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*Biological Sciences*

## Greetings!

I am happy to write a welcome to our newsletter message one last time. Next year at this time, I expect to be more engaged in research and teaching than in chairing the department, and it is definitely time for younger members of the department to take over the responsibilities of planning for the future. It has been fun to hear from many of you in the past year, to know that you are moving forward in careers, sometimes as you planned, and often in completely unexpected and interesting ways.

The department continues to change and grow. We have started colonizing portions of the first and third floors of Iacocca that had previously been occupied by faculty and students in Chemical and Biomolecular Engineering and Bioengineering. Most of them moved to the new HST building on main campus. The additional space has helped our graduate and research programs continue to grow.

Our work with undergraduate students has also increased, emphasized by an enrollment of 350 in BIOS 41 this spring, the most ever. Several of our advanced courses also have higher than ever numbers. What might interest a few of you is that we have worked to update and broaden options in several undergraduate programs. While the core contents of the programs are similar, the opportunities that students can explore are greater, with some additional flexibility.

As always, this newsletter will introduce you to new faculty and give you an opportunity to recognize those who have retired, earned awards or been promoted. We also have a few interesting stories, and notes from some of you. I hope that you continue to write to us and let us know what you are up to.

Linda Lowe-Krentz, Ph.D.  
Professor and Chair



*Linda Lowe-Krentz, Ph.D.  
Professor and Chair*

*Please join us!*  
**2024 Undergraduate Research Symposium**  
Wednesday, April 24th  
3:00 to 5:00 p.m.  
Iacocca Hall  
Iacocca Conference Center

student poster presentations | meet with professors | learn about exciting research

## An overview of 2023 ...

- 26 faculty members
- 20 pre/post-doctoral / research scientists
- 11 technical and 3 administrative staff
- 49 Ph.D.-level graduate students
- 27 Master's-level graduate students
- 305 Undergraduate majors

## Current Department Faculty

Explore our website: [www.lehigh.edu/~inbios](http://www.lehigh.edu/~inbios)

Volume 19 - Spring, 2024

- Daniel Babcock • Michael Behe • R. Michael Burger • Shawn Burton • Matthias Falk • Julie Haas • Santiago Herrera • Wonpil Im • M. Kathryn Iovine •  
• Johanna Kowalko • Gregory Lang • Michael Layden • Linda Lowe-Krentz, Chair • Wynn Meyer • Julie Miwa • Kayleigh O'Keeffe •  
• Amber Rice • Dylan Shropshire • Neal Simon • Robert Skibbens • Jennifer Swann • Lawrence Tartaglia • Nathan Urban • Vassie Ware • David Zappulla •

# Welcome to New Faculty

*The department welcomed two new faculty in 2023*

**Dylan Shropshire, Ph.D.** was appointed as an Assistant Professor. Dr. Shropshire earned his B.S. in Biological Sciences from East Tennessee State University in 2015 and his Ph.D. in Biological Sciences from Vanderbilt University in 2020. He served as a postdoctoral research associate at the University of Montana until joining the faculty at Lehigh. Dylan's research primarily explores the mechanisms and diversity of bacterial influences on insect reproduction, using *Wolbachia* bacteria as a model system. Along with his dedication to research, Dr. Shropshire is deeply committed to mentorship and education, nurturing the growth and development of future scientists.



*Dylan Shropshire, Ph.D.*

**Shawn Burton, Ph.D.** was appointed as a Research Assistant Professor. Dr. Burton earned his Bachelor of Science in Microbiology and Masters of Science degrees from the University of Pittsburgh. He then went on to earn his Ph.D. in Biological Sciences at Carnegie Mellon University. He did postdoctoral work at the University of Utah and the University of Pittsburgh. In 2020, Dr. Burton was appointed as a research scientist at Lehigh University in the lab of Dr. Nathan Urban. Shawn studies brain function within the mammalian olfactory systems. He uses slice electrophysiology, computational modeling and widefield and multi-photon *in vivo* imaging.



