysiology, Integrated Physiology Laboratory, Anatomy and Physiology Lecture and Laboratory, Human Physiology, Internship in Biology / Allied Health Science, Research in Biology

Research Interests
Synaptic Physiology, Electrophysiology, Molecular Regulation of Cellular Secretion

Scholarly Activity 2016-2019

Conference Abstracts/Presentations:

- Ilgenfritz MJ, Sherry KM, Gala DN, and **Coleman WL**. "Investigating the localization and functional role of GABA receptors at neuromuscular synapses of the earthworm *Lumbricus terrestris*." Society for Neuroscience Abstract, 2019.
- Sherry KM and **Coleman WL**. "Investigating the effects of GABA on earthworm ventral nerve cord excitability." Bloomsburg University COST Research Day, Spring 2019.
- Sherry KM and **Coleman WL**. "Investigating the distribution of the GABA-B receptor at the *Lumbricus terrestris* neuromuscular synapse. Tri-Beta Abstract, District 2 Annual Meeting, 2019, and Bloomsburg University COST Research Day, Spring 2019.
- Ryver RN, **Coleman WL**, and Venditti JJ. "Investigating the presence of synapsin proteins in hamster sperm." Tri-Beta Abstract, District 2 Annual Meeting, 2019, and Bloomsburg University COST Research Day, Spring 2019.
- Ilgenfritz MJ and **Coleman WL.** "Investigating the Functional Role of GABAergic Signaling at the *Lumbricus terrestris* Neuromuscular Junction Using Synaptogreen C4 Dye and Confocal Microscopy." Bloomsburg University COST Research Day, Fall 2018.
- Shultz E and **Coleman WL**. "Induction of Experimental Autoimmune Encephalomyelitis (EAE) in earthworms as a model for Multiple Sclerosis and its effect on muscle contraction." Bloomsburg University COST Research Day, Spring 2018.
- Gala DN and **Coleman WL**. "Investigation of the distribution of the GABA-A receptor at the earthworm body wall muscle using immunohistochemistry and the confocal microscope." Bloomsburg University COST Research Day, Spring 2018.
- 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.

Funded Grants:
Henry Carver Margin of Excellence Grant
"Investigating the Reproductive Role of Synapsin Proteins Using a Hamster In Vitro Fertilization Model System."
Principal Investigator: Jennifer J. Venditti
Co-Investigator: **William L. Coleman**
Amount Funded: $10,000 (May 2018-May 2019)

Selected Service and Committee Work
University Wide Tenure Committee, Spring and Fall 2019
BU IACUC

Clay E. Corbin
Professor

Ph.D. Ohio University
Biology

Teaching
Ornithology, Comparative Vertebrate Anatomy, Field Zoology, Vertebrate Zoology, Vertebrate Histology, Anatomy and Physiology laboratory

Research Interests
Evolutionary Ecology, Foraging Ecology, Ecological Morphology

In 2019, Dr. Corbin continued his student-based research program by mentoring Masters and undergraduate students in projects including museum collections, ecological morphology, foraging ecology, and birds and West Nile virus.

Beginning Birding Mini-Course offered at BU Continuing Education Program

Marine Ecology at the Chincoteague Bay

Publications / Presentations

- Corbin CE, Roper VG. Linking effects of acid mine drainage to ecology and morphology of riparian birds. 2020 Society for Integrative and Comparative Biology Conference.
- Anderson HB, Hutchinson M, Corbin CE, Hranitz JM. Avian host diversity detected in blood meal analyiss of two species of Culex mosquitoes collected from urban habitats in PA. 2020 Society for Integrative and Comparative Biology Conference.
- Corbin CE, Engelbrecht D. 2019. Big bite birds: bite force and head morpholgy in birds. *The Lark* 26:41-48.
- Rico-Guevara A, Sustaita D, Gussekloo S, Olsen A, Bright J, Corbin C, Dudley R. 2019. Feeding in Birds: Thriving in Terrestrial, Aquatic, and Aerial Niches. *In* Bels, V. et al (eds) Feeding in Vertebrates. Springer Verlag.
- Maywald S, Corbin C, Williams L. 2019. Potential environmental predictors of an important West Nile virus vector (*Culex restuans*) in Ruffed Grouse habitat. 2019 PA Wildlife Rehabilitation and Education Conference.
- Maywald S, Corbin C, 2019. First-year results of a mosquito surveillance program in Ruffed Grouse habitats. 2019 PA Wildlife Society
- Paoletti, J and Corbin C. 2018. Inventory and condition of bird and mammal specimens at the regional vertebrate collection of Bloomsburg University. 2018 COST research day.
- Hager et al. 2017. Continent-wide analysis of how urbanization affects bird-window collision mortality in North America. *Biological Conservation* 212:209-215.
- 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.

Lauri Green
Assistant Professor

PhD. University of California, Los Angeles

Scholarly Interests
My current project investigates the role of artificial wetlands on the foraging behavior and reproductive success of Tree Swallows. Future projects may include the use of playback recordings to affect bird behavior. My previous research focused on quantifying the effects of eutrophication and applying models to reduce nutrient loads into aquatic ecosystems.

Teaching Interests
I am passionate about lost synergy between science and art. Students in Biodiversity and Conservation and Ecology and Evolution make original films on environmental topics and show them in class. The results have been visually stunning, thought provoking and outright funny. For extra credit, students can create original poems or original art based on science news topics.

I also encourage students to become good citizens by tracking their use of disposable items and reducing waste over a week. Additionally, students must write to congress on environmental topics that matter most to them. Every term, I receive excited responses from students when their senators and congressional representative respond to their concerns.

Publications

2018 Calle, L., **Green, L.**, Strong, A., Gawlik, D. Time-integrated habitat availability is a resource attribute that informs patterns of use in intertidal areas. *Ecological Monographs*. 1-21

2016 Calle, L., Gawlik, D., Xie, Z., **Green, L.,** Lapointe, B., Strong, A. 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
DOI: 10.1016/j.jembe.2014.12.012

Presentations

2016 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.

Funding
Faculty Professional Development Council Differences in the nest success and foraging behavior of Tree Swallows (*Tachycienta bicolor*) across artificial wetland sites ($9999).

Research and Scholarship Grant. Differences in the foraging and reproductive success of Tree Swallows (*Tachycienta bicolor*) across natural and artificial wetlands ($3132).

Oak Ridge Institute for Science and Education, Developing a Transferability Framework for Ecosystem Service Models, 1/1/2015-6/23/2017, ($211,744)

Research in the press
Zavislak, Haley. "Efforts hatch a success story." *Press Enterprise.* Bloomsburg. June 22nd, 2019

"Update on Tree Swallow Project." Pennsylvania Outdoor Life. WNEP. Airdate: June 16th, 2019

Jackson, Kent. "Searching for answers." *The Citizens' Voice.* Wilkes-Barre. March 10th, 2019

"Tree Swallow Project." Pennsylvania Outdoor Life. WNEP. Airdate: March 3rd, 2019

Miller, Gabriel. "A little birdie told me." *The Voice. Bloomsburg University Campus Newspaper.* 2019 February 7th

Zavislak, Haley. "BU Research is for the birds." *Press Enterprise.* Bloomsburg. January 29th, 2019

2019 Teaching
Biodiversity and Conservation
Ecology and Evolution
Concepts in Biology I lab
Concepts in Biology II lab
Research in Biology
Introduction to Research in Biology
Animal Behavior - *Independent instruction*

2019 Service Activities
Curriculum committee, Environmental Biology Committee, Safety Committee, Thesis committees, Director/co-director Environmental Science Learning Community, Husky Decision Day, Tri-Beta Mock interviews, Coastal Estuarine Research Federation William A. Niering Award Committee.

Abby Hare-Harris
Assistant Professor

Ph.D. Rutgers University
Microbiology and Molecular Genetics

Teaching

- Anatomy and Physiology 1 (Laboratory)
- Anatomy and Physiology 2 (Laboratory)
- Bioinformatics
- Freshman Seminar
- Human Genetics
- Medical Genomics

Research Interests

Genetics of Neurodevelopmental Disorders, Genome Annotation, Human Genetics, Bioinformatics

Funding

- COST Professional Experience Grant – Mikayla Ulicny, Spring 2019
- 2019 Junior TALE Award, Genomics Education Partnership Workshop May 29-June 4, 2019 [Attendee]
- TALE Teaching Excellence Academy, May 2019
- Faculty and Professional Development Travel Award, Conference Travel, 2019
- Bloomsburg University Research & Scholarship Start-up Grant, May 2018-Present
- Bloomsburg University COST Faculty Scholarly Activity Award, Start-up Funding, December 2017

Publications

- Hare-Harris, A.E. *et al.* Within-task variability on standardized language tests predicts autism spectrum disorder: a pilot study of the Response Dispersion Index. *J Neurodevelop Disord* **11,** 21 (2019)

Presentations

- Flannery, K. Mitchel, M., Hare-Harris, A. Characterization of Developmental Milestones of Language in Autism Spectrum Disorders. CPUB, Edinboro University, April 13, 2019 [Poster]
- Flannery, K. Mitchel, M., Hare-Harris, A. Characterization of Developmental Milestones of Language in Autism Spectrum Disorders. COST Research Day, Bloomsburg University, April 27, 2019 [Poster]
- Ulicny, M. Troiani, V. Finucane, B. Hare-Harris, A. Evaluating the Neurological Phenotype of the 15q13.3 Deletion. COST Research Day, April 27, 2019 [Poster]
- Flannery, K. Mitchel, M., Hare-Harris, A. Characterization of Developmental Milestones of Language in Autism Spectrum Disorders. Tri Beta NE Convention, Bloomsburg University, March 23, 2019 [Poster]
- Ulicny, M. Troiani, V. Finucane, B. Hare-Harris, A. Evaluating the Neurological Phenotype of the 15q13.3 Deletion. Tri Beta NE Convention, Bloomsburg University, March 23, 2019 [Poster]
- Hare-Harris. A. Quantitative Analysis of Genetic Disorders. Bloomsburg University Academy, August 2, 2019 [Platform]

- Hare-Harris. A. Quantitative Analysis of Genetic Disorders. BAHS Departmental Seminar Series, Bloomsburg University, September 27, 2019. [Platform]
- Hare-Harris A. *et al*. Evaluating the Phenotype of the 15q13.3 Deletion Using Clinical MRI Data. American Society of Human Genetics. Houston, TX, October 16, 2019 [Poster]
- Flannery, K. Basile, G. Whiteside, I. Hare-Harris, A. Analysis of Within-Task Variability on Standardized Reading Assessments in Autism Spectrum Disorder. PASSHE STEM Student Research Conference, Kutztown University. November 2, 2019 [Poster]
- Flannery, K. Basile, G. Whiteside, I. Hare-Harris, A. Analysis of Within-Task Variability on Standardized Reading Assessments in Autism Spectrum Disorder. COST Informal Research Day, Bloomsburg University. December 5, 2019 [Poster]

Service Activities

- Steven Jones COST Professional U Faculty Fellow
- *Beta Beta Beta* Honor Society Co-Advisor
- Search and Screen Committee
- Classroom Observation Subcommittee
- Equipment and Facilities Committee
- Planning and Assessment Committee
- Sabbatical Committee
- COST Research PEG Reviewer
- COST Pathways In Science Career Panel Moderator
- LGBTQA Ally
- Tri Beta Mock Interviews
- Professional U Orientation Presenter
- New Faculty TALE Orientation Panelist
- Biology MS Thesis Committee Member

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 laboratory, Freshman Seminar

Research Interests
Regulation of multidrug resistance genes in pathogenic *Candida* species and the model yeast *Saccharomyces cerevisiae*.
Genetic regulation of hypha formation in *Candida albicans*.
Antimicrobial activity of fungal metabolites.

In addition to continuing his research investigating the spectrum of antimicrobial activity of fungal metabolites produced by the oyster mushroom *Pleurotus ostreatus*, Dr. Henry is examining the genetic basis for hypha formation in *Candida albicans* in responses to environmental signals and the epigenetic regulation of multidrug resistance in opportunistic fungal infections. Dr. Henry continues serving as a liaison between Bloomsburg University and Geisinger Medical Center (GMC) coordinating field trips to the clinical laboratories, laboratory career presentations, and alerting students of employment or internship opportunities at GMC.

Service Activities
Commonwealth of Pennsylvania University Biologists, Director
Institutional Biosafety Committee, Chairperson
BAHS Tenure Committee, Chairperson
BAHS Safety Committee
BAHS Allied Health Committee
BAHS Pre-Professional Committee
Bloomsburg University – Geisinger Medical Center Clinical Laboratory liaison

Angela R. Hess
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. Current research projects are aimed at investigating the role of melanoma tumor cell plasticity and EphA2 in mediating resistance to the clinical inhibitors vemurafenib and dabrafenib.

Students engaged in research projects over the last year: Kayla Sompel (undergraduates). Rebecca Price and Stephanie Buczkowski (graduate students).

Funding
2019: Margin of Excellence grant -- Connecting human melanoma tumor cell plasticity with resistance to clinically relevant drugs: vemurafenib, dabrafenib, and trametinib
2019: PASSHE FPDC grant – Connecting human melanoma tumor cell plasticity with resistance to clinically relevant drugs: vemurafenib, dabrafenib, and trametinib.
2019: CPUB student research grant to Ms. Kayla Sompel
2019: Pennsylvania Academy of Sciences research grant to Ms. Kayla Sompel
2018: Pennsylvania Academy of Sciences research grant to Ms. Stephanie Buczkowski
2018: Pennsylvania Academy of Sciences research grant to Ms. Rebecca Price
2018: Margin of Excellence Grant - Analyzing Eph/ephrin expression in human and mouse melanoma using quantitative polymerase chain reaction (PCR) methods
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

Presentations:
- Sompel, K.M and **A.R. Hess** 2019 Determining the does effects of vemurafenib and dabrafenib on human melanoma cells. College of Science and Technology Fall research day.
- Sompel, K.M and **A.R. Hess** 2019 Determining the does effects of vemurafenib and dabrafenib on human melanoma cells. Susquehanna Valley Undergraduate Research Symposium, Bucknell University.
- Buczkowski, S. and **A.R. Hess** 2019 Melanoma Aggressiveness in relation to EphA2 expression in a murine model. 95th Annual meeting of the Pennsylvania Academy of Sciences.
- Buczkowski, S and **A.R. Hess** 2018 Identifying factors contributing to aggressive melanoma in a mouse model. Bloomsburg University College of Science and Technology Research Day.

- Pressimone, C. and **A.R. Hess** 2018 Investigating the role of EphB4 and ephrin-B2 in promoting an aggressive melanoma phenotype. Bloomsburg University College of Science and Technology Research Day.
- Buczkowski, S. and **A.R. Hess** 2018 Identifying characteristics contributing the aggressiveness seen in murine melanoma. Annual meeting of the Commonwealth of Pennsylvania University Biologist.
- Price, R.M. and **A.R. Hess** 2018 Elucidating the roles of EphA2 and MAPK pathway and how they contribute to melanoma pathogenesis. Annual meeting of the Commonwealth of Pennsylvania University Biologist.

Book Chapters

Hess, A.R. 2018. Chapter 4 – The integumentary system. In: Anatomy and Physiology in Context. Ebook. TopHat Publishing, Toronto, Ontario, Canada. Available from https://tophat.com/marketplace/science-&-math/biology/textbooks/anatomy-and-physiology-in-context-john-redden-joe-crivello/797 [tophat.com]

Hess, A.R. 2018. Chapter 23 – Nutrition and Metabolism. In: Anatomy and Physiology in Context. Ebook. TopHat Publishing, Toronto, Ontario, Canada. Available from https://tophat.com/marketplace/science-&-math/biology/textbooks/human-anatomy-lindsey-jenny-nicole-geske/3020 [tophat.com].

Internships

Faculty supervisor for 11 students conducting internships in Medical Imaging at various Geisinger Medical Center locations during 2019.

Service Activities

University Faculty Professional Development Committee
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

PhD. Mississippi State University
Biology

Teaching
Biology of Aging, Population Biology, Research Methods, Research in Biology 1, Integrated Physiology Laboratory, Marine Ecology, NSF REU program, Anatomy and Physiology 1 Lab, Anatomy and Physiology 2 Lab, Current Topics in Biology

Scholarly Interests
My research expertise is in the ecological genetics and physiological ecology of animals. I study amphibians, reptiles and bees, but I also collaborate to study other taxa, providing expertise in ecological genetics or physiological ecology. I use 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, studies by my students and I investigate island dwarfism and coastal ecology of amphibians, island pollination systems, host-vector relationships for West Nile Virus, and stress responses in bees.

Publications (Students in Bold)
Gonzaelez VH, Hranitz JM, **Percival CR**, **Pulley KL**, **Tapsak ST**, Tscheulin T, Petanidou T, Barthell JF. 2020. Thermal tolerance varies with dim-light foraging and elevation in large carpenter bees (hymenoptera: Apidae: Xylocopini). https://doi.org/10.1111/een.12842 (early view).

Gonzalez VH, **Olsen A**, **Mallula M**, Tosunoglu A, Cakmak I, Hranitz J, Barthell J. 2017. Bee visitors of *Centaurea solstitialis* L. (Asteraceae) in an urban environment in northwestern Turkey. Arthropod-Plant Interactions 11:403-409.

Gunes N, Aydin L, **Belenli D**, Hranitz JM, **Mengilig S**, **Selova S**. 2017. Stress responses of honey bees to organic acid and essential oil treatments against *Varroa* mites. Journal of Apicultural Research 56:175-81. doi: 10.1080/00218839.2017.1291229.

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 (Students in Bold)
2018 Pennsylvania Vector Association in Harrisburg, PA, 26 Oct.

Anderson H, Hutchinson M, Hranitz JM. Molecular techniques to identify avian hosts in blood meals of mosquito vectors of West Nile Virus in Pennsylvania.

2019 Meeting of The Society For Integrative And Comparative Biology, Tampa FL, 3-7 Jan.

Ambrose A, **Chambers C**, **Cordero Martinez C**, **Markland S, Osborn A**, **Shirley K**, **Twombly Ellis J**, **Silva Echeandia S**, Giray T, Gonzalez VH, Hranitz JM, Barthell JF. 2019. Foraging Patterns of Three Carpenter Bee Species at Chasteberry (*Vitex agnus-castus*) Bushes on the Greek Island of Lesvos. Society for Integrative and Comparative Biology. Tampa, FL.

Cordero C, **Ambrose A**, Ortiz C, Petanidou T, Tscheulin T, Giray T, Hranitz JM, Barthell JF, Gonzalez VH, Agosto J. 2019. The response of [illegible] circadian rhythms to humidity/temperature oscillations and the foraging patterns of specialist and generalist sweat bees. Society for Integrative and Comparative Biology. Tampa, FL.

Llewellyn HJ, **Smith EN**, Surmacz CA, Hranitz JM. 2019. Sublethal Effects of the Neonicotinoid Imidacloprid on Cellular Stress in the Honey Bee Brain. Society for Integrative and Comparative Biology. Tampa, FL.

Shirley K, **Osborn A**, **Chambers C**, **Ambrose A**, **Markland S**, **Twombly Ellis J**, Gonzalez VH, Kantsa A, Petanidou T, Tscheulin T, Barthell JF, Hranitz JM. 2019. A Plant–Pollinator Network in a Coastal Agricultural Field on Lesvos Island, Greece. Society for Integrative and Comparative Biology. Tampa, FL.

2018 Meeting of The Society for Integrative And Comparative Biology, San Francisco, CA, 3-7 Jan.

Brown E, **Fernandez A**, **Metzler E**, **Pavlick C**, **Rivera-Figueroa V**, **Salaguinto T**, Gonzalez V, Agosto-Rivera J, Hranitz JM, Petanidou T, Tscheulin, T, Barthell, JF. 2018a. Carpenter bee foraging patterns at chasteberry bushes (*Vitex agnus-castus* L.) on the Greek island of Lesvos. Integrative and Comparative Biology 58:E283-E283.

Brown ER, **Pavlick CR**, Petanidou T, Tscheulin T, Gonzalez VH, Agosto-Rivera JL, Hranitz JM, Barthell JF. 2018b. Temporal niches of two pollinating bees of field bindweed (*Convolvulus arvensis*, Convolvulaceae). Integrative and Comparative Biology 58:E282-E282.

Fernandez A, Petanidou T, Tscheulin T, Gonzalez VH, Hranitz JM, Agosto J, Barthell JF. 2018. Pollen dynamics of field bindweed and competitive release in pollen loads of a generalist pollinator in the Mediterranean. Integrative and Comparative Biology 58:E315-E315.

Metzler EJ, **Figueroa VR**, **Salaguinto TC**, Gonzalez VH, Petanidou T, Tscheulin T, Rivera JLA, Hranitz JM, Barthell JF. 2018. Foraging behaviors support dietary niche separation of a generalist bee and specialist bee on field bindweed. Integrative and Comparative Biology 58:E378-E378.

Ohlinger BD, Klinger TS, Davis GT, Hranitz JM. 2018. Innate flower color choice and flower constancy in a solitary bee and a social bee. Integrative and Comparative Biology 58:E390-E390.

Pavlick CR, **Emily BR**, **Erika MJ**, **Rivera-Figueroa V**, **Salaguinto TC**, **Fernandez A**, Hranitz JM, Gonzalez VH, Petanidou T, Tcheulin T, Barthell, JF. 2018. Removal of a specialist pollinator on field bindweed reveals competitive release for a generalist pollinator. Integrative and Comparative Biology 58:E393-E393.

Petersheim JI, Llewellyn HJ, Surmacz CA, Hranitz JM. 2018. Motor responses in honey bees are impaired following exposure to sublethal doses of imidacloprid. Integrative and Comparative Biology 58:E395-E395.

Rivera-Figueroa V, **Loubriel D**, **Johnson M**, Tscheulin T, Petanidou T, Oskay D, Gonzalez VH, Hranitz JM, Barthell JF, Agosto-Rivera JL. 2018. Comparison of the circadian rhythms of two bee pollinators, a generalist and a specialist, of field bindweed. Integrative and Comparative Biology 58:E407-E407.

Salaguinto TC, Rivera V, Gonzalez VH, Rivera JL, Tscheulin T, Petanidou T, Hranitz JM, Barthell JF. 2018. Nectar dynamics of *Convolvulus arvensis* in the Mediterranean ecoregion. Integrative and Comparative Biology 58:E412-E412.

2017-2019 Research Funding

NSF-International REU Grant: Comparative Studies of Bees in the Greek Archipelago. Charlotte Simmons (PI), Charles Abramson (Co-PI), John F. Barthell (Senior Personnel), Victor H. Gonzalez (Senior Personnel), John M. Hranitz (Senior Personnel). Submitted August 2019. Pending.

PASSHE Faculty Professional Development Council Grant. Faculty Research and Development of Insect Pollen Load DNA Analysis Techniques to Investigate Plant-Pollinator Interactions. $9,600 (funded)

BU Mini-Grant. 2018-2019. Research and Development of DNA Sequencing Techniques to Identify Birds Species in Blood Meals of Mosquito Vectors of the West Nile Virus. $3,048. Funded. (Hannah Anderson, Samantha Maywald, Graduate Students).

BU Research and Scholarship Grant. 2017-2018. Does Acute Sublethal Pesticide Intoxication Alter the Honey Bee (Brain) Transcriptome? $8,314. Drs. John M. Hranitz (PI), Cindy A. Surmacz (Co-PI), and Heather J. Llewellyn (MS Biology Graduate Student). Funded.

2016-2017: COST FSA Funding from Dean Aronstam to support start-up supplies for my research lab. $3,000.

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)

2019 Service Activities

Council of Undergraduate Research (CUR) - Research Experiences for Undergraduates Symposium (REUS) Planning Committee (2017-present)

Thesis Advisor (three students): H. Anderson, T. O'Rourke

Thesis Committee Member (four students): C. Collins, H. Llewellyn, S. Maywald

Judith A. Kipe-Nolt
Professor

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 and Service
Student interest in Medical Imaging and Medical Laboratory Science programs remains strong. Recruitment and retention activities demanded a significant time commitment. Forty-two MI and MLS students began clinical programs in 15 different hospital programs in 2019. Expanding clinical options involved communication with program directors, and on-site visits. A group of students visited the Johns Hopkins Hospital Schools of MI in the fall.

Various health professionals and graduate program representatives were invited to give presentations and meet with students to share experiences, information and insights. We thank the following individuals who participated in our Freshmen Seminar series this year: Ken Roszel, Geisinger Radiography; Stephanie McDaniels and Doreen Morgan, Lackawanna Sonography; Kristen Douglass and Monisa Wagner, Geisinger Physician Assistant; Kevin Zajac, PCOM Physician Assistant, Pharmacy, and Medical School; Dom Policare, Physical Therapy; Christine Wheary, UPMC Medical Lab Science; Emily Palen, Geisinger Genetic Counseling; Jason Stack, Duquesne University Pharmacy; and Richard Fritsky, PA Game Commission Biologist.

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

Ph.D. University of South Florida
Biology

Teaching
Integrative Invertebrate Zoology, Concepts in Biology 1 (Laboratory), Human Sexuality, Research in Biology, and Internship in Biology.

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

Too nice of a day to be inside. Holding class on the patio of Hartline Science Center.

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. In addition to these longstanding areas of research, a new interest in the impacts of anthropogenic challenges, such as species introductions, climate change, and pollution with microplastics upon the crayfish of Northeastern Pennsylvania has been fostered by ongoing collaborations with S. M. Hartzell.

Highlights of 2019 were the graduation of our first student completing the Accelerated Master of Science in Biology Program and the continued growth of all aspects of Graduate Studies in Biology.

The students of the *Integrative Invertebrate Zoology* class visit BU alumnus, Jack Carr, the Director of Education at the Adventure Aquarium in Camden, New Jersey.

Publication

Hartzell, S. M. and T. S. Klinger. (in press). Using crayfish burrows to illustrate simple ecological field techniques. American Biology Teacher.

Service Activities

Organized the BAHS Weekly Departmental Seminar Series.
Mace Bearer at the spring and the fall Graduate Commencement Convocations.
Departmental APSCUF Representative.

Candice M. Klingerman
Associate Professor

Ph.D. Lehigh University
Integrative Biology

Teaching:
Introduction to Nutrition, Anatomy and Physiology I 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.

Grants:

2019	Faculty Professional Development Travel Award to attend the Society for Behavioral Neuroendocrinology conference in Atlanta, GA (June 2020).
2018-present	BU COST Faculty Scholarly Activity Award. Effects of the CB1 agonist, anandamide, on the behavior of zebrafish (*Danio rerio*).
2015-2018	BU Research and Scholarship Grant. Food restriction affects reproductive and ingestive behaviors in zebrafish (*Danio rerio*).

Awards:

2019	Undergraduate student Julia Smith won first place in undergraduate research with her poster titled "Effects of the cannabinoid agonist anandamide on the activity of zebrafish" at Bloomsburg University's College of Science and Technology Research Day.

Publications:

Smith, J., A. Shaffer, and C.M. Klingerman. "Anandamide increases the physical activity of zebrafish." *BIOS. A Quarterly J of Biol.* Submitted.

Burroughs, S.E., W. Schwindinger, J. Venditti, T. Trautwein, A. Dalsania, and C.M. Klingerman. (2018). "Prokineticin-2 robustly and reliably influences the sexual and ingestive behaviors of female Syrian hamsters." *Horm Behav.* 106:135-143.

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:

Smith, J., A. Shaffer, and C.M. Klingerman. (2019) "Effects of the cannabinoid agonist anandamide on the activity of zebrafish." Bloomsburg University College of Science and Technology Research Day. (poster). Bloomsburg, PA.

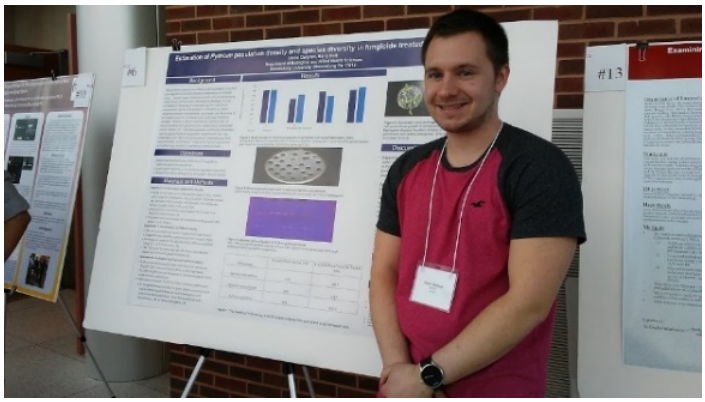
Shaffer, A. and C.M. Klingerman. (2019) "The effects of calorie restriction on the social behavior and reproduction in zebrafish (Danio rerio)." Graduate Student Thesis Proposal (talk). Bloomsburg University. Bloomsburg, PA.

Barry L. Nolt
Assistant Professor

Ph.D. Pennsylvania State University
Plant Pathology

Teaching
Concept 1 Laboratory Instructor, Microbiology Laboratory Instructor, Virology Lecturer, Live Animal Collection Supervisor

Research
My research interests include identifying and characterizing *Pythium* species pathogenic on ornamental flower crops. Results from previous studies indicated that several pathogenic *Pythium* spp. are consistently associated the root rot symptoms pictured below. The virulence of these isolates was found to vary in a cucumber seedling assay. Future studies include developing a screening method for identifying Oriental lily varieties that are resistant to *Pythium* root rot.



Advisement
Our medical imaging internship partnership with Geisinger Medical Center continues to grow. I assisted in the interview and selection process of qualified interns from the large number of applicants. I also served as the academic supervisor for 12 medical imaging interns in 2019.

Steven T. Rier
Professor

Ph.D. University of Louisville
Environmental Biology

Teaching
Freshwater Biology, Ecosystem Management, Analysis of Ecological and Environmental Data using R (Current Topics in Biology), Freshman Seminar in Biology, Concepts 1 laboratory, Concepts 2 laboratory

Research Interests
Stream Ecosystem Ecology, Algal and Microbial Ecology, Water Pollution

Dr. Rier mentored five Master's Students. Projects included:

- Phosphorus pulses and polyphosphate dynamics in streams
- Agriculture impacts on stream ecosystem function and the development of rapid functional indicators
- Algal priming of course particulate organic matter decomposition in streams
- Effects of Cladophora on stream macroinvertebrate communities
- Real-time monitoring of 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

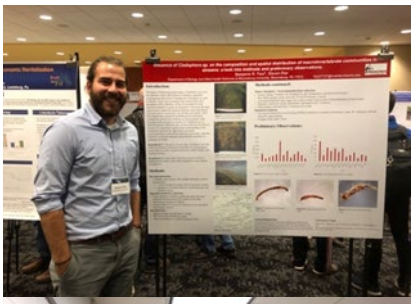
- Evaluating the climate resilience of headwaters and potential downstream effects. PA DEP Growing Greener, in collaboration with The Academy of Natural Sciences of Drexel University, pending ($37,704, BU Budget)
- Measuring performance of best management practices installed as part of the implementing precision conservation in the Susquehanna River Watershed. National Fish and Wildlife Federation, ($115,000, BU budget)
- Water quality investigations at Bloomsburg University: Summer 2018. Degenstein Foundation ($25,000)

Invited scientific talks

- Microbial Determinants of Phosphorus Transport Workshop, Pennsylvania State University, January 2019
- Central Michigan University Department of Biology Seminar, April 2019

Presentations at Scientific meetings (2019 only, bold denotes BU student mentored by STR)

- **Ashberry E. L.** Understanding the environmental context of algal priming of coarse particulate organic matter decomposition in streams. *Society for Freshwater Science, May* 2019. Salt Lake City, UT.
- Rier, ST. Factors influencing polyphosphate storage in stream biofilms across a phosphorus gradient. *Society for Freshwater Science, May* 2019. Salt Lake City, UT.
- Rier, ST. Factors influencing polyphosphate storage in stream biofilms across a phosphorus gradient. Susquehanna River Symposium, Lewisburg, PA. October 2019
- **Paul, B. R.** Influence of *Cladophora sp.* on the composition and spatial distribution of macroinvertebrate communities in streams: a look into methods and preliminary observations. Susquehanna River Symposium, Lewisburg, PA. October 2019









William F. Schwindinger
Assistant Professor

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

Teaching
Pharmacology for the Health Sciences, Medical Terminology, Pre-Med Seminar, Current Topics in Biology – Redesigning Life

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 α-subunit and a βγ-dimer; each of these subunits is encoded by a gene family. My aim is discover the specific roles of individual G-protein γ-subunits in signal transduction.

Publications
- Burroughs S, Schwindinger WF, Venditti JJ, Trautwein T, Dalsania A, Klingerman CM (2018) Prokineticin-2 and ghrelin robustly influence the sexual and ingestive behaviors of female Syrian hamsters. *Horm Behav.* **106**:135-143.

Mentored Student Presentations
None

Grants
- COST Faculty Scholarly Award, May 2017, $5000
- Bloomsburg University, Research and Scholarship Mini-Grant, January 2019 – February 2020, $3500,
  "Targeted Disruption of a G-protein Gamma-Subunit Gene in Chinese Hamster Ovary Cells"

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

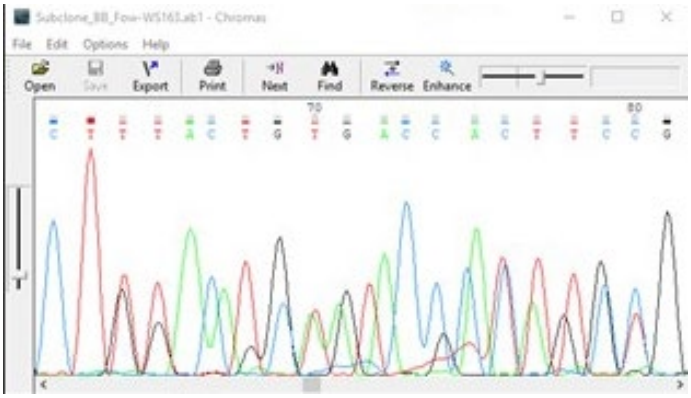


Figure 1. Sanger Sequencing chromogram showing compound heterozygous mutations in second coding exon of Gng10 in Chinese Hamster ovary cells.

Cynthia Surmacz
Professor

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

Teaching
Concepts in Biology 1 lecture, Anatomy and Physiology lectures and laboratories; Current Topics in Biology: Type 2 Diabetes Mellitus. Recipient, CoST 2019 Teaching Award.

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 the health of the hive 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 cellular stress. This research has involved several BAHS students. Undergraduates Andrew Cross (pictured at right), Rachel Nenstiel and Taylor Bozza, and graduate student Heather Llewellyn presented their results this year at local regional, and national meetings.

Grants

- Bloomsburg University Mini-Grant: Assessing Oxidative Stress in Honey Bees Exposed to Sublethal Doses of Neonicotinoid Pesticides. Surmacz, C. and Hranitz, J.

Student Grants

- Commonwealth of Pennsylvania University Biologists. Andrew Cross. Effects of sublethal doses of neonicotinoid pesticides on glutathjione-S-transferase activities in honey bee brains
- Beta Beta Beta Research Foundation. Andrew Cross. Assessing Oxidative Stress in Honey Bees after Exposure to Neonicotinoid Insecticides

Presentations:

- Society for Integrative and Comparative Biology Annual Meeting. H. Llewellyn, E. Smith, J.Hranitz, C. Surmacz, Jan 2019. Tampa, FL.
- Commonwealth of PA University Biologists Annual Meeting. A. Cross, E. Smith, J. Hranitz and C. Surmacz, April 2019. Edinboro University. First Prize poster: Andrew Cross
- Tri-Beta Northeast District 2 Convention. A. Cross, E. Smith, J.Hranitz, C. Surmacz. March 2019. Bloomsburg University.
- College of Science and Technology Research Day. April 2019. A. Cross, E. Smith, J.Hraniz, C. Surmacz. Honorable Mention: Andrew Cross; December 2019, R. Nenstiel, T. Bozza, J.Hranitz, and C. Surmacz.
- PASSHE Undergraduate Research Symposium. R. Nenstiel, T. Bozza, J.Hranitz, and C. Surmacz. Nov 2019. Kutztown University.