*Shawn Burton, Ph.D.*

## Promotion awarded



*Daniel Babcock, Ph.D.*

**Dr. Daniel Babcock** was promoted to Associate Professor with Tenure in 2023. Dr. Babcock earned his Bachelor of Arts degree in Neuroscience from the University of Delaware and his Ph.D. in Neuroscience from the University of Texas Health Science Center. He then was appointed as a postdoctoral research associate at the University of Wisconsin-Madison.

Daniel arrived at Lehigh in 2016 as an assistant professor.

The Babcock Lab is interested in understanding the cellular and molecular mechanisms underlying synaptic dysfunction in neurodegenerative diseases using the model organism, *Drosophila*. They focus on three major areas: 1) How do toxic protein aggregates spread throughout the brain?, 2) How do synapses degenerate? and, 3) Why are dopaminergic neurons lost in Parkinson's Disease?

Some of the classes Professor Babcock has taught include Human Physiology and Neurodegenerative Diseases in Model Organisms.

## Retirements



*Michael Kuchka, Ph.D.*

**Michael Kuchka, Ph.D.** retired as of August 31, 2023. Kuchka received his undergraduate degree in Biology from the University of Pennsylvania and his Ph.D. from Carnegie Mellon University. He then did a postdoctoral fellowship at the University of Geneva (Switzerland). He was appointed as an assistant professor at Lehigh in 1988 and then promoted to associate professor in 1994. Kuchka served the department as Graduate Program Director, Undergraduate Program Director, and co-director of the department's Distance Education

program. Over the years, Michael received the College of Arts & Sciences Dean's Award for Advising and the Donald B. and Dorothy L. Stabler Award for Excellence in Teaching. He was also named a National Academies Education Fellow in the Life Sciences.

**Jill Schneider, Ph.D.** retired as of December 31, 2023. Dr. Schneider earned her B.S. in Psychology at Florida State University and her Ph.D. in Biology from Wesleyan University. She then went on to be a postdoctoral research associate and research assistant professor at the University of Massachusetts. Schneider was appointed as an assistant professor at Lehigh in 1992 and was promoted to associate professor in 1994, and then full professor in 2004. She had 61 articles published in refereed journals, authored the textbook, "Principles of Hormone/Behavior Relations" and authored five book chapters. Over her career, Dr. Schneider was awarded nine federal grants for her research. Among her many honors and awards, Jill received the Distinguished Associate Professorship (endowed by the Class of '61) from 1995-1998.



*Jill Schneider, Ph.D.*

## Graduate Student Spotlight

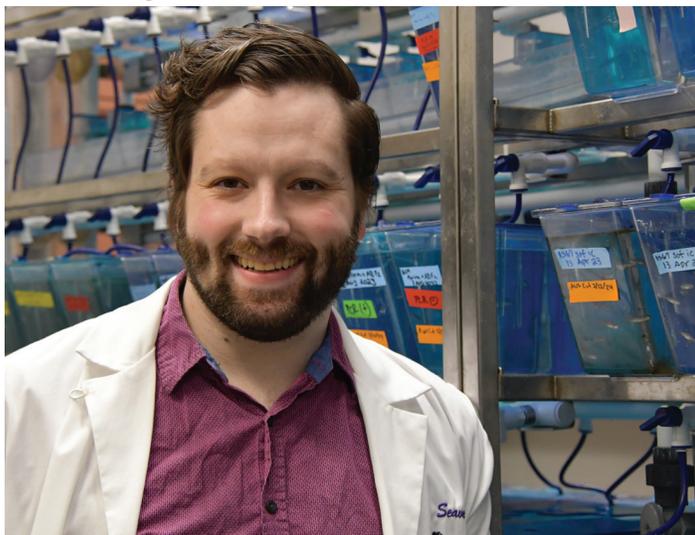
*Alex Seaver is a Ph.D. Candidate in the Cell & Molecular program*

Alex Seaver earned his Bachelor of Arts in Molecular Biology with a concentration in Scientific Computing at Kenyon College in 2017. After graduation, he worked at Peddie School in Hightstown, NJ where he taught sophomore Biology and coached swimming. Additionally, he worked for a year at Meadowbrook Swim Club in Baltimore, MD where he served as a manager and licensed Pool Operator.