Campus and Community Service Activities:

- Co-Advisor, Tri-Beta Biology Honor Society
- Secretary, The Honor Society of Phi Kappa Phi
- Honors Program Advisory Committee
- Health Sciences Symposium Committee
- Praxis National Advisory Committee for Biology, Educational Testing Service
- Co-chair, Pre-professional Committee
- Chair, BAHS Activities and Awards Committee

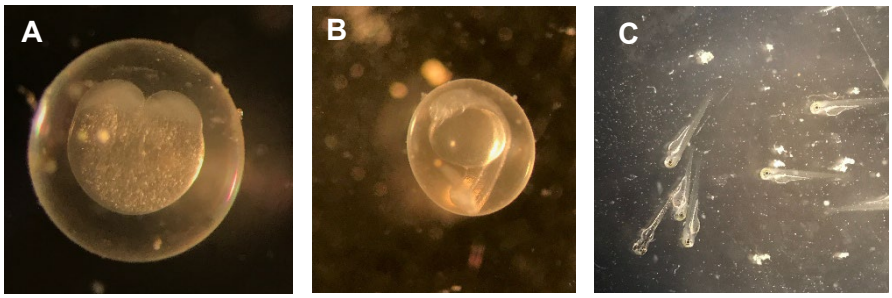
Jennifer J. Venditti
Associate Professor & Allied Health Coordinator
Director, Health Sciences Learning Community

Ph.D. Lehigh University
Molecular Biology

Teaching
Human Biology, Introduction to Health Care Practice, Health Care Practicum, Health Sciences Seminar

Research Interests
Current research in my laboratory is focused on:

1. evaluating the reproductive role of α-L-fucosidase in *Danio rerio* (Zebrafish)
2. evaluating the reproductive role of synapsin proteins in Syrian hamsters



Micrographs above represent *Danio rerio* embryos at 0.75 (A), 24 (B), and 72 (C) hours post fertilization.

Student Research Presentations

- McDowell, MC and Venditti JJ. "Fishing for alpha-L-fucosidase: Evaluating Enzyme Activity in Zebrafish (Danio rerio). 6th Annual PASSHE Student Research Conference in STEM, Kutztown, PA (November 2019).
- Ryver RN, Coleman WL, and Venditti JJ. "Investigating the presence of synapsin proteins in hamster sperm." Beta Beta Beta Northeast District Convention (March 2019) and Bloomsburg University College of Science and Technology Research Day, Bloomsburg, PA (April 2019).
- Encarnacion LE and Venditti JJ. "Investigating the *in vitro* Effects of Lycopene on Human Cervical Cancer Cells." Bloomsburg University College of Science and Technology Research Day, Bloomsburg, PA (April 2018).
- Chamberlin LL, Venditti JJ, and Coleman WL. "Investigating the presence of synapsin III in human sperm cells." Bloomsburg University COST Research Day (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.
- 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).

Publications

- *Burroughs S, Schwindinger WF, Venditti JJ, Trautwein T, Dalsania A, Klingerman CM. 2018. Prokineticin-2 and ghrelin robustly influence the sexual and ingestive behaviors of female Syrian hamsters. Hormones and Behavior 106: 135-143.*

- *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 11(4): 625 - 632.*

Grant Funding

Bloomsburg University Faculty Research & Scholarship Minigrant — April 2019
"Evaluating alpha-L-fucosidase Activity and its Potential Role in Reproduction Using Zebrafish (*Danio rerio*)" — $3,500
PI: Jennifer J. Venditti

Bloomsburg University Margin of Excellence Grant to Drs. Venditti and Coleman — May 2018
"Investigating the Reproductive Role of Synapsin Proteins Using a Hamster In Vitro Fertilization Model System" — $10,000

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

Honors

Bloomsburg University — December 14, 2019
Undergraduate Commencement Speaker

Service Activities

- Co-Advisor: Biology & Allied Health Sciences Club
- Chair: Health Sciences Symposium Committee
- Community Science Programming: Children's Museum of Bloomsburg, Danville Primary School, Liberty Valley Elementary, Girl Scouts of America, Boy Scouts of America
- Science Fair Judge: Bloomsburg Area Middle School, Bloomsburg, PA

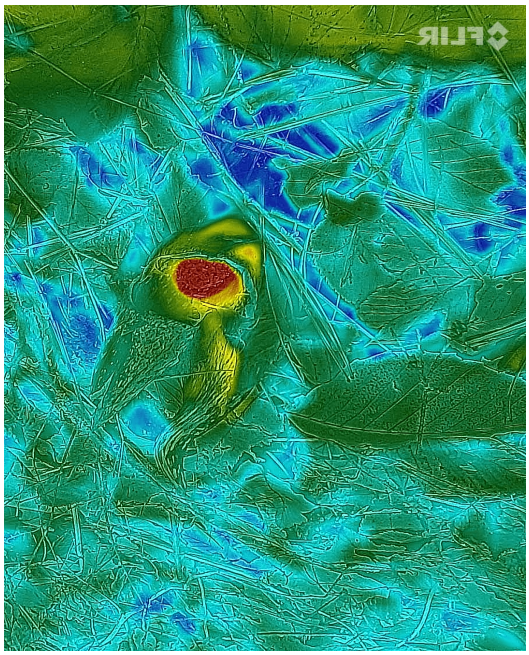
Kevin J. Williams
Assistant Professor

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 2019 Dr. Williams has been working on studying the ability of skunk cabbage to be exothermic



An infrared-image of a Skunk cabbage. The flowering core is red because it is 2-5-degrees C warmer than the rest of the plant.

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
Concepts in Biology 2 lecture and lab, Current Topics in Biology: Lyme Disease, Ecology lab, Concepts in Biology 1 lab

Research Interests
Foraging Behavior, Mammalogy, Forest Ecology, Biology Education

In 2019, Dr. Wood collaborated with undergraduate students to document behavior and space use by grey squirrels and eastern chipmunks on campus. She also collected acorns from a diverse group of oak species. After initial processing at BU, the acorn samples were sent to a colleague at Latvia University for Life Sciences and Technologies for additional analysis.

Recent 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 29(2):19-42.

Temporary Faculty

Jonathan Bobek
Instructor

M.S. Biology, Arizona State University

Teaching
Anatomy and Physiology I & II Laboratories

Research Interests
Insect Forager Behavior, Behavioral Genetics, Oncology, Cancer Care Delivery Research, Health Education.

Current Employment
Clinical Trials Project Coordinator, Geisinger Cancer Institute

Stephanie Buczkowski
Instructor

M.S. Biology, Bloomsburg University

Teaching
Anatomy & Physiology I laboratories

Research Interest
Cancer biology, Embryogenesis, Genetics

Current Employment
Project Coordinator, Geisinger Medical Center (Weis Center for Research)

Deborah Heitzman
Instructor

M.S. Biology, Bucknell University

Teaching
Courses and Labs that I taught at Bloomsburg University include the following: Nutrition, Anatomy and Physiology I & II labs, Concepts in Biology I lab and Anatomy and Physiology of the Head, Neck and Thorax lab.

Service Activities
I provide academic support every semester for ABLE which is an Academic Biology Learning Environment located at Columbia Hall 's Living and Learning Community. ABLE faculty members provide tutoring in Anatomy and Physiology I, Anatomy and Physiology II and Concepts in Biology 1. Additionally, there are many laboratory models, microscopy slides and books that serve as a source of review before laboratory exams. I participate in AP I Lab and APII lab review sessions for students when needed. I also support the Biology department with my participation with Mock interviews for students.

Sean Hartzell
Instructor

M.S. Biology, Bloomsburg University

Teaching
Human Biology, Concepts in Biology 1 Labs, Anatomy and Physiology 1 Labs

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

Recent Publications

- Hartzell, S.M. and Klinger, T.S. (In Press). Measuring Crayfish Burrows in a Simple Ecological Field Exercise. *The American Biology Teacher*.
- Hartzell, S.M. 2019. Sexual Dichromatism of Dorsal Stripes in "Red-back" Morph Individuals in a Population of Eastern Red-backed Salamanders (*Plethodon cinereus*). *Herpetological Review*. 50(3):459-462.
- Hartzell, S.M. 2019. A Salamander Survey of the Turkey Hill Oxbow, Columbia County, Pennsylvania, with Comparison to Historic Records from an Institutional Collection. *Bios.* 90(1):42-46.

- Hartzell, S.M. 2019. Observation of a Common Crayfish (*Cambarus bartonii bartonii*) Overwintering in a Terrestrial Microhabitat. *Northeastern Naturalist*. 26(3):N35- N37.
- Hartzell, S.M. 2019. A Herpetological Survey of the Chincoteague Bay Field Station Campus in Accomack County, Virginia. *Catesbeiana.* 39(1):10-14.
- Hartzell, S.M. 2019. Sexual Dichromatism in "Rusty" Spots of a Population of *Faxonius rusticus* (Girard). *Freshwater Crayfish*. 24(1):39-42.
- Hartzell, S.M. 2019. *Chrysemys picta* (Painted Turtle). Mortality. *Herpetological Review.* 50(3):566-567.
- Hartzell, S.M. 2019. *Chelydra serpentina* (Snapping Turtle). Mortality. *Herpetological Review.* 50(3):566.
- Hartzell, S.M. 2019. Herpetological Observations at the Bloomsburg Town Park, Columbia County, Pennsylvania. *Bulletin of the Chicago Herpetological Society*. 54(9):177-180.
- Hartzell, S.M. 2019. "The Environment: A History of the Idea" (Book Review). *The Canadian Field-Naturalist*. 133(1):76.

Recent Presentations

- Drummer, K., Anderson, H., Ashberry, E., Blake, J., Collins, C., Davis, K., Hartzell, S.M., and Klinger, T.S. 2019. Morphological Differences between a Native, Established Invasive, and a Recently Invading Crayfish in Eastern Pennsylvania. The 14th Annual Susquehanna River Symposium, Lewisburg, PA.
- Davis, K., Paul, P.R., Hartzell, S.M., Ashberry, E., Mywald, S., Collins, C., Drummer, K., Anderson, H., Koch, R., Blake, J., Smith, S., and Klinger, T.S. 2019. Description of Common Crayfish (*Cambarus bartonii bartonii*) Burrows in Jakey Hollow Natural Area, Columbia County, Pennsylvania. The 14th Annual Susquehanna River Symposium, Lewisburg, PA.
- Anderson, H., Maywald, S., Ashberry, E., Blake, J., Koch, R., Smith, S., Davis, K., Collins, C., Drummer, K., Klinger, T.S., and Hartzell, S.M. 2019. Presence of Branchiobdellidan Ectosymbionts on three Crayfish Species in the Susquehanna River Basin. The 14th Annual Susquehanna River Symposium, Lewisburg, PA.
- Wadena, L.V., Hartzell, S.M., and Klinger, T.S. 2019. Autumn Gut Contents of Allegheny Crayfish and rusty Crayfish Introduced in Eastern Pennsylvania. Susquehanna Valley Undergraduate Research Symposium, Lewisburg, PA.

Evan Houston
Instructor

Ph.D. University of Washington.
Immunology

Teaching

Cell Biology laboratories, Anatomy and Physiology 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 1* 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 –
Brooke Kremer, Cassandra Razzis, Jacquelynn Formosa, Oliva Yoder, and Sweetie Patel

Graduate Program in Biology

The past year has been a period of sustained growth for the Master of Science in Biology Program. Through the maturation of new program initiatives and continuing recruitment efforts, we have experienced sustained increases in both applications and admissions. The Accelerated Combined Master's and Bachelor's Degree Program has sparked tremendous interest. The Department of Biological and Allied Health Sciences and the Department of Environmental, Geographical and Geological Sciences continue to developing means to allow Environmental Geoscience students to seamlessly join the Master of Science in Biology Program. We have been able to recruit more Graduate Assistants, who now fill more diverse and more visible roles in the Department. These Graduate Assistants, while still filling their tradition roles as laboratory assistants and tutors, have now been able to accept additional duties research assistants to faculty, mentors to undergraduate researchers, organizers of regularly scheduled study groups, curators and collections developers, recruiters, and etc. Having these graduate students engaged across the spectrum of efforts of the Department has increased the effectiveness of undergraduate education in foundational courses and has 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 numerous scholarly works in 2019, clearly illustrating the sustained productivity of our graduate students and their faculty mentors.

Current Graduate students

Hannah Anderson
Master of Science
Graduate Assistant

Major Professor: Dr. John Hranitz
Thesis Committee Members: Mr. Mike Hutchinson, Dr. Clay Corbin, and Dr. Karl Henry

Education:
B.S. Biology and German. University of Nebraska – Lincoln, Lincoln, NE

Luzerne County Community College
EMT Certification

Hannah Anderson is a second-year Bloomsburg University graduate student from Danville, Pennsylvania. Her research thesis is in collaboration with the Pennsylvania Department of Environmental Protection (PA DEP) and aims to elucidate the feeding preferences of two ornithophilic mosquito species (*Culex pipiens* and *Culex restuans*) and better understand transmission dynamics of West Nile virus (WNV). Hannah performs DNA isolation, precipitation, resuspension, amplification, and purification on the blood meals of female mosquitoes to determine the host species. DNA quality checks are run by gel electrophoresis and spectrophotometry. Results will be analyzed with records of avian distribution, abundance and competencies as hosts to test the dilution hypothesis and determine potential reservoir populations of WNV.

Presentations

- **The Society for Integrative and Comparative Biology, Austin, TX.** *Jan 3-7, 2020*

"Avian Host Diversity Detected in Blood Meal Analysis of Two Species of *Culex* Mosquitos Collected from Urban Habitats in Pennsylvania". **H.B. Anderson**, M. Hutchinson, C. E. Corbin, J.M. Hranitz

- **Susquehanna River Symposium, Lewisburg, PA** *Oct 18, 2019*
  "Presence of Branchiobdellida Ectosymbionts on Three Crayfish Species in the Susquehanna River Basin" **H.B. Anderson**, S. Maywald, E. Ashberry, J. Blake, R. Koch, B. Paul, C. Collins, K. Drummer, S. Smith, K. Davis, S.M. Hartzell, T.S. Klinger
- **Pennsylvania Association of Wildlife Rehabilitators**
  27th Annual Wildlife Rehabilitation and Education Conference *Mar 23, 2019*
  "Preliminary studies of avian hosts for *Culex* vectors of West Nile virus in areas of human cohabitation in Pennsylvania" **H.B. Anderson**, M. Hutchinson, J.M. Hranitz
- **College of Science and Technology Research Day, Bloomsburg, PA** *Dec 7, 2018*
  "Impacts of Pipeline Construction on Water Quality of Little Fishing Creek (BLOOMSBURG, PA)" **H.B. Anderson**, S. Rier
- **Pennsylvania Vector Control Association, Harrisburg, PA** *Oct 26, 2018*
  "Molecular Techniques to Identify Avian Hosts in Blood Meals of Mosquito Vectors of West Nile Virus in Pennsylvania" **H.B. Anderson**, M. Hutchinson, J.M. Hranitz
- **Rocky Mountain Conference of Parasitologists, Ogallala, NE** *Sep 9, 2016*
  "An Examination of Cestodes and a Potential New Species of *Oöchoristica* (Cestoda: Linstowiidae) from Western Rattlesnakes (*Crotalus viridis*) Collected at Cedar Point Biological Station" **H.B. Anderson**, S.L. Gardner

Funding

- Charlotte Mangum Student Support Award – The Society for Integrative and Comparative Biology (SICB). Covered housing costs to attend The SICB 2020 Annual Meeting in Austin, TX. January 3-8, 2020. $625
- Graduate Student Travel Grant – Bloomsburg University. Towards costs of traveling to and attending the SICB 2020 Meeting. Oct 2019. $300
- Graduate Assistantship – Bloomsburg University. Tuition waiver and stipend for work as a graduate assistant. Aug 2018 – Present. $14,044

2019 Teaching Laboratory Preparation

Microbiology, Concepts of Biology I, honeybee colony maintenance, Anatomy and Physiology I & II

2019 Tutoring Assignments

Concepts of Biology I & II

Service Activities

2019 Water Education Day - Columbia County Conservation District
Undergraduate School Fair - Bloomsburg University
Freshmen Meet-and-Greet - Bloomsburg University
College of Science and Technology New Student Orientation - Bloomsburg University

Emily Ashberry
Master of Science
Graduate Assistant

Major Professor: Dr. Steven Rier
Thesis Committee Members: Dr. Lauri Green and Dr. Klinger

Education:
B.S. Biology – Bloomsburg University
M.S. Biology – Bloomsburg University (2019)

Emily Ashberry is from Shippensburg, Pennsylvania. She received her Bachelor's degree in biology from Bloomsburg University. She has always enjoyed spending time in nature through camping, hiking, and boating with her family. These interests led Emily to biology, and her research interests are in stream ecology. Her thesis research was looking at the environmental conditions in which algae may speed up the decomposition of leaf litter in streams. Her thesis included field manipulations across Central Pennsylvania as well as lab manipulations in a series of artificial streams. Emily defended her thesis in September and graduated in December 2019 completing the 3+2 Master's program.

Research Interests:
I am interested in freshwater and marine ecology. My master's research focused on the microbial interactions that influence the decomposition of leaf litter in streams.

Presentations

- Emily Ashberry and Dr. Steven Rier, Understanding the environmental context of algal priming of coarse particulate organic matter (CPOM) decomposition, Society of Freshwater Sciences Annual Meeting, Salt Lake City, Utah, May 2019.
- Emily Ashberry and Dr. Steven Rier, Understanding the environmental context of algal priming of coarse particulate organic matter (CPOM) decomposition, Thesis Defense, Bloomsburg University, September 2019.

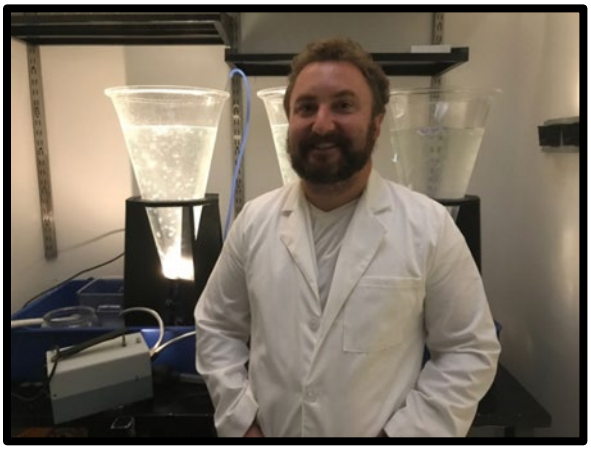
Funding
Project was funded by Susquehanna Heartland Coalition for Environmental Studies and the Degenstein Foundation

2019 Teaching Laboratory Preparation
Concepts of Biology II

2019 Tutoring Assignments
ABLE hours

Service Activities

- Provided tours of Hartline
- Provided information about the Accelerated Master's Program and the biology department during tour and orientations days



Ty Basinger
Master of Science
Graduate Assistant

Major Professor: Dr. Lauri Green

Education:
B.S Biology, Azusa Pacific University

Ty Basinger is from Hughesville, Pennsylvania. After graduation from High School Mr. Basinger moved to the greater Los Angeles area to attend university and pursue a career in Biology. Upon graduation from University Mr. Basinger attained a position at the California Institute of Technology where he did various research support tasks, including husbandry and primate psychophysics experiments before obtaining a position in Professor Lea Goentoro's lab studying Scyphomedusae(jellyfish). In this position Mr. Basinger setup a lab to house and care for jellyfish, conducted many experiments on several species of jellyfish and was an author on several papers. Mr. Basinger has returned to the greater Bloomsburg area to obtain his Masters in Biology at Bloomsburg and hopefully pursue a career in environmental consulting and possibly higher education.

Research interests:
Cnidaria, wetlands, and regeneration

Publications:

- Abrams, M. J., Basinger, T., Yuan, W., Guo, C. L., & Goentoro, L. (2015). Self-repairing symmetry in jellyfish through mechanically driven reorganization. *Proceedings of the National Academy of Sciences*, *112*(26), E3365-E3373.
- Nath, R. D., Bedbrook, C. N., Abrams, M. J., Basinger, T., Bois, J. S., Prober, D. A., ... & Goentoro, L. (2017). The jellyfish Cassiopea exhibits a sleep-like state. *Current Biology*, *27*(19), 2984-2990.

2020 Teaching Laboratory Preparation
Concepts in Biology 1 Laboratory

2020 Tutoring Assignments
ABLE Center

Martina Bennick
Master of Science
Graduate Assistant

Major Professor: Dr. Steven Rier
Thesis Committee Members: Dr. Cynthia Venn and Dr. Adrian Van Rythoven

Education:
B.S. Environmental Geoscience, Bloomsburg University

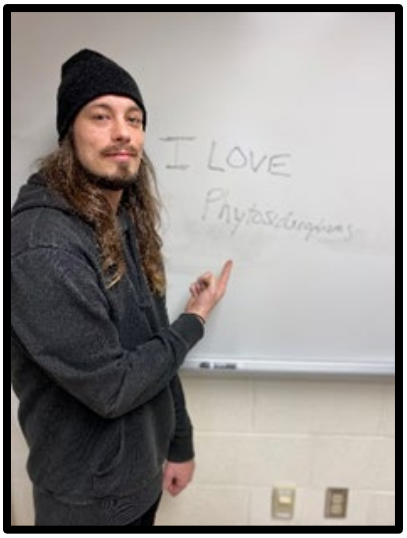
Martina Bennick is from Danville, Pennsylvania. Ms. Bennick plans to work with Dr. Rier on the effects of acid mine drainage and phosphorus limitation in freshwater algal systems. After completing her Master's research, Martina plans to continue her education and earn a Ph.D. Her ultimate goal is to work in the aerospace industry.

Research Interests:
Stromatolites, algal systems, stream ecology, freshwater biology

Presentations:
Bennick, M. & Venn, C. & Rythoven, A. 2019. Determining the origin of intracameral deposits in the Orthocerid genus *Arionoceras*. Geological Society of America Annual Meeting, Phoenix, AZ. **Geobiology and Geomicrobiology Student Award Winner**.

2019 Teaching Laboratory Preparation
Concepts in Biology I, Advanced Soils, Water Resources Management

2019 Tutoring Assignments
ABLE Center



Jerome Edward Betz III
Master of Science

Major Professor: Dr. George Davis and Dr. Abby Hare-Harris
Thesis Committee Members: Dr. Toni Bell and Dr. Kevin Williams

Education:
B.S. Biology, Bloomsburg University
A.S. Biology, Lehigh Carbon Community College, Schnecksville, PA

Jerome Betz is from Tamaqua, Pennsylvania. Jerome's thesis is focused on the molecular mechanisms of iron uptake, specifically strategy II acquisition of ferric iron in oats (*Avena sativa*) through the AvsYS1 protein. AvsYS1 is a ferric iron/phytosiderophore transport protein expressed in oats. To study strategy II iron acquisition, yeast complementation assays have been used, as well as, transgenic tomato plants. The

ultimate goal of this research is to understand iron uptake in order to modify plants to support growth in high pH soils where ferric iron oxyhydroxide polymers exist. This research could help feed the 815+ million hungry people in the world, and even help mitigate iron deficiency anemia in the 2 billion people suffering from the condition. Iron is a rate limiting nutrient in plant growth, and is quite hard to obtain in normal diets in third world countries. When he isn't in the lab, Jerome plays bass guitar for the artist Kulick, and for the band Another Day Dawns. Once his Master's research is complete, Jerome plans on pursuing a PhD in molecular biology with the ultimate goal of a teaching at a university.

Research interests:
Molecular mechanisms of iron uptake

Presentations:

- Betz III, J.E. and G. T. Davis. 2017. Construction and Evaluation of Mutagenized Avenic Acid Iron Phytosiderophore pAvsYS1 Sal. Beta Beta Beta Conference, Moravian University, PA.
- Betz III, J.E. and G. T. Davis. 2017. Using Targeted Mutagenesis and Yeast Complementation to Evaluate the Functionality of the AvsYS1 Transporter Protein. Undergraduate Research Presentation 2017, Bloomsburg, PA.
- Betz III, J.E. and G. T. Davis. 2018. Functional and Structural Analysis of AvsYS1: A Ferric Iron-Phytosiderophore Transport Protein. Commonwealth of Pennsylvania University Biologists. Mansfield, PA

Funding
Betz III, J. E. and G. T. Davis. 2017. Professional Experience Grant. ($2000)

2019 Service Activities
Tour guide for prospective student day in Hartline

Mary Ann Bogert
Master of Science
Graduate Assistant

Major Professor: Dr. Clay Corbin

Education:
B.S. Wildlife Biology, Keystone College, La Plume PA
A.S. Biology, Luzerne County Community College, Nanticoke PA

Mary Ann Bogert is from Wilkes Barre, Pennsylvania. As an undergraduate studying general biology, Ms. Bogert quickly realized her passion for avian ecology. This prompted her to earn her Bachelor's degree in Wildlife Biology from Keystone College, Pennsylvania in 2019 where she conducted her Capstone research on turkey vultures. During this time, she was also treasurer of the Biology Club and the student chapter of The Wildlife Society. Ms. Bogert is joining Bloomsburg University as a Graduate Assistant for the Spring 2020 semester. She plans on conducting her Thesis research on short-eared owls because of their declining populations across Pennsylvania, and many regions of the United States. After graduation, she would like to work with a government agency to protect avian species and their habitats.

Scholarly Research Interests:
Avian ecology, wildlife conservation, endangered species and invasive species

Presentations
Bogert, Mary A. 2018. Turkey Vultures (*Cathartes aura*) Use Smell to Locate Arboreal Nestling Carrion Compared to Fresh Carcasses. Keystone College, La Plume, PA.

Funding
Bogert, Mary A. 2018. Turkey Vultures (*Cathartes aura*) Use Smell to Locate Arboreal Nestling Carrion Compared to Fresh Carcasses. Keystone College, La Plume, PA ($700).

2019 Teaching laboratory preparation
Concepts in Biology 1

2019 Tutoring assignment
ABLE

Sarah Buckley
Master of Science

Major Professor: Dr. Thomas Klinger
Thesis Committee: Dr. Steven Rier

Education:
B.A. Biology – Natural History, Bloomsburg University

Sarah Buckley, is from Oxford, Pennsylvania. New to the Biology M.S. program, Ms. Buckley's thesis project will consist of creating environmental education material and displays. She found her passion for teaching others about the environment by participating in the Pennsylvania Envirothon program for over twelve years. This led her to the Biology program at Bloomsburg University, and her internship with the DCNR at Black Moshannon State Park in summer 2019. Ms. Buckley plans to continue her internship this summer, and work with Pennsylvania State Parks to develop and create educational displays for Environmental Learning Centers.

Scholarly Research Interests:
Environmental Education, freshwater biology

Caitlyn Collins
Master of Science
Graduate Assistant

Major Professor**:** Dr. Thomas Klinger
Thesis Committee Members: Dr. Lauri Green, Dr. John Hranitz, and Dr. Cynthia Venn

Education:
B.S. Marine Science and General Biology, East Stroudsburg University, East Stroudsburg PA

Caitlyn Collins is from Philadelphia, Pennsylvania. She received her Bachelor's degrees in Marine Science and General Biology from East Stroudsburg University. Her interests in marine invertebrates and climate change started during her undergraduate career, when she conducted research on how starfish respond to varying degrees of hypoxia. Her thesis research explores the thermal tolerance of sea urchins and how it affects their feeding rates and absorption efficiencies. A field study was also conducted and the environmental implications to their behavioral changes will be evaluated. She compared two species of sea urchins *Eucidaris tribuloides* and *Echinometra lucunter*. The laboratory part of the research was conducted at Bloomsburg University by exposing the sea urchins to four different temperatures, increasing to the highest temperature predicted in 2100 by the IPCC's 2013 annual report. The field work was done in Roatan, Honduras and consisted of a field survey using the roving diver method. This will help predict how sea urchins feeding rate and activity will changes due to increased temperatures and how that may impact their environments in near future sea surface temperatures. After completing her Master's research, Caitlyn plans to further her education and earn a Ph.D., with the ultimate goal of working for a government agency.

Research Interests:
Marine biology, physiological ecology

Presentations

- C. Collins, K. Drummer, H. Anderson, E. Ashberry, J. Blake, K. Davis, S. Smith, R. Koch, S. Maywald, B. Paul, T. S. Klinger, & S. M. Hartzell. 2019. Morphological Differences Between a Native, an Established Invasive, and a Recently Invading Crayfish in Eastern Pennsylvania. Delaware Watershed Research Conference.
- C. Collins, K. Drummer, H. Anderson, E. Ashberry, J. Blake, K. Davis, S. Smith, R. Koch, S. Maywald, B. Paul, T. S. Klinger, & S. M. Hartzell. 2019. Morphological Differences Between a Native, an Established Invasive, and a Recently Invading Crayfish in Eastern Pennsylvania. Bloomsburg University of Pennsylvania College of Science and Technology Research Day.
- C. Collins. 2018. Zooplankton as an Indicator of Trophic State of a Lake. Bloomsburg University of Pennsylvania College of Science and Technology Research Day.
- C. Collins. 2016. Comparison of Knowledge about Horseshoe Crabs Based on Proximity to Shore. East Stroudsburg University of Pennsylvania Annual Student Research Symposium.

Funding

- C. Collins. 2019. A comparison of the thermal tolerances of the sea urchins Eucidaris tribuloides and Echinometra lucunter (Echinodermata: Echinoidea): What the Caribbean can teach us about the potential impacts of climate change. Office of Research and Development, Bloomsburg University. Graduate Student Thesis Research Grant. ($500)

- C. Collins. 2019. The thermal tolerance and distribution of the sea urchins Eucidaris Tribuloides and Echinometra lucunter in the Florida Keys. Bloomsburg University Professional Experience Grant. ($1,300)

2019 Teaching Laboratory Preparation
Integrative Invertebrate Zoology, Integrated Physiology Laboratory, Concepts in Biology I & II

2019 Tutoring Assignments
ABLE Center
Concepts of Biology I (Biology 114)

2019 Service Activities
Bloomsburg Graduate School Fair (Recruitment table)
Mentoring undergraduate researchers

Rachel Daku
Master of Science
Graduate Assistant

Major Professor: Dr. Steven
Thesis Committee Members: Dr. Lori Green, and Dr. Kipe-Nolt

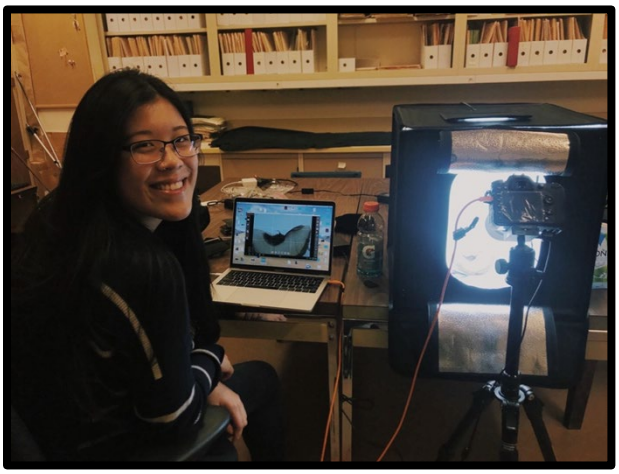
Education:
B.S. Ecology, Susquehanna University, Selinsgrove PA

Rachel Daku is from Selinsgrove, Pennsylvania. She got her bachelors in Ecology from Susquehanna University in 2015. She has previously done research in Diatom community structure across a transect of the Susquehanna River. Currently she is working with Dr. Rier on the uptake and storage of phosphorus across different algae taxa.

Research Interests
Stream ecology, freshwater biology

2019 Teaching assignments
Concepts in Biology I

2019 Tutoring assignment
ABLE Center



Keara Drummer
Master of Science
Graduate Assistant

Major Professor: Dr. Alan Gishlick
Thesis Committee Members: Dr. Clay Corbin and Dr. Thomas Klinger

Education:
B.S. Environmental Geological and Geographical Sciences in Environmental Science, Bloomsburg University

Keara Drummer is from Catasauqua, Pennsylvania. She received her Bachelor's Degree in Environmental Geoscience from Bloomsburg University of Pennsylvania. She assists in the care of the biological, geological and paleontological collections at BU. She is working towards her Master's Degree in Biology to become more qualified to work with more variety of natural history collections. Her thesis is investigating hypotheses of sexual selection and polypheniesm in extinct trilobites. *Walliserops* presence in collections are few and far between. To obtain her data, she has traveled all over the world in search of them to photograph. She will be performing biomechanical and morphometric measurements using photogrammetry. She will look into the possibility that the genus *Walliserops* represents one species exhibiting sexual polyphenism with major and minor males morphs and that their exaggerate "fork" structure was used in intraspecific combat. This research may help clarify one of many evolutionary mysteries from the Paleozoic era.

Research interests
Paleontology, morphometrics, trilobites

Presentations
- **Drummer KY**, Gishlick AD. "*Using Photogrammetry to Produce Morphometric Datasets for Comparative Paleobiology*". Presented at the PASSHE Student Research Conference in Science, Technology, Engineering, and Mathematics, Kutztown University, Kutztown, PA, November 2, 2019
- **Drummer KY**, Anderson H, Ashberry E, Blake J, Collins C, Davis K, Smith S, Koch R, Maywald S, Paul B, Klinger TS, Hartzell SH. "*Morphological Differences Between a Native, an Established Invasive, and a Recently Invading Crayfish in Eastern, Pennsylvania*". Poster presented at Susquehanna River Symposium, Bucknell University, Lewisburg, PA, October 18, 2019.

Funding
- Drummer, K. Bloomsburg University Professional Experience Grant covering travel to get specimen data, July 2019, Alberta, Canada and Barcelona, Spain. ($2000)
- Drummer K. Bloomsburg University Thesis Grant covering software and photography equipment materials needed for research, March, 2019. ($465)

2019 Teaching Laboratory Preparation
Concepts of Biology I, Introduction to Paleontology, Museum Science

2019 Tutoring Assignments
ABLE Center

2019 Service Activities
Open House guides
Mentoring undergraduate volunteers in collections
Volunteer researcher in Ornithology

Rodelin Duteste
Master of Science
Graduate Assistant

Major Professor: Dr. William Schwindinger
Committee members: Dr. Carl Hansen and Dr. Angela Hess

Education:
B.S. Biology, Shippensburg University, Shippensburg PA

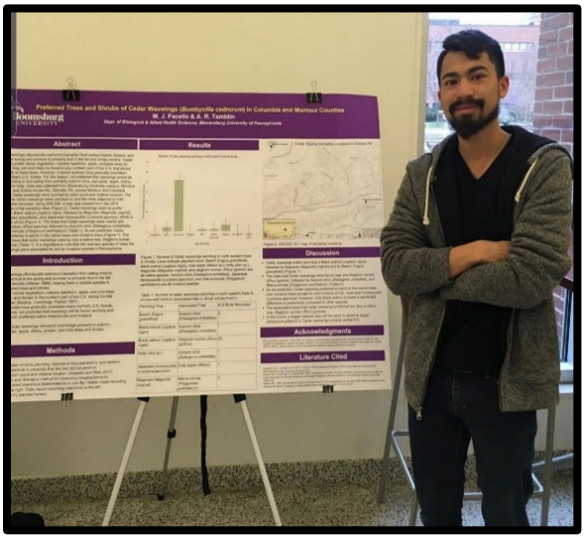
Rodelin Duteste is from Baraderes, Haiti. Mr. Duteste's interest in biology started at an early age when he once noticed a massive die-off of domesticated chicken back in his hometown. Having lived and grown up on a farm where agriculture and animal farming were the main way of sustaining life, he has been exposed to many circumstances that influenced him toward becoming a biologist. He has witnessed many animals getting sick and some that have died from seasonal diseases. Sometimes he would dissect animals in the hope of finding the problems. Unfortunately, at that time, he did not have a background knowledge of biology and could not understand how pathogens could affect both human and animal lives. Additionally, the lack of proper equipment also limited his abilities to investigate diseases. However, those experiences motivated him to pursue biology as a career. His thesis research has focused on investigating the roles of Gβγ dimers on cell migration and calcium signaling. Specifically, he has focused on the roles of gamma-10 (Gng10) on cell migration and calcium transient. To achieve this, he used a Chinese hamster ovary (CHO-K1) cell line and targeted Gng10 for deletion using the CRISPR/Cas9-mediated gene knockout. This allowed him to generate both heterozygous and compound heterozygous clones that can be used along wild-type clones to determine whether Gng10 is essential for chemotactic cell migration and mobilization of intracellular calcium.