Alex began at Lehigh in Fall 2019 where he rotated in the Iovine and Falk labs before joining the Iovine lab at the end of his first year. His work there has focused on understanding the pathways upstream of the gap junction protein Connexin43 in regulating joint-formation pathways in the regenerating zebrafish fin.

His work published in *Bioelectricity* characterized retinoic acid as a potential upstream regulator of connexin43 transcription as well as having a role in the transcription of the joint transcription factor *evx1*. He found that inhibition of retinoic acid signaling leads to premature joint formation and a decrease in the transcrip-

tion of connexin43. His thesis work seeks to further understand the role of retinoic acid as well as other potential regulators such as calcineurin in regulating known joint formation pathways.



Outside of the lab, Alex served as the treasurer of the Biological Organization of Graduate Students (BOGS) in academic year 2020-2021 and currently serves as president of BOGS where he focuses on improving graduate student experiences within the PhD program. Additionally, he received the Marjorie Nemes fellowship in Spring 2023, as well as Spring 2024, on the basis of demonstrated excellence in research and progress toward his PhD. During his time at Lehigh, Alex has presented posters at both regional and international zebrafish conferences.

When not at Lehigh, Alex enjoys nature photography, cycling, writing, and travel. He lives near Lansdale, PA with his wife, Sarah, and cat, Simon.

*The research in the Iovine Lab is funded by a grant from the National Institutes of Health*

## Faculty receive recognition awards



**Teaching Assistant Professor Lawrence Tartaglia, Ph.D.** was honored in the Spring of 2023 with the Hillman Award for Excellence in Undergraduate Advising. This award recognizes exemplary graduate or undergraduate student advising.



**Assistant Professor Santiago Herrera, Ph.D.** was recognized by the College of Arts and Sciences. He received the Award for Research, Scholarship and Creative Activity in the Sciences division of the College.

## Let us know what you're doing!

**Submit your information online:**

[Click here](#) to submit your information - it is fast and easy!

**Send us an e-mail:**

Send your information to [inbios@lehigh.edu](mailto:inbios@lehigh.edu). Please include your name, year of graduation, degree, and the information you would like to share.

**Call us:**

Call the department office (610-758-3680) and give your information to Melissa.

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# The incubation and growth of a scientist

**Emily Heckman, Ph.D. (B.S., Molecular Biology; Minor in Health, Medicine & Society; 2016)** spent more than three years being mentored in research by Professor Julie Haas. Her path to earning her Ph.D. in Biology (2022) at the University of Oregon started in the hallways of Iacocca Hall, and many of the department's professors played a part in her journey. Dr. Heckman is currently a postdoctoral fellow at the University of Michigan in the Clowney Lab. She was recently awarded the prestigious Hanna Gray Fellowship from the Howard Hughes Medical Institute (HHMI).

## **Why did you decide to come to Lehigh University?**

"I grew up about an hour and a half away from Bethlehem in Lancaster County, PA. When we were seniors in high school, one of my friends was going to tour the Lehigh campus and invited me to come along. It was October, so the leaves on South Mountain were lit up in oranges and reds and everything looked like it was out of a postcard. It seemed like an inspiring place to study. I liked the idea of attending a smaller school; I toured other colleges that year where it was hard to picture myself being more than just a face in the crowd. I wanted to be part of a community, and I wanted to be known by my professors. I decided to apply early admission. There were also financial considerations for choosing Lehigh. As a private school, Lehigh was able to offer me a generous financial aid package which made it possible for me to attend."