Research Interests:
Molecular biology, microbiology and physiology

Presentations:
Duteste R, Heller J, Shaffer A. 2019. Epidemiologic study of poverty rate and education level and their associations with diabetes prevalence in populations. Bloomsburg university, Bloomsburg, PA

Funding:
Graduate Student Thesis Research Grant ($500)

2019 Tutoring Assignments
ABLE Center



Mike Facella
Master of Science

Major Professor: Dr. Thomas Klinger
Thesis Committee Members: Dr. Marianna Wood, Mr. Sean Hartzell, and Dr. Steven Rier

Education
B.S. Biology – Ecology, Conservation, and Field Biology, Bloomsburg University

Mike Facella is from Saylorsburg, Pennsylvania. Mr. Facella's thesis research is focusing on the number of microplastic particles found inside the digestive systems of different macroinvertebrates and examines if the number of particles differs at different stream orders. To complete this research, he will sample macroinvertebrates at different order streams at different locations. He will dissect the organisms to remove their digestive tracts, separate the microplastics by dissolving the biotic tissue using nitric acid, and boiling the solution to ensure that there is no biotic tissue left over. The solution will be transported to a dissecting microscope to count the individual microplastic particles and measure the size of the particles. Mr. Facella's research will give more information on microplastics in lotic aquatic ecosystems, where research to determine the severity of this new pollutant, microplastic particles, is lacking. After completing his Master's research, Mike will look for different research jobs in freshwater ecology, and expand his research into marine ecology to further our knowledge in ecology.

Scholarly Research Interests:
Stream ecology, freshwater biology

Presentations:

- Facella, M.J., Smith, S.M. Hartzell, S. Klinger, T.S. Hranitz, J.M. 7/31/19. Microplastics found in detritivores at different freshwater and saltwater locations. Susquehanna Valley Research Symposium, Selinsgrove PA.
- Facella, M.J., Tamblin, A.R. 12/5/19. Preferred Trees and Shrubs of Cedar Waxwings (*Bombycilla cedrorum*) in Columbia and Montour Counties. Bloomsburg University Cost Research Day, Bloomsburg PA.

Funding
Facella, M.J., Smith, S.M. Hartzell, S. Klinger, T.S. Hranitz, J.M. 6/3/10. URSCA Grant. Bloomsburg University of Pennsylvania, to determine the amount of microplastics in different detritivores at different freshwater and saltwater locations ($500 lab, up to $3000 personal)

2019 Service Activities
Kappa Kappa Psi National Honorary Band Fraternity
Bloomsburg University Community Assistant
Bloomsburg University Field Biology Club

Kyle Flannery
Master of Science
Graduate Assistant

Major Professor: Dr. Abby Hare-Harris
Thesis Committee Members: Dr. Cynthia Surmacz, Dr. William Schwindinger, & Ms. Marissa Mitchel (Geisinger Health System)

Education:
B.S. Health Science, Bloomsburg University

Kyle Flannery is from Blandon, PA and received his B.S. in Health Sciences from Bloomsburg University in 2018. Since then, he has been conducting his master's thesis research in the lab of Dr. Abby Hare-Harris. Kyle is currently collaborating with the Autism and Developmental Medicine Institute (ADMI) in Lewisburg, PA to study developmental profiles of individuals with Autism spectrum disorder (ASD) and related genetic disorders such as Fragile X syndrome, Down syndrome, Smith-Magenis syndrome, 22q11.2 deletion syndrome, and 16p11.2 deletion syndrome. In particular, individuals with ASD often demonstrate atypical attainment of developmental language milestones; therefore, Kyle's research is focused on the use of a quantitative metric to capture these atypical patterns. In addition to his thesis work, Kyle has also devoted time as a research assistant to characterizing the phenotype of the 16p11.2 deletion using electronic health record data, and he has been annotating coding regions and transcription start sites from raw sequence data in unannotated *Drosophila* species. After completing his master's degree, Kyle plans to begin working toward a Ph.D. in Human Genetics and building on the computational research skills he has developed at Bloomsburg University.

Scholarly Research Interests:
Neurodevelopmental Disorders, Medical Genomics, Human Genetics, Copy Number Variants.

Presentations

- Flannery, K.P., Mitchel, M.W., Hare-Harris, A.E. March 2019. Characterization of Developmental Milestones of Language in Autism Spectrum Disorder. Tri-beta Biological Honor Society Northeast District 2 Convention, Bloomsburg University of Pennsylvania.
- Flannery, K.P., Mitchel, M.W., Hare-Harris, A.E. April 2019. Characterization of Developmental Milestones of Language in Autism Spectrum Disorder. Commonwealth of Pennsylvania University Biologists Annual Meeting, Edinboro University of Pennsylvania.
- Flannery, K.P., Mitchel, M.W., Hare-Harris, A.E. April 2019. Characterization of Developmental Milestones of Language in Autism Spectrum Disorder. College of Science and Technology Research Day, Bloomsburg University of Pennsylvania.
- Flannery K.P., Basile, G.M., Whiteside, I.S., Hare-Harris, A.E. November 2019. Analysis of Within-Task Variability on Standardized Reading Assessments in Autism Spectrum Disorder. Pennsylvania State System of Higher Education Science, Technology, Engineering, and Mathematics Conference, Kutztown University of Pennsylvania.

Funding
Flannery, K.P. April 2019. Student Travel Grant. Bloomsburg University, for travel expenses to the Commonwealth of Pennsylvania University Biologists Annual Conference ($377)

2019 Teaching Laboratory Preparation
Anatomy & Physiology I laboratory

2019 Tutoring Assignments
ABLE Center
Anatomy & Physiology I&II
Human Genetics

2019 Service Activities
Tri-beta Biology Honors Society Northeast District 2 Convention volunteer
Husky Decision Day volunteer
College of Science and Technology Pathways Webinar panelist

Kate Freeman

Kate Freeman hails from Danville, Pennsylvania. She graduated from West Chester University with a degree in microbiology, which she fell in love with during her junior year. At Bloomsburg, Kate keeps the microbiology teaching laboratories humming. Kate hopes one day to working for the Center for Disease Control.

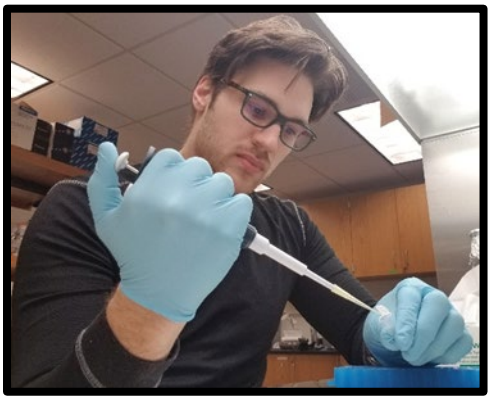
Aaron Gordon-Weaver
Master of Science

Major Professor: Dr. Steven Rier
Thesis Committee Members: Dr. Thomas Klinger and Dr. Lauri Green

Education:
B.S. Biology, Bloomsburg University

Aaron Gordon-Weaver is from Hershey, Pennsylvania. He received his bachelor's degree in Environmental Biology from Bloomsburg university of Pennsylvania. He has loved streams, rivers, and kayaking since he was young and that is what sparked his interest in aquatic ecology. His current Thesis research investigates how pulses of phosphorous effects the growth patterns of algae. This is being done using an artificial stream setup in the basement of Hartline. This may help in understanding how nutrients like fertilizer runoff can affect stream ecosystems.

Research interests:
Freshwater ecosystems, nutrient pollution, mycology



Justin Heller
Master of Science
Graduate Assistant

Major Professor: Dr. Kristen Brubaker
Thesis committee: Dr. John Hranitz and Dr. William Coleman

Education:
B.S. Health Science, Bloomsburg University

Justin Heller comes from Mount Pocono, Pennsylvania. He completed a B.S. in Health Science at Bloomsburg University in May 2018. Justin's academic interests are focused on molecular biology and pathology. In his undergrad, Justin researched under Dr. Kristen Brubaker and continued his research/education with the M.S. Biology program here at Bloomsburg University. The focus of his master's thesis is to study the acute alcohol intoxication effects on expression of alcohol-related genes *addicsin* (JWA) and *dnc*, as-well-as behavioral effects all within *Apis mellifera* (Western honeybee). In his undergraduate career, Justin was a student ambassador for the College of Science and Technology where he worked alongside faculty and staff in all the affiliated departments to optimally engage in prospective student recruitment to the college. Justin continues to engage in prospective student outreach and support for the Biology department well into his graduate career.

Scholarly Research Interests:
Expression profiling | Pathology of tolerance.

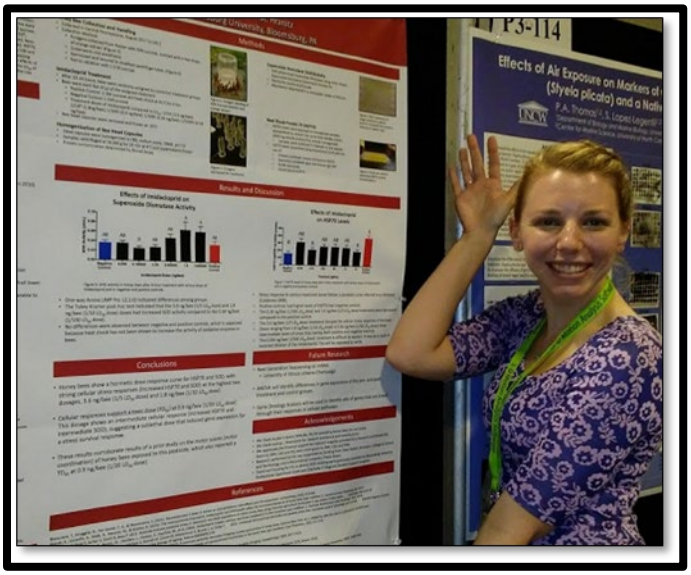
Presentations
- Justin Heller, Jared Harris, Kristen Brubaker | **A qPCR study of acute intoxication in *Apis mellifera* (Western Honey Bee)** | Research and Scholarship Day | Bloomsburg University of Pennsylvania | May 2018
- Justin Heller, Alex Shaffer, Rodelin Duteste | **Poverty rate and educational attainment influences diabetes prevalence** | Research and Scholarship Day | Bloomsburg University of Pennsylvania | December 2019

Funding
Heller, J. 2018. Expression study of acute alcohol tolerance-associated genes *jwa* and *hangover* in *Apis mellifera.* Commonwealth of Pennsylvania University Biologists Student Research Grant ($587)

2019 Teaching Laboratory Preparation
Anatomy and Physiology I & II

2019 Tutoring Assignments
ABLE Center: Cell Biology, Concepts in Biology I, Anatomy and Physiology I & II

2019 Service Activities
Bloomsburg Health Science Symposium (Organizer)
Bloomsburg College of Science and Technology Career Expo (Assistant)
Bloomsburg University College of Science and Technology Research Day (Assistant)
Bloomsburg University Library Advisory Committee
Bloomsburg University College of Science and Technology Open House



Heather Llewellyn

Master of Science

Major Professor: Dr. Cynthia Surmacz
Thesis committee: Dr. Abby Hare-Harris, Dr. John M. Hranitz, and Dr. William F. Schwindinger

Education

B.S. Biology: DNA Analysis, Lock Haven University, Lock Haven PA
Medical Laboratory Scientist (ASCP)

Heather J. Llewellyn is from Watsontown, Pennsylvania. She received her Bachelor's degree in Biology with a concentration in DNA Analysis from Lock Haven University of Pennsylvania. Heather is also a certified Medical Laboratory Scientist, who studied at Williamsport Regional Medical Center for a clinical year, and works full-time at Evangelical Community Hospital in Lewisburg, Pennsylvania. Her thesis research explores the acute sublethal effects of the neonicotinoid imidacloprid on the honey bee brain 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.

Presentations

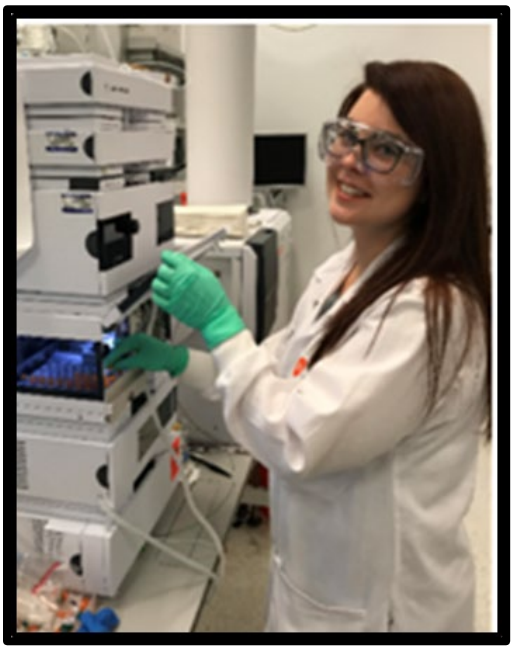
- HJ Llewellyn, JI Petersheim, CA Surmacz, and JM Hranitz. 2018. Acute Sub-lethal Effects of the Neonicotinoid Imidacloprid on the Honey Bee Brain: Preliminary Findings. Commonwealth of Pennsylvania University of Biologists, Mansfield University
- HJ Llewellyn, EN Smith, CA Surmacz, and JM Hranitz. 2019. Sublethal Effects of the Neonicotinoid Imidacloprid on Cellular Stress in the Honey Bee Brain. Society for Integrative and Comparative Biology. Tampa, Florida.
- HJ Llewellyn, A Hare-Harris, JM Hranitz, and CA Surmacz. 2020. Sublethal Doses of the Neonicotinoid Imidacloprid Alters mRNA Expression in Cellular Stress Pathways in Honey Bees. Society for Integrative and Comparative Biology. Austin, Texas.

Funding

- H. Llewellyn. 2018. Sublethal Effects of the Neonicotinoid Imidacloprid on Cellular Stress in the Honey Bee Brain**.** Office of Research and Development, Bloomsburg University. Graduate Student Travel Grant. ($300)
- H. Llewellyn. 2018. Sublethal Effects of the Neonicotinoid Imidacloprid on Cellular Stress in the Honey Bee Brain. Bloomsburg University Professional Experience Grant. ($500)
- H. Llewellyn. 2019. Sublethal Doses of the Neonicotinoid Imidacloprid Alters Cellular and Molecular Responses in the Honey Bee Brain. Office of Research and Development, Bloomsburg University. Graduate Student Travel Grant. ($300)

- H. Llewellyn. 2019. Sublethal Doses of the Neonicotinoid Imidacloprid Alters Cellular and Molecular Responses in the Honey Bee Brain. Bloomsburg University Professional Experience Grant. ($1,000)

Member:
Tri-Beta Biology Honor Society
Phi Kappa Phi Honor Society



MacKenzie McDowell
Master of Science
Graduate Assistant

Major Professor: Dr. Venditti
Thesis Committee Members: Dr. Hare-Harris and Dr. Coleman

Education:
B.S. Biology, Bloomsburg University

MacKenzie McDowell is from Allentown, Pennsylvania. During her undergraduate career, Ms. McDowell was given the opportunity to work as a co-op at the pharmaceutical company GlaxoSmithKline in the Protein Sciences Department for research and drug development. Through the 6-month journey, she was exposed to various laboratory equipment and techniques that she would not have been able to learn at Bloomsburg University. She was put on a few confidential projects during her time to purify proteins for potential drugs in the future. After undergrad, she decided to pursue a graduate degree. Ms. McDowell's thesis research has focused on evaluating enzyme activity of alpha-L-fucosidase in zebrafish (*Danio rerio*) sperm and the reproductive role of this enzyme in development via natural breeding and *in-vitro* fertilization events. To do this, she has set up fluorometric enzyme assays to determine the presence of alpha-L-fucosidase since there are no documented reports of this enzyme in zebrafish sperm. Due to related publications, this enzyme is believed to be involved in sperm-oocyte interactions during fertilizations. By understanding this function, she hopes to help relay this research to fixing fertility issues that are caused in humans. After completing this research, she plans to get a job in a research lab working in R&D.

Scholarly Research Interests
Developmental Biology/Fertility, Virology and Microbiology

Funding

- Venditti J. 2019. Evaluating Enzyme Activity and the Reproductive Role in Zebrafish (*Danio rerio*). Faculty Research and Scholarship Mini-Grant. ($3500).
- Venditti J. and McDowell M. 2019. Fishing for alpha-L-Fucosidase: Evaluating Enzyme Activity and the Reproductive Role in Zebrafish (*Danio rerio*). Thesis Research Grant. ($500).

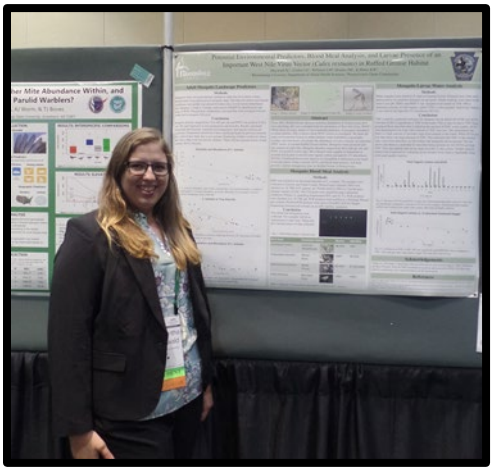
2018-2019 Teaching Laboratory Preparation
A&P I laboratory prep, Concepts of Biology I laboratory assistant, Cell Biology laboratory prep

2019-2020 Teaching Laboratory Preparation
Research Assistant for Dr. Nolt and Dr. Venditti (primarily animal care)/ Cell Laboratory assistant

2018-2019 Tutoring Assignments for ABLE
Concepts of Biology I & II, Cell Biology, and Microbiology

2019-2020 Tutoring Assignments for ABLE
Concepts of Biology 1+2, Cell Biology and Microbiology

Graduate Assistant Service Activities
Mentoring undergraduate students



Samantha Maywald
Master of Science
Graduate Assistant

Major Professor: Dr. Clay Corbin
Thesis committee: Dr. John Hranitz and Dr. Karl Henry

Education:
B.S. Biology, minor in Chemistry. Arcadia University, Glensdale PA

Maquarie University, Sydney AU – study abroad experience

Research Interests:
Current research interests are to become a wildlife biologist for a Fish and Wildlife Agency. For over two years, I have supported senior faculty at Bloomsburg University in coordinating and leading partnerships with the Pennsylvania Game Commission and Pennsylvania Department of Environment Protection. With the help of these agencies, we trapped West Nile virus vector species (*Culex restuans*) to determine environmental predictors and avian species vulnerable to West Nile virus. I conducted molecular analysis on mosquito blood meals to determine avian species that the mosquitoes were primarily consuming from. I was responsible for various project management and data collection to help determine a habitat management plan in Ruffed Grouse habitat.

Presentations

- **Maywald S** and C Corbin (2019) Potential Impacts of West Nile virus Vector (Culex restuans) on Avian Communities Located in Forested Habitats. Presented poster at College of Science and Technology Research Day (Dec. 2019)
- **Maywald S**, C Corbin, L Williams, J Hranitz, K Henry (2019) Potential Environmental Predictors, Larvae Presence, and Blood Meal Analysis of an Important West Nile Vector in Ruffed Grouse Habitat. Presented poster at American Fisheries society and The Wildlife Society Conference in Reno, NV (Sept. 2019)
- **Maywald S**, C Corbin, L Williams, J Hranitz, K Henry (2019) Potential Environmental Predictors, Blood Meal Analysis, and Larvae Presence of an Important West Nile Virus Vector (*Culex restuans*) in Ruffed Grouse Habitat. Presented poster at American Ornithological Society Conference in Anchorage, AK (June 2019)
- **Maywald S**, C Corbin, L Williams, J Hranitz, and K Henry (2019) Potential Environmental Predictors of an important West Nile Virus vector (*Culex restuans)* in Ruffed Grouse Habitat. Presented poster at Pennsylvania Wildlife Society Conference (March 2019)

- **Maywald S**, C Corbin, L Williams, J Hranitz, and K Henry (2019) Potential Environmental Predictors and Blood Meal Analysis of an important West Nile Virus vector (*Culex restuans)*. Presented poster at College of Science and Technology Research Day (May 2019)
- Davis K, S Smith, B Paul, E Ashberry, H Anderson, **S Maywald**, J Blake, R Koch, C Collins, K Drummer, TS Klinger, SM Hartzell (2019). Morphological Differences between a Native, an Established Invasive, and a Potentially Invasive Crayfish in Northeastern Pennsylvania. Presented poster at College of Science and Technology Research Day (May 2019)
- Blake J, R Koch, K Davis, S Smith, B Paul, E Ashberry, H Anderson, **S Maywald**, C Collins, K Drummer, TS Klinger, SM Hartzell (2019). Ectosymbionts Found on Pennsylvania Crayfish. Presented poster at College of Science and Technology Research Day (May 2019)
- **Maywald S**, C Corbin, and L Williams (2019) Environmental Predictors of an important West Nile Virus Vector in Avian Species. Presented a seminar at Pennsylvania Wildlife Rehabilitation & Education Conference (March 2019)
- **Maywald S** and S Rier (2018). Total Organic Carbon a Determining Factor in Mosquito Larvae Presence in Forest Pools. Presented poster at College of Science and Technology Research Day (Dec. 2018)

Funding:
June 2018: School of Graduate Studies Thesis Grant, to aid in purchasing supplies for the (500$)
June 2019: Bloomsburg University Professional Experience Grant (1,000$)
May 2019: American Ornithological Society Travel Award (550$)

Teaching laboratory preparation:
Concepts in Biology I

Prepped biology laboratories:
Anatomy and Physiology I & II

Research Assistant
Assisted Dr. Corbin with mist netting birds and Dr. Hranitz with aging toad bone sections

Tutoring Assignments
Concepts in Biology I and Anatomy & Physiology I

Service Activities
March 2018: Bloomsburg Graduate Panel Discussion
Summer 2018: Assisted in Elementary and High School Science workshops

Thomas O'Rourke

Master of Science
Graduate Assistant

Major Professor: Dr. John M. Hranitz
Thesis Committee Members: Drs. Clay Corbin and Abby Hare-Harris

Education
B.S. Philosophy with a minor in Biology, Rutgers University, New Brunswick NJ

Tommy was born in Kenilworth, NJ but moved to Jim Thorpe, PA when he was three years old. Being surrounded by the natural beauty of the Poconos, Tommy rapidly developed an interest in the natural world, and eventually became an Eagle Scout. Toward the end of High School, he also became interested in

mathematics. Tommy attended Rutgers University in New Brunswick, NJ where he studied philosophy (especially epistemology and the philosophy of Science) and Genetics, receiving a major in the former and a minor in the latter. After a meandering journey that included a semester of law school and 2 years working as a librarian, Tommy decided to return to graduate school and work in the field of computational biology. He is presently programming an invasive species simulation for the Asian Hornet, a major predator of honeybees.

Research Interests
My Interests are in computational and theoretical biology. I enjoy using computers and equations to model living system, to the point that I would consider myself an applied mathematician rather than a biologist. I am presently writing a model of invasion for the highly ecologically dangerous *spa velutina*, the Asian Hornet. I also have an interest in the history and philosophy of science, particularly the impact of the Hermetics, and scientific epistemology respectively.

Publications
The Blue Grimoire: Navigating the Spiritual Waters. Anthology of Sorcery, Vol. II. Become a Living God Press. Annotation: This was a (non-scholarly) essay on the spiritual uses of water in occult practices. The publisher specializes in occult books. Written under the pen name A.S. Christi.

Presentations

- T*he Philosophical Implications of Autism: Cognition and Conception*. The philosophy department senior seminar. Fall 2018.
- *Modeling an Invasion of the Asian Hornet (*Vespa velutina*) in North America.* NAISMA conference.

2019 Teaching Laboratory
Concepts in Biology I & II Laboratories

2019 Tutoring Assignments
ABLE

Service Activities
I am in the process of digitizing the BAHS specimen collections

Benjamin Paul
Master of Science
Graduate Assistant

Major Professor: Dr. Steven Rier
Thesis Committee: Dr. Thomas Klinger and Dr. Lauri Green

Education:
B.S. Biology – Environmental Biology, Bloomsburg University

Benjamin Paul, is from Elizabethville, Pennsylvania. Mr. Paul's thesis research has focused on examining how a genus of filamentous green alga, *Cladophora*, impacts the communities of

macroinvertebrates in streams within the Susquehanna River watershed. To do this he sampled 13 streams within the Susquehanna River watershed. The streams sampled exhibit a gradient of algal growth ranging from completely absent to nearly covering the streambed. Photosynthetically active radiation (PAR) sensors, oxygen, temperature and depth loggers were placed in and around the streams and macroinvertebrates were collected after these data loggers collected data for one week. Areas where *Cladophora* is present and where it is absent at varying spatial scales were compared by examining the communities of macroinvertebrates present in each patch type. Macroinvertebrates were collected by taking Surber samples, sorted and identified. Mr. Paul compared macroinvertebrate communities and their corresponding indices of biotic integrity (IBIs) between different samples in order to see how the *Cladophora* impacts the composition of macroinvertebrate communities. By better understanding how this common filamentous green alga influences macroinvertebrates, Mr. Paul hopes to provide ecosystem managers with useful information regarding the composition of macroinvertebrate communities at varying spatial scales in response to large growths of *Cladophora*. After completing his Master's research, Ben plans to begin a career as a field biologist. His ultimate goal is to pursue a career as a biologist for a governmental agency or organization aimed at conserving natural waterways and maintaining healthy streams, rivers and lakes for future generations to enjoy.

Research Interests:
Stream ecology, freshwater biology

Publication:
Paul, B., S. Hartzell, E. Ashberry, S. Maywald, C. Collins, K. Drummer, H. Anderson, K. Davis, R. Koch, J. Blake, S. Smith, and T. S. Klinger. 2019. Description of Common Crayfish (Cambarus bartonii bartonii) burrows in Jakey Hollow Natural Area, Columbia County, Pennsylvania. Final Report for the Pennsylvania Department of Conservation and Natural Resources SFRA # 1904. 11 pp. Technical Report.

Presentations:
- Paul, B.R., Murphy, M., Davis, K. December 5, 2019. Does the use of nature trails impact the communities of birds near recreational trails in Pennsylvania? College of Science and Technology Research Day at Bloomsburg University, Bloomsburg, PA.
- Paul, B.R., Rier, S.T. November 19, 2019. Influence of *Cladophora sp.* on the composition and spatial distribution of macroinvertebrate communities in streams: a look into methods and preliminary observations. Delaware Watershed Research Conference at the Academy of Natural Sciences of Drexel University, Philadelphia, PA.
- Paul, B.R., Rier, S.T. October 18, 2019. Influence of *Cladophora sp.* on the composition and spatial distribution of macroinvertebrate communities in streams: a look into methods and preliminary observations. Susquehanna River Symposium at Bucknell University, Lewisburg, PA.
- Paul, B.R., Rier, S.T. December 5, 2018. Differences in Structure and Function of Macroinvertebrate Communities in Naturally Acidic and Acid Mine Drainage (AMD) Impacted Streams. College of Science and Technology Research Day at Bloomsburg University, Bloomsburg, PA.
- Paul, B.R., Roper, V.G., Green L. April 13, 2018. Examining the Impacts of Selective Logging on a Naturally Reproducing Brook Trout, *Salvelinus fontinalis*, Stream in Montour County, Pennsylvania: A Pilot Study. College of Science and Technology Research Day at Bloomsburg University, Bloomsburg, PA.

Funding:
Paul, B.R. Rier S.T. July 1, 2019. Influence of *Cladophora* sp. on the composition and spatial distribution of macroinvertebrate communities in streams.
Thesis Research Grant 2019/2020 through Bloomsburg University for the purpose of buying materials needed to conduct research ($500).

2019 Teaching Laboratory Preparation
Concepts in Biology II, Wetlands Ecology, Microbiology

2019 Tutoring Assignments
ABLE Center

2019 Service Activities
Water Education Day with the Columbia County Conservation District
COST Pathways setup and takedown of decorations, distributed food and pamphlets, swiped cards for students.
COST Christmas Party helper
Christmas Bird Count 2019 surveyor for Columbia County
Mentoring undergraduate researchers

Rebecca (Price) Maff

Master of Science

Major Professor: Dr. Angela Hess
Thesis committee: Dr. Kristen Brubaker and Dr. Jennifer Venditti

Education:
B.S. Biology with a concentration in Spanish, Albright College, Reading PA

Rebecca Maff is from McAdoo, Pennsylvania. Her research focuses on investigating the roles the EphA2 receptor and the Ras-Raf-Mek1/2-Erk1/2 signal transduction pathway has in melanoma development. Understanding how the EphA2 receptor and MAPK signaling pathway regulate aggressive cutaneous melanoma will help provide new knowledge about melanoma pathogenesis and potential therapeutic interventions. Aside from cancer biology her research interests include population health/outcomes research, operations research, and understanding the epidemiology of chronic diseases. She is actively working in operations research as a Project Manager within the realm of healthcare. She has experience working on and managing federally funded research studies.

Scholarly Research Interests:
Cancer, Auto-immune diseases, chronic disease, epidemiology, operations

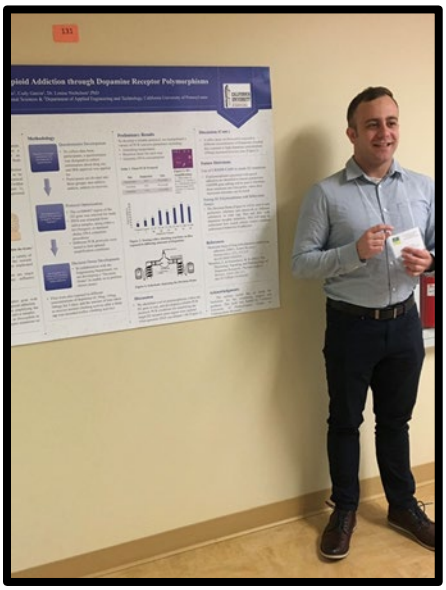
Publications
- Ehsan, A., Garcia-Arce, A. Masel, DT., Reich, E., Puckey, J., Maff, RM. 2019. A metaheuristic-based stacking model for predicting the risk of patient no-show & late cancellation for neurology appointments. IISE Transactions on Healthcare Systems Engineering. 9(3):272-291.
- Wright, E.A., Graham, J.H., Maeng, D., Tusing, L., Zaleski, L., Martin, R. et al. 2019. Reductions in 30-day readmission, mortality, and costs with inpatient-to-community pharmacist follow-up. Journal of the American Pharmacists Association. 59(2): 178-186.

Presentations
- Price, R.M. 2018. EphA2 as a Therapeutic Target for Malignant Cutaneous Melanoma. The Commonwealth of Pennsylvania University Biologists (CPUB), Mansfield University, Mansfield, PA
- Price, R.M. 2016. EphA2 as a Therapeutic Target for Malignant Cutaneous Melanoma. Research & Scholarship Day, College of Science & Technology, Bloomsburg University, PA
- Price, R.M. 2016. Geodemography of Type 2 Diabetes Mellitus in Pennsylvania. Health Sciences Symposium, Bloomsburg University, PA

- Price, R.M. 2016. Geodemography of Type 2 Diabetes Mellitus in Pennsylvania. Pennsylvania Academy of Science, Delaware Valley University, Doylestown, PA

Funding

- Price, R. Hess, A. 2018. EphA2 as a Therapeutic Target for Malignant Cutaneous Melanoma. Pennsylvania Academy of Science Academic Grant Total Award: $500 (funded)
- Price, R. Hess, A. 2016. EphA2 as a Therapeutic Target for Malignant Cutaneous Melanoma. The Commonwealth of Pennsylvania University Biologists Student Grant for Research in Biology. Total Award: $600 (funded)
- Price, R. Hess, A. 2016. EphA2 as a Therapeutic Target for Malignant Cutaneous Melanoma. Bloomsburg University Thesis Research Grant. Total Award: $300 (funded)



Alex Pasculle

Master of Science
Graduate Assistant

Major Professor: Dr. William Schwindinger
Thesis committee: Dr. William Coleman and Dr. Candice Klingerman

Education:
B.S. Biology – Pre-Medical Sciences. California University of Pennsylvania, California, PA

Alex Pasculle is from Pittsburgh, Pennsylvania. Mr. Pasculle's undergraduate research focused on understanding the genetic influences of Opioid Addiction by studying polymorphisms in the Dopamine receptor. Mr. Pasculle's Thesis research focuses on the signaling properties of the Endocannabinoid system. In particular, he is investigating the CB1 receptor, a G-Protein Coupled Receptor (GPCR) primarily responsible for the activation of the Endogenous Cannabinoid System. Currently during preparing for his thesis proposal defense in spring 2020, Mr. pasculle plans on using ratiometric calcium fluorescence imaging techniques along with different *in vivo* and *in vitro* methods to quantify signaling properties of Cb1. By gaining insight into the unique signaling properties in the Endocannabinoid system, Alex hopes his research will be useful in a variety of science disciplines. After successfully defending his thesis, Alex plans to attend Medical School and pursue a career as an Emergency Physician. While working as an Emergency Physician, Mr. Pasculle hopes to be involved in research in clinical and translational medicine.

Research Interests:
Addiction Biology, G-Protein Coupled Receptors, Emergency Medicine

Presentations

- Flannery, K., Whiteside, I., Pasculle, A.R. (2019) Evaluating Diabetes and Obesity Trends in Urbanized Pennsylvania Counties. Bloomsburg University of PA. Bloomsburg, Pa.
- Pasculle, A.R., Douglas, D., Nicholson, L,. (2019) Determining Genotypic Variants in the Dopamine Pathway of Opiate Addicts. Commonwealth of Pennsylvania (CPUB) Annual Conference. Edinboro, PA.
- Pasculle, A.R., Boehm, S., (2019) Presumptive Identification of Staphylococcus aureus in

Advanced Life Support (ALS) Ambulances serving rural communities in Western Pennsylvania. Beta Beta Beta National Biological Research Honor Society Regional Conference for Undergraduates. University of Pittsburgh, PA

- Nora, K., Pasculle, A.R., (2019) An examination of contemplative collaborative approached to performing and building identities in writing classrooms. "Performing Peer Review". National Conference on College Composition and Communication. Pittsburgh, PA.
- Pasculle, A.R., Boehm, S., (2018) Presumptive Identification of Staphylococcus aureus in Advanced Life Support (ALS) Ambulances serving rural communities in Western Pennsylvania. Strike A Spark Conference for Undergraduate Research. California, PA.

Funding
Pasculle, Alex. January, 2019., California University Centers for Undergraduate Research January, 2019. "Genetic Influences of Opiate Addiction through Dopamine Receptor Polymorphisms" ($2,000).