## **What were your goals when you first became a student at Lehigh?**

"I knew I wanted to be a biology major when I went to college. I grew up loving animals and the outdoors, and biology was my favorite subject in school. At the time I thought the only practical way to apply an interest in biology was through a career in medicine. I had never interacted with a scientist before starting at Lehigh, so a career in research was not something I ever considered. So my goals when I became a Lehigh student were to get good grades and make it to medical school."

## **Who was your advisor as an undergraduate student?**

"Dr. Kuchka was my academic advisor. I remember that he had an open-door policy and I felt comfortable walking into his office whenever I needed advice. I also took his molecular genetics class, which I really enjoyed and was challenged by. It was one of the first experiences I had in a science course where I feel like I was equipped with an approach for thinking through how to test a biological question. We would learn the facts in the textbook, and then talk about how a scientist would set out to make such a discovery."

## **Can you describe your experience with undergraduate research?**

"In my very first semester at Lehigh I had a freshman seminar taught by Dr. Julie Haas called, 'The Ever Changing Brain.' It was my first exposure to topics in neuroscience, and I was hooked. After taking the course I contacted Julie to ask about research opportunities in her lab. She and her lab took me in and taught me how to do dual

whole-cell patch clamp electrophysiology as an undergrad, which was insane and also very badass. The first time I successfully recorded from a pair of neurons, I printed out the trace of the recording, ran down the hall to Julie's office, and she high-fived me. That was the start of approximately the next 3 years. I was given opportunities to work across a few different projects studying mechanisms for altering electrical synapse strength. I contributed to multiple publications as a middle author, and presented a poster at the annual Society for Neuroscience meeting. Julie was a great mentor and put me in positions to be successful."

## **Were there any classes in Biological Sciences that helped shape your future?**

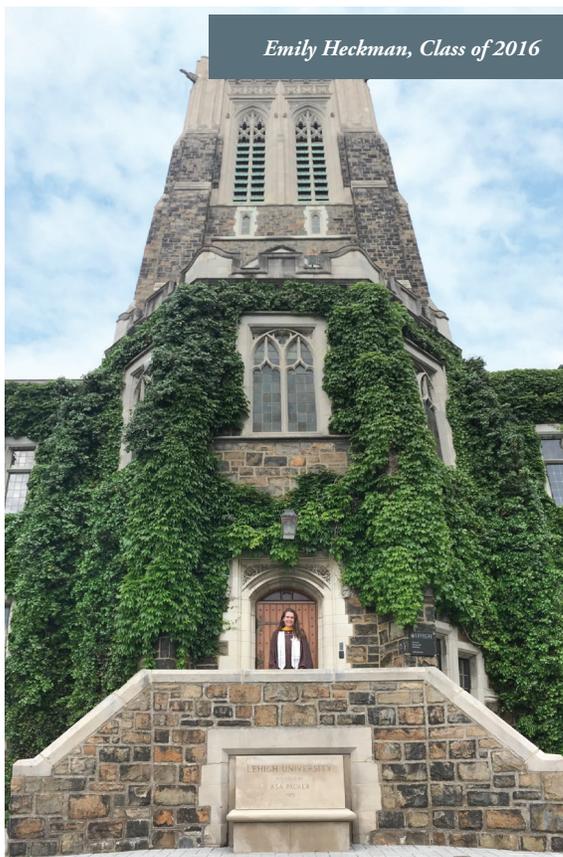
"The SEA-PHAGES course run by Dr. Ware and Dr. Kenna had a huge impact on my trajectory. I applied to the course in my freshman year interested in getting some research experience. I left with technical and analytical skills, a sense of confidence, and a motivation to continue doing research. If I hadn't taken this course, I'm not sure I would be a scientist.

Dr. Layden's developmental biology course was also formative for me. It felt like every lecture we learned something miraculous about how an organism develops. I had interests in neuroscience from my time in the Haas Lab, and after taking this class I became curious to understand more about how the brain develops. That's what I ultimately studied in my Ph.D."

## **What Biological Sciences faculty helped shape your future?**

"Speaking of Dr. Layden, when I was thinking about where I wanted to apply to graduate school, I asked him for recommendations for programs that specialized in developmental neuroscience. He brought the University of Oregon to my attention, where he did his Ph.D. Thanks to him, I applied. When I interviewed at UO, I really liked everything about it - the program, the people, the mountains - and that's where I decided to do my Ph.D."

Dr. Ware was another amazing mentor who provided me with opportunities to develop as a scientist and as a professional. As a SEA-PHAGES student, she encouraged me to apply to work on her Mountaintop project during the summer of 2014. This was my first full-time research experience. Not only did I learn a ton, I also had so much fun working in the lab. As part of that summer, Dr. Ware chose me and another student to present our findings at HHMI's Janelia Research Campus. Janelia is a science utopia, and to visit there as an undergraduate was very inspiring. The experiences I had as a PHAGE researcher, thanks to Dr. Ware, gave me confidence and put me on a path of wanting to be a scientist."



## Some reflections from Emily's faculty mentors

*Emily's enthusiasm for research and intellectual hunger made her a dream trainee, I consider myself super lucky to have had her in my lab! It's really rewarding to know that her interest in neuroscience grew out of that time. I'm looking forward to seeing where she takes it.*

- Professor Julie Haas -



*It was fun to teach Emily, we had many conversations that went beyond just the course material. I remember thinking that if this student decides to pursue a career in research, she will make a big impact on her chosen field. Congratulations, Emily!*

- Professor Michael Layden -

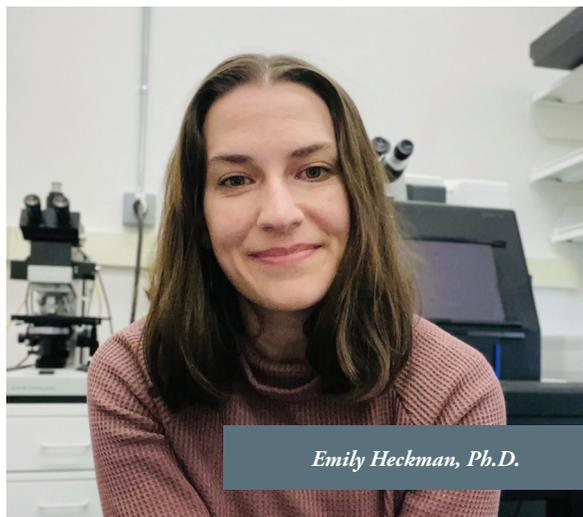


*Emily displayed a passion for science that first made Meg Kenna and me want to "keep her forever" but gave us the more "acceptable" solution and incentive to ask her to become an undergraduate TA for the next SEA-PHAGE cohort. As a coauthor on three journal articles about actinobacteriophage genome diversity, Emily was among Lehigh's first undergraduate coauthors from Lehigh's SEA-PHAGE Program. Her Mountaintop Project work on phage proteins laid a foundation for several mechanistic studies that continue today. We've kept in touch throughout her scientific journey after Lehigh, and her selection as a Hannah Gray Fellow brings pride to us all as caretakers of an exceptional young scientist.*

- Professor Vassie Ware -

### ***What made you decide to take the path of earning your Ph.D.?***

"There were a lot of moments that accumulated over my time at Lehigh that convinced me that I should pursue my Ph.D. I was fortunate to take part in various summer research programs like BDSI and Mountaintop, which were very formative. I distinctly remember riding the bus up to Iacocca one morning and thinking about how excited I was to find out the results of an experiment I was doing that day. It would be new knowledge that I got to discover, which made me feel incredibly lucky. I think realizing that joy I had for doing science was one reason I decided to pursue my Ph.D. Another was that I had a curiosity for understanding basic biology, and earning a Ph.D. would allow me to work on that long term.