2019 Teaching Laboratory Preparation
Concepts in Biology 1, Microbiology, and Genetics

2019 Tutoring Assignments
ABLE Center: Human Biology, Concepts Biology 1

2019 Service Activities
Allegheny County Department of Health Medical Reserve Corps (MRC) Advisory board member
Bloomsburg Career Fair (Recruitment table)

Victoria Roper
Master of Science

Major Professor: Dr. Lauri Green
Thesis committee: Dr. Clay Corbin, Dr. Steven Rier, and Dr. Thomas Klinger

Education:
B.S. in General Biology, University of New Orleans, New Orleans Louisiana

Victoria Roper is from New Orleans, Louisiana. She received her Bachelor's degree in Biology from University of New Orleans. Her interests are in ornithology and conservation. Her thesis research focuses on using Tree Swallows, a model organism to study aerial insectivore declines in wetlands. Dr. Corbin has been studying aerial insectivores for over 20 years and his work and mentorship inspired the project. Her field work was done in artificial and natural wetlands in Pennsylvania and consisted of monitoring a Tree Swallow nest box project she started with Dr. Green, Dr. Corbin, and Dr. Rier. This research will help evaluate the effectiveness of artificial wetlands in supporting reproducing populations of aerial insectivores. After completing her Master's research, Victoria plans to further her education and earn a Ph.D. focusing on ornithological conservation topics.

Scholarly Research Interests:
Ornithology and Conservation

Presentations

- **Roper, V.**, Formosa, J., Corbin, C. (2019, April). The importance of restored wetland habitat for Red-winged Blackbirds (*Agelaius Phoeniceus*) in Northeast Pennsylvania. Poster session at the annual College of Science and Technology Research Day, Bloomsburg, Pennsylvania.
- Corbin, C., **Roper, V.** (2020, January)**.** Effects of mine drainage on ecology and morphology of riparian birds. Oral presentation at the Society for Integrative & Comparative Biology, Austin, Texas.
- Collins, C., **Roper, V.**, and Corbin, C. (2019, December). A characterization of the morphological variation and dietary niche among functional feeding groups in a wetland bird community. Poster session presented at the annual meeting of the College of Science and Technology Informal Research Day, Bloomsburg, Pennsylvania.
- Hess, N., **Roper, V.**, and Corbin, C. (2019, December). Temporal patterns of activity in avian fauna in a wetland in central Pennsylvania. Poster session presented at the annual meeting of the College of Science and Technology Informal Research Day, Bloomsburg, Pennsylvania.
- Snyder, D.*, Scrednicki, M.*, **Roper, V.**, Corbin, C. (2019, December). Pennsylvania owls: investigating West Nile Virus and natural versus artificial wetlands. Poster session presented at the annual meeting of the College of Science and Technology Informal Research Day, Bloomsburg, Pennsylvania

Funding

Bloomsburg University Travel Awards ($2,300)
Wildlife for Everyone Scholarship ($500)
Pennsylvania Society of Ornithology Research Grant ($500)
Bloomsburg University Professional Experience Grant ($1,200)
Bloomsburg University Thesis Research Grant ($500)
Susquehanna River Heartland Coalition for Environmental Studies Summer ($2,805)
American Ornithological Society, Travel Award ($600)

2019 Teaching Laboratory Preparation

Concepts in Biology I

2019 Tutoring Assignments

ABLE Center – Concepts in Biology I

2019 Service Activities

Field Biology Club, Bloomsburg University
-Co-founder with Jackie Formosa, Jessica Poletti, Dr. Houston, Dr. Corbin, and Dr. Rier
Bloomsburg Graduate Panel Discussion
Tree Swallow Enthusiasts
-Facebook Group Moderator
Water Education Day, Columbia County Conservation District
-Volunteer
American Ornithological Society
- Volunteer
Mentoring undergraduate researchers

Alex Shaffer
Master of Science

Major Professor: Dr. Candice Klingerman
Thesis Committee Member**s:** Dr. William Schwindinger and Dr. Thomas Klinger

Education:
B.S. Health Science, Bloomsburg University

Alex Shaffer is 26 years old from Selinsgrove Pennsylvania where he graduated high school from in 2011. Originally, he went to Pennsylvania College of Technology for a nursing degree and when he realized that wasn't what he was meant to do he transferred to Bloomsburg University. Finished his undergraduate degree in Health Sciences in Spring of 2018 and enrolled in the graduate program at Bloomsburg the following semester working with Dr. Candice Klingerman in her lab. We will be looking at how calorie restriction affects the social behavior and reproductive behavior in *Danio rerio* (Zebrafish), and then hopefully extending that to comparing offspring of WT fish and those fish that were food deprived. Research has been ongoing for about a year now, and data is currently being analyzed. Thesis defense will hopefully happen this spring pending data analysis. In the future Alex hopes to pursue a career in research industry, or possibly a PhD down the road.

Scholarly Research Interests:
Caloric Restriction, Reproduction, and Animal behavior as related to caloric restriction.

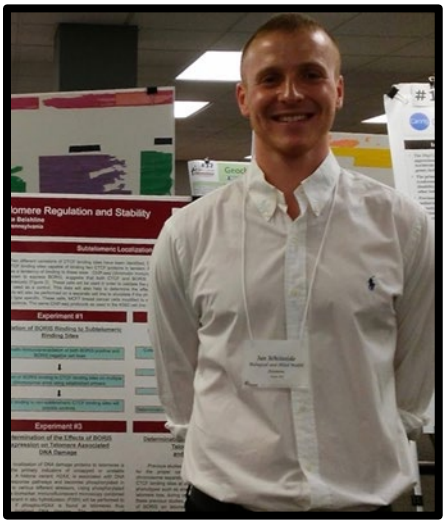
Presentations
Heller, J, Shaffer, A. Fall 2019. How poverty and education level effects the prevalence of type 2 diabetes in the US and across Pennsylvania. Presented during COST Research Day, Hartline Lobby

Funding
Shaffer, A. Fall 2019. How caloric restriction effects the reproduction and social behavior of *Danio rerio*. Bloomsburg University Thesis Research Grant. Lab materials. ($530).

2019 Teaching Laboratory Preparation
Genetics and Microbiology

2019 Tutoring Assignments
ABLE center – Anatomy and Physiology I & II

2019 Service Activities
Tours during Multiple Open Houses
Helping Undergraduate complete her research



Ian Whiteside
Master of Science
Graduate Assistant

Major Professor: Dr. Kate Beishline
Thesis committee members: Dr. Abby Hare-Harris and Dr. William Schwindinger

Education:
B.S. Biology – Molecular Biology, Bloomsburg University

Ian Whiteside, is from Delaware County, Pennsylvania. Mr. Whiteside's thesis research has focused on examining the regulatory mechanisms of telomere function, integrity, and stability. Using cancer cell models, Mr. Whiteside has studied how a transcription factor, known as BORIS, may promote stable telomeric phenotypes. To do this he utilizes many laboratory techniques and protocols, such as chromatin immunoprecipitation, to analyze and interpret data collected from both wildtype and genetically modified cancer cell lines, which he maintains. By better understanding the role of transcription factors like BORIS on telomere physiology, the mechanistic role of telomeres in relation to cancer and aging can be further elucidated. After completing his Master's research, Ian plans to work in biotech and pharmaceutically related industries.

Research Interests:
Molecular Biology, Bioinformatics, and Genomics

Presentations

- **Examining the Effects of BORIS on Human Telomere Regulation**
  Ian S. Whiteside and Dr. Kate Beishline
  College of Science and Technology Research Day, Bloomsburg University, April 2019
  ***First Place Winner**
- **Examining the Effects of BORIS on Human Telomere Regulation**
  Ian S. Whiteside and Dr. Kate Beishline
  Tri-Beta Biological Honor Society Northeast District 2 Convention, Bloomsburg University, March 2019
- **Examining the Effects of BORIS on Human Telomere Regulation**
  Ian S. Whiteside and Dr. Kate Beishline
  6th Annual PASSHE STEM Conference, Kutztown University, November 2019
- **Evolving Diabetes and Obesity Trends in Urbanized Pennsylvania Counties**
  Kyle Flannery, Ian Whiteside, Alex Pasculle
  College of Science and Technology Research Day, Bloomsburg University, December 2019

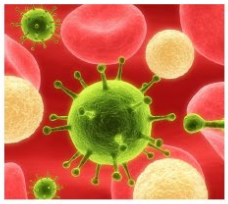
Funding
CPUB Grant Recipient, Commonwealth of Pennsylvania University Biologists. *October 2019*

2019 Teaching Laboratory Preparation
Cell Biology

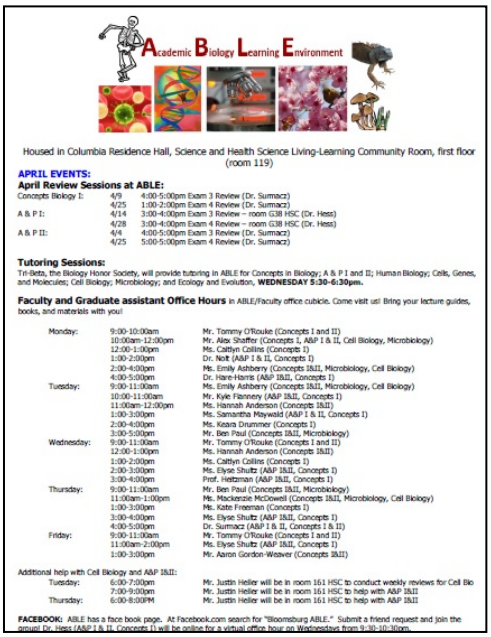
2019 Tutoring Assignments
ABLE Center
Tri-Beta Tutoring

2019 Service Activities
Bloomsburg Career Fair
Bloomsburg Homecoming
Bloomsburg Open House Tours
Bloomsburg Husky Decision Days
Bloomsburg COST Research Day
Bloomsburg Advertisement Commercial Filming
Mentoring undergraduate researchers

Academic Biology Learning Environment



ABLE, short for Academic Biology Learning Environment, is a resource area in the Health Science Living-Learning Community Room on the first floor of Columbia Residence Hall. ABLE provides a place and resources for students in introductory biology courses to study individually and in groups, and with faculty and graduate assistants in our biology masters program. ABLE kicked off the academic year with an Open House on September 9, 2019. Over 50 students, BAHS faculty members, and our graduate assistants attended. Students had the opportunity to view ABLE resources and facilities, meet faculty and graduate assistant tutors, learn about ABLE 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 prizes that ranged from school supplies to miniature skeletons. ABLE is supported by the Dept of Biological and Allied Health Sciences and a TALE Center grant.



Academic Biology Learning Environment

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

APRIL EVENTS:

April Review Sessions at ABLE:

Concepts Biology I:	4/9	4:00-5:00pm Exam 3 Review (Dr. Surmacz)
	4/25	1:00-2:00pm Exam 4 Review (Dr. Surmacz)
A & P I:	4/14	3:00-4:00pm Exam 3 Review – room G38 HSC (Dr. Hess)
	4/28	3:00-4:00pm Exam 4 Review – room G38 HSC (Dr. Hess)
A & P II:	4/4	4:00-5:00pm Exam 3 Review (Dr. Surmacz)
	4/25	5:00-5:00pm Exam 4 Review (Dr. Surmacz)

Tutoring Sessions:

Tri-Beta, the Biology Honor Society, will provide tutoring in ABLE for Concepts in Biology; A & P I and II; Human Biology; Cells, Genes, and Molecules; Cell Biology; Microbiology; and Ecology and Evolution, **WEDNESDAY 5:30-6:30pm.**

Faculty and Graduate assistant Office Hours in ABLE/Faculty office cubicle. Come visit us! Bring your lecture guides, books, and materials with you!

Monday:	9:00-10:00am	Mr. Tommy O'Rouke (Concepts I and II)
	10:00am-12:00pm	Mr. Alex Shaffer (Concepts I, A&P I & II, Cell Biology, Microbiology)
	12:00-1:00pm	Ms. Caitlyn Collins (Concepts I)
	1:00-2:00pm	Dr. Nolt (A&P I & II, Concepts I)
	2:00-4:00pm	Ms. Emily Ashberry (Concepts I&II, Microbiology, Cell Biology)
	4:00-5:00pm	Dr. Hare-Harris (A&P I&II, Concepts I)
Tuesday:	9:00-11:00am	Ms. Emily Ashberry (Concepts I&II, Microbiology, Cell Biology)
	10:00-11:00am	Mr. Kyle Fanneey (A&P I&II, Concepts I)
	11:00am-12:00pm	Ms. Hannah Anderson (Concepts I&II)
	1:00-3:00pm	Ms. Samantha Maywald (A&P I & II, Concepts I)
	2:00-4:00pm	Ms. Keara Drummer (Concepts I)
	3:00-5:00pm	Mr. Ben Paul (Concepts I&II, Microbiology)
Wednesday:	9:00-11:00am	Mr. Tommy O'Rouke (Concepts I and II)
	12:00-1:00pm	Ms. Hannah Anderson (Concepts I&II)
	1:00-2:00pm	Ms. Caitlyn Collins (Concepts I)
	2:00-3:00pm	Ms. Elyse Shultz (A&P I&II, Concepts I)
	3:00-4:00pm	Prof. Hettzman (A&P I&II, Concepts I)
Thursday:	9:00-11:00am	Mr. Ben Paul (Concepts I&II, Microbiology)
	11:00am-1:00pm	Ms. Mackenzie McDowell (Concepts I&II, Microbiology, Cell Biology)
	1:00-3:00pm	Ms. Kate Freeman (Concepts I)
	3:00-4:00pm	Ms. Elyse Shultz (A&P I&II, Concepts I)
	4:00-5:00pm	Dr. Surmacz (A&P I & II, Concepts I & II)
Friday:	9:00-11:00am	Mr. Tommy O'Rouke (Concepts I and II)
	11:00am-2:00pm	Ms. Elyse Shultz (A&P I&II, Concepts I)
	1:00-3:00pm	Mr. Aaron Gordon-Weaver (Concepts I&II)

Additional help with Cell Biology and A&P I&II:

Tuesday:	6:00-7:00pm	Mr. Justin Heller will be in room 161 HSC to conduct weekly reviews for Cell Bio
	7:00-9:00pm	Mr. Justin Heller will be in room 161 HSC to help with A&P I&II
Thursday:	6:00-8:00PM	Mr. Justin Heller will be in room 161 HSC to help with A&P I&II

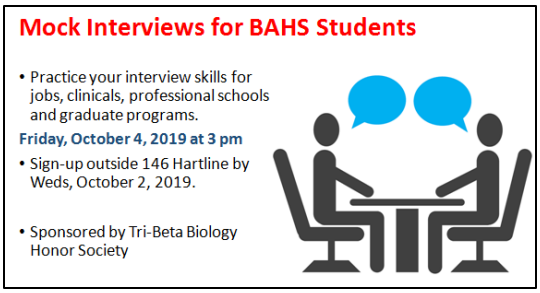
FACEBOOK: ABLE has a face book page. At Facebook.com search for "Bloomsburg ABLE." Submit a friend request and join the group! Dr. Hess (A&P I & II, Concepts I) will be online for a virtual office hour on Wednesdays from 9:30-10:30pm.

Tri Beta Biology Honor

Tri-Beta aims to promote and disseminate biological research. The BAHS chapter certainly met this challenge this year! The BAHS chapter of Beta Beta Beta (Tri-Beta) had an extremely 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. Leading Tri-Beta during spring semester 2019 were: President Kaitlyn Gresko, Vice-President Rachel Ryver, Secretary Liz Kester, Treasurer Allison McCracken, and Historians Andrew Cross and Michaela Roth. Fall semester 2019 officers were President Kyle Mausteller; Vice-President Kaitlyn Gwozdecki; Secretary Kathryn Sherry; Treasurer Kayla Sompel; and Historian Lauren Bunnell. Drs. Hare-Harris and Surmacz are Tri-Beta co-advisors.

The chapter hosted the Northeast District 2 Convention on March 21, 2019. Nearly 100 students and faculty members from 14 colleges and universities attended the convention for a day of poster and oral research presentations. At the convention, the chapter raised $240 for the National Tri-Beta Research Foundation earning them the Platinum Award. 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 Franklin Institute in Philadelphia, hosting several Biology Trivia contests, offering biology games at Children's and Siblings carnival, volunteering at Maria Joseph Manor, providing a neuroscience exhibit at the Health Sciences Symposium, honoring seniors at an outdoor reception, and providing coffee and donuts to Hartline students, staff and faculty during finals week.

New members were initiated during an October ceremony. Dr. Lauri Green, the keynote speaker, addressed "Just a Marine Biologist in a Land-locked State." Members Kyle Mausteller and Andrew Cross received grants from the Tri0Beta Undergraduate Research Grants.



BAHS Hosts the Northeast District 2 Tri-Beta Convention

The BAHS chapter of Tri-Beta Biology Honor Society hosted this year's annual Northeast District 2 Tri-Beta Convention on Saturday, March 23, 2019 in Hartline Science Center. Tri-Beta is an honor society for students dedicated to improving the understanding and appreciation of biological sciences and extending the boundaries of human knowledge through scientific research. The chapter welcomed nearly 100 attendees from 14 regional colleges and universities.

The convention was kicked off by welcoming remarks by Tri-Beta chapter president Kaitlyn Gresko, Dean Aronstam, and Dr, Angela Hess, BAHS chairperson. The program featured 26 student research posters and 10 oral presentations. The keynote presentation was delivered by W. Andrew (Andy) Faucett, MS, LGC, the Director of Policy & Education at the Genomic Medicine Institute at Geisinger Health System in Danville, PA. Mr. Faucett, a Board Certified Genetic Counselor, addressed the topic "*Genetic Counseling and Non-traditional Pathways to Success.*" Students from various chapters played Biology Trivia together, led by Dr. Abby Hare-Harris.

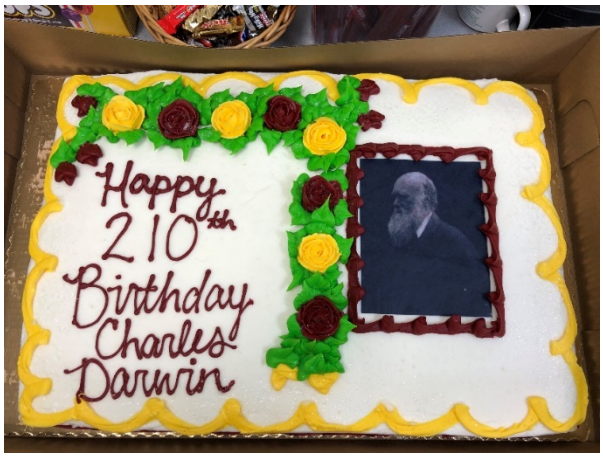
Biological and Allied Health Sciences Club

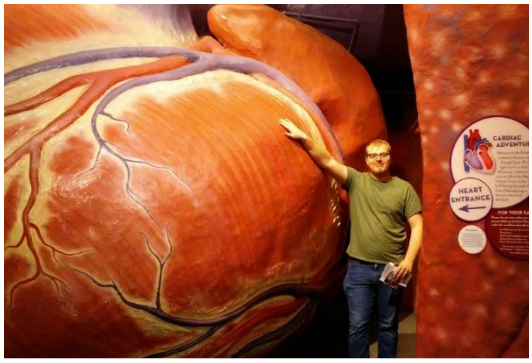
The Biological and Allied Health Science club is open to all majors in Biology, Health Science, and Medical Imaging. The club meets twice a month. Members have been very active again this year hosting biology related activities at the Bloomsburg Children's Museum. This year the club celebrated Darwin's 210th birthday and held the 2nd Annual holiday ornament contest and collected food for the food pantry at the Columbia County Volunteers in Medicine free clinic located in Mifflinville, PA. Members also enjoyed a bus trip to the Franklin Institute in Philadelphia.

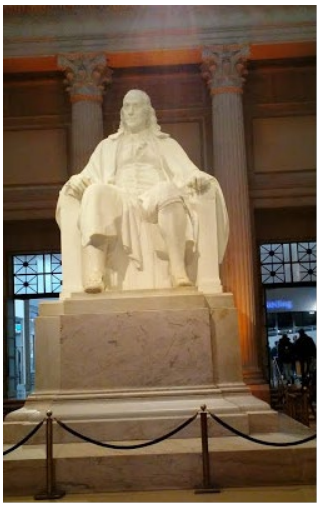
Faculty Advisors: Angela R. Hess and Jennifer Venditti

2018/2019 Club Officers:
President: Tyler Carroll
Vice President: Hannah Byorick
Secretary: Mitchel Liddick
Treasurer: Oliva Horman
PR officer: Juliette Gudknecht

2019/2020 Club Officers:
President: Mitchel Liddick/Oliva Horman
Vice President: Casey Donahoe
Secretary: Kaylee Moore
Treasurer: Spencer Blank
PR office: Juliette Gudknecht







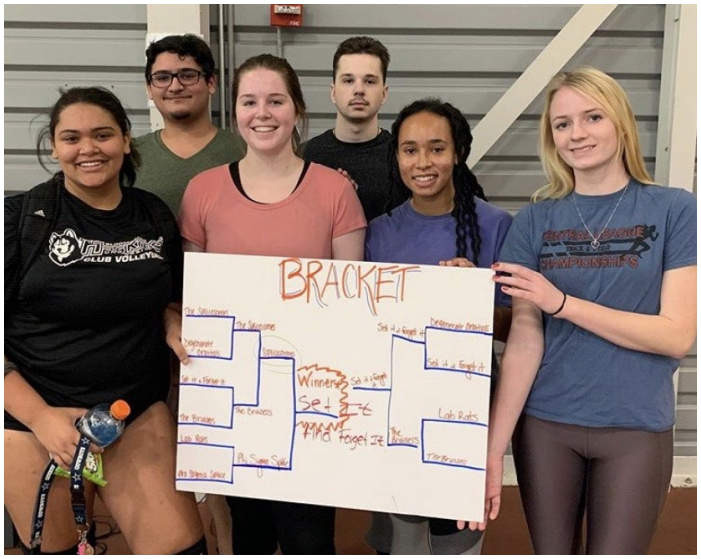
BAHS Club Hosts Second Annual College of Science and Technology Ornament Contest and food drive

The Biological and Allied Health Science club held a food drive for the Columbia County Volunteers in Medicine Clinic. The clinic, located in Mifflinville, and founded by BU Biology alumnus Bette Grey, provides free health care for those without health insurance. The clinic also maintains a small food/personal hygiene pantry for those patients needing this additional support. Club members, faculty, and staff from the College of Science and Technology collected non-perishable food and personal care items for the clinic.

This food drive was held in connection with the 2nd annual ornament contest where students and their faculty mentors were encouraged to make an ornament from laboratory supplies. The first-place ornament was created by Ian Whiteside and Vitoria Nery from Dr. Beishline's lab. The runners up were submitted by Alex Shaffer from Dr. Klingerman's lab, Rachel Nenstiel and Taylor Bozza from Dr. Surmacz's lab, and a submission from the Exercise Science department.

Pre-medical Sciences Club

The Pre-medical Sciences Club consists of an enthusiastic group of students who are interested in pursuing careers in a variety of healthcare professions. This academic year the club provided mentoring, hosted speakers from various medical and professional schools, provided community service opportunities, and organized trips to medical schools. Club members volunteered at Relay for Life, BU's BIG event, the Bloomsburg Food Cupboard, and at AGAPE. The group's "Nothing But Nets" Volley Ball Tournament raised over $200 to support the purchase of malaria nets for Haiti. Serving as officers for the 2019-2020 academic year are: President, Kayla Sompel; Vice-President, Allison Sowers; Secretary, Rachel Tuttle; Treasurer, Tara Full; and Service Chair, Kyle Mausteller. The club is advised by Dr. Joseph Ardizzi.



BAHS Departmental Seminar Series

The Seminar Series of the Department of Biological and Allied Health Sciences continues to be very successful in attracting eminent scholars in a variety of disciplines to speak at regularly scheduled weekly seminars. This past year's seminars showcased scholars 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 who came to Bloomsburg University included:

DATE	INVITED SPEAKER	AFFILIATION	TITLE OF PRESENTATION
January 25, 2019	Juri Miyamae	Yale University	*How the elephant got its trunk: comparative methods in understanding the evolution of mammalian facial muscles*
March 29, 2019	Meghan Duell	University of Western Ontario	*Flying hot and high: Tropical stingless bee flight performance in the warming rainforest canopy.*
April 5, 2019	Mateo Fabbri	Yale University	*Evolutionary and Developmental Perspectives on the Dinosaur-Bird Transition*
April 10, 2019	Amy Henrici	Carnegie Museum of Natural History	*The Garden of the Gods*
September 13, 2019	Gregory Pask	Bucknell University	*Smells Like Queen Spirit: Unraveling Social Communication in the Indian Jumping Ant*
September 20, 2019	Philip Bevilacqua	Pennsylvania State University	*RNA Research at the Interface of Chemistry and Biology*
October 11, 2019	Eric Horstick	West Virginia University	*Neural and molecular mechanisms of handedness*
October 18, 2019	Sarah Monaco	Drexel University	*The Role of GSK3B in the Parvalbumin-pyramidal Prefrontal Cortex Microcircuit*
November 1, 2019	Stephanie Kroll	Drexel University	*Macroinvertebrates Tell All: Indicators of Human Impacts on Streams*
November 22, 2019	Victor Hugo Gonzalez	University of Kansas	*Pollinators and Peace in Post-Conflict Colombia*

Dr. Philip Bevilacqua was brought to campus in collaboration with the BU Department of Chemistry and Biochemistry, underscoring the collaborative nature of the scientific research being pursued at Bloomsburg University.

Bloomsburg University faculty who shared their ongoing scholarship included:

DATE	FACULTY PRESENTER	TITLE OF PRESENTATION
February 15, 2019	George Chamuris	*Flora of Ricketts Glen Project: A Summary*
March 1, 2019	Michael Borland	*From PPARs to Skin Cancer: A Journey in Molecular Toxicology*
September 27, 2019	Abby Hare-Harris	*Quantitative Analysis of Genetic Disorders*
May 3, 2019	George Davis	*Further Characterization of AvsYS1-an Iron Transporter Gene from Oats (Avena sativa)*

Highlighting student research continues to be a staple of the Seminar Series.

Formal Defenses of Master of Science Theses which were delivered as part of our regularly scheduled Seminar Series were:

DATE	PRESENTING MASTER OF SCIENCE CANDIDATE	THESIS ADVISOR	THESIS TITLE
September 6, 2019	Emily Ashberry	S. Rier	*Understanding the Environmental Context of Algal Priming of Coarse Particulate Organic Matter Decomposition in Streams*
November 8, 2019	Victoria Roper	L. Green	*Effectiveness of Artificial Wetlands in Supporting Reproducing Populations of Aerial Insectivores: Investigating Reproduction, Body Condition, and Diet of Tree Swallows (Tachycineta bicolor)*

Throughout the year, students and faculty were able to hear speakers during their formal presentations, and they were also able to discuss research over scheduled lunches and during receptions held after each talk. Many of our speakers also visited classrooms to talk with students as they learned about the researchers areas of specialization. These opportunities for faculty and students to share ideas with leading researchers in a variety of fields continue to help researchers in the Department of Biological and Allied Health Sciences to maintain crucial professional networks. This weekly showcase of scholarly investigations, both on and off campus, continues to provide students with abundant opportunities for exploring the diversity of options for professional development within the biological sciences. The BAHS Departmental Seminar Series will highlight the Thesis research of over a dozen graduating students in 2020.

Congratulations to Our 2019 Graduates!

B.S. Biology

Alyssa Brown
Andrew Ferdock
Kathy Dao
Jean Freyberger
Rachel Helton
Andrew Puerzer
Michaela Roth

Environmental Science

Patrick Scubelek
Cody Pavlick
Olivia Robertson
Shannon Slesicki
Sierra Smith

Molecular Biology

Fionna Fludd

Pre-Medical Sciences

Gean Pierre Arcos
Jacob Balkiewicz
Taylor Carroll
Andrew Cross
Tiffany Giannotti
Alyssa Mack
Julie Smith
Taylor Bozza
Amara Sikalias
Faith Varner-Bruno
Austin White

B.A. Biology

Justin Blake
Nathan Crawford
Clifford Jones
Casey Klinger
Leslie McManus
Ameerah Muhammad
Miranda Payeskie
James Pedone

Natural History

Maliyah Edwards

B.S Health Sciences

Heather Detwiler
Amel Elsheakh
Joseph Gundel
Devin Jenkins
Kyle Jones
Rachel Spear
Casey Steward
Morgan Wilson

Medical Lab Science

Emily Weaver

Pre-Accelerated 2nd degree Nursing

Colleen Kolva
Jennifer Ringsdorf
Kaitlyn Teliha
Shana Bordner
Kiera Novobilski
Chahava Perkins
Comfort Nyesuah
Najha Sealy

Pre-Physician Assistant

Samantha Beazley
Emily Butler
Elizabeth Cole
Kaitlyn Gresko
Tanner Host
Elizabeth Kester
Gabriella Levy
Amy Rader
Rachel Ryver
Brittany Shaak
Samantha Starbuck
Brittany Walters
Brianna Ormiston
Lindsey Thomas
Joseph Kinston
Dalton Snyder

Pre- Physical Therapist

Morgan Ilgenfritz
Margaux Large
Allison McCracken
Zachary Newmyer
Alyssa Smith
Erika Wilson
April Panas
Syndney Waldman

B.S. Medical Imaging

Jennifer Albanese
Sean Beattie
Mackenzie Bernstiel
Amanda Binczewski
Michelle Bressi
Andrew Brodt
Daniel Burkins
Gabrielle Cann
Brooke Coldren
Jayne Confalone
Sunni Criste
Madison Derr
Aminata Fall
Alondra Fernandez
Autumn Grab
Emma Hecker
Sara Hess
Hunter Hojnacki
Courtney Holenstein
Amy Jackson
Niles Kaufman
Emily Kenna
Tara Kennedy
Amanda Klinger
Cori Lahr
Zachary Lehman
Amanda Linde
Oliva Lyons
Kelsey Manning

Marjorie Martin
Megan Onavage
Naomi Perez
Danielle Perrelli
Mia Perrino
Emily Reynolds
Brianna Robinson
Celeste Roland
Kylie Ruhl
Samantha Schiavello
Johanna Silverstri
Bailey Smith
Kayla Smith
Monique Snow
Madeleine Stander
Kear Suprock
Danae Sutliff
Jamie Winner
Brianna Whalen
Rachel Wood

Master's Degree in Biology

Emily Ashberry

Dear BAHS alumni –

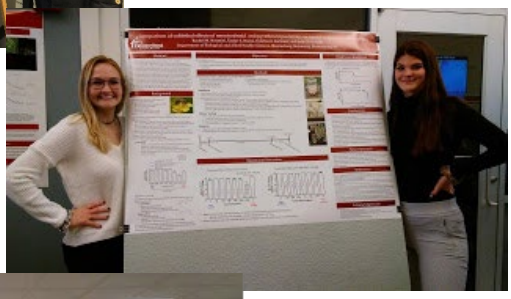
We want to hear from you! Please contact us and let us know of all the wonderful things you have been doing since you left BU. We are always interested in having our alumni come back to speak to our students during the College of Science and Technology Pathways in Science and Technology day or for a Freshman Career Seminar. 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!

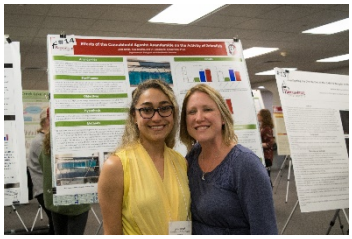
A special thank you to our 2019 donors!

Mr. Carl M. Beagle
Ms. Angela Ciucci
Mr. Phillip A. Farber
Dr. Angela R. Hess
Mrs. And Mr. Gail Jasman
Mrs. Joan A. Laubach
Dr. John W. Pyne
Dr. Cynthia Surmacz
Dr. Rachel L. Melnick-Lippart

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 2019 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.





A special thank you to our alumni speakers!

Pathways in Science & Technology - 2019

Biology Panel

- **Wayne Frick**, BS, 1985 Alumnus, Sales Engineer at Mettler Toledo, Founder and Chief Product Evangelist at Chirpsounds (chirpsounds.com)
- **Zachary Hoffer** MD, PhD, FCAP, MAJ(P), United States Army Medical Corps
- **Gene Kinney**, PhD, 1989 Alumnus, President and Chief Executive Officer, Prothena
- **Jessica Sidisky**, PhD Candidate – Neuroscience, Lehigh University

Allied Health Sciences Panel

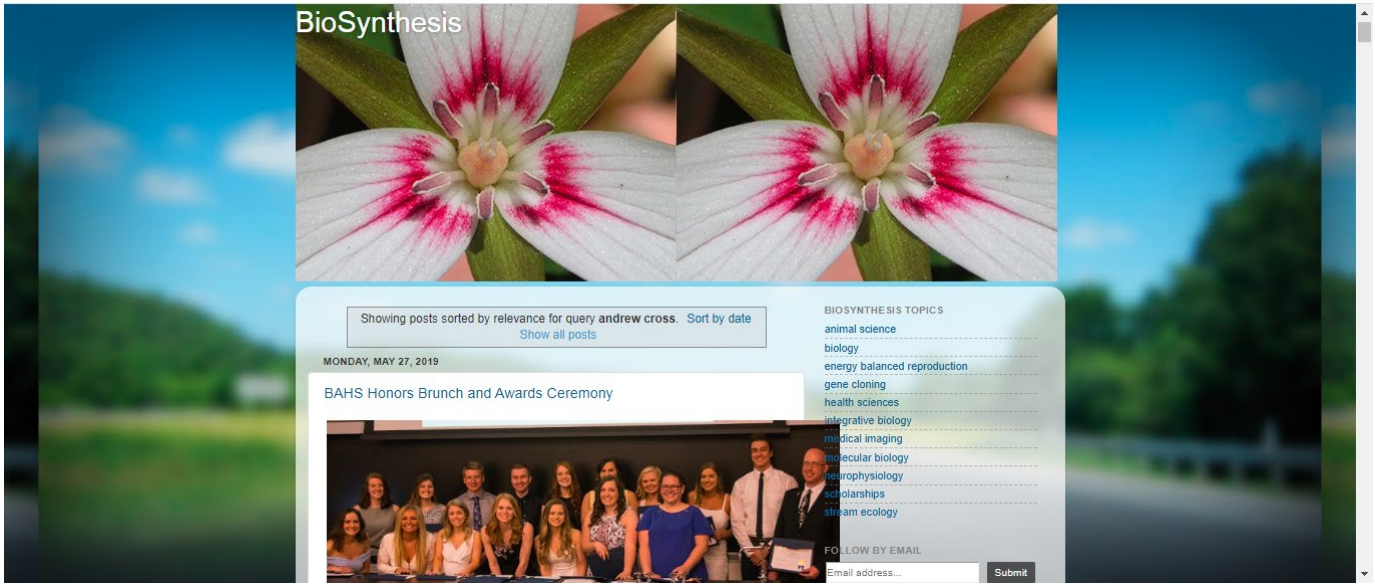
- **Zachary Hoffer** MD, PhD, FCAP, MAJ(P), United States Army Medical Corps
- **Myrle Newcomer**, MSH, PA-C Department of Emergency Medicine, Evangelical Hospital
- **Bobby Paul**, R.T. (R), Radiographer, Geisinger Medical Center
- **Andrew Shamburg**, B.S. MLS, Medical Technologist (ASCP), Geisinger Medical Center

Freshman Career Seminars – 2018

- **Ken Roszel**, M.S., R.T. (R) Radiographer, Director of the School of Radiologic Technology at Geisinger Medical Center
- **Stacy Adams**, D.V.M., Veterinarian, Loyalsock Animal Hospital
- **Jason Nolt**, D.O., Physician, University of Alabama Birmingham Anesthesia

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, are archived on 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