*Emily Heckman, Ph.D.*

Also, again, there were financial considerations. As someone who didn't have a lot growing up, the money was really not there for me to apply for or attend medical school. In contrast, for most STEM Ph.D. programs your tuition is covered and you get paid a stipend. This is not common knowledge, and it really should be - I only learned about this when I overheard it in a conversation in organic chem lab. I don't want to make it sound like I did my Ph.D. for the money (because you don't actually make a lot of money). But knowing that there wasn't a financial barrier to earn that degree made it possible for me to take that path."

### ***In lay person's terms, describe your current research.***

"I want to know how our brains learn about the world, and how changes to the brain (either over the course of evolution, or by a scientist in the lab) can modify what and how much we learn. To model these questions, I'm studying the brains of different insects, which all share a common brain region for perception and learning. While many insects prioritize learning about smells in this region, in more sophisticated insect learners, visual information and smell information are learned about equally. In my research I'm doing experiments to ask (1) what type of visual information do these insects learn, (2) what developmental processes lead to more visual learning, and (3) can we test hypotheses about how the brain learns by engineering simpler insects to develop brains that resemble those of more sophisticated insects?"

### ***Can you describe the impact that the HHMI fellowship has on your career?***

"Being awarded the HHMI Hanna Gray Fellowship is a huge honor. The fellowship recognizes early-stage postdocs who demonstrate the potential to become leaders in their chosen field and a desire to promote a more equitable and inclusive research culture. Through the Hanna Gray Fellowship, I will be funded for up to four years of my postdoc and then up to four more years when I transition to the faculty stage and start my own lab. Practically, this means that for the duration of my postdoc I don't have to focus on applying for grants to fund my research. I can instead put that energy toward doing exciting science. I've also known for a long time that I've wanted to have my own independent research lab one day. With funding now set aside for my early faculty years, I'm given an increased assurance that this goal will become a reality."

### ***Where do you see yourself in the next 3 to 5 years?***

"I hope to be starting a faculty position and running an independent lab. Based on my own experience at Lehigh, I know how impactful it is to have mentored experiences in research as an undergraduate. Because of that, I'd like to be at an institute with strong support for undergraduate research."

### ***Would you like to share anything else with our readers?***

"Being an undergraduate at Lehigh was an incredible privilege. I had mentors who cared about me and put me in positions to succeed. I had instructors who were passionate about undergraduate education and who shared their enthusiasm for science with my classmates and me. Thank you x1,000,000 to the Dept. of Biological Sciences for all you've done and continue to do for your students."

# Virology students learn through concept applications

*Dr. Larry Tartaglia, Teaching Assistant Professor, has incorporated fun and engaging learning tools into his Virology (BIOS353) class, applying previously learned concepts in the classroom to real-world scenarios. The class also utilizes students' interests as a source of inspiration. We asked Dr. Tartaglia to give us an overview of how he teaches the class.*

“We don't have any exams – I feel like it's more conducive to free learning for students. One of the first things I tell my students they need to do at the outset of the semester is to choose a virus to study for the entirety of the semester. I make comments to them (a little tongue-in-cheek) that choosing a virus to study for the whole semester is one of the most difficult decisions they will face in their life. This is something that they're going to study in great detail – from basic biology to all sorts of translational work.

Once they select their virus, I group them based on similar viral characteristics, and we come up with some really fun names. For example, there is 'Flu Rida/H1N1 Direction' (Influenza), 'Lassa Minelli' (Lassa, Ebola, Marburg, RSV, Nipah, CCHV), 'Pinocchio Had Polio' (Polio, Rubella), etc. We study many different aspects within the virology umbrella, ranging from genetics to viral life cycle, virus structure, as well as pandemics, epidemiology, vaccinology, and gene therapy. Students are tasked with applying all of the concepts learned in class to their own virus.”

## **What are examples of concept applications?**

“We have students do all sorts of different things in the classroom, and one of them is a creative writing assignment. It's called 'I am one with my viral genome,' and the idea is to have students create something where they describe their virus to a layperson. I literally send them off telling them I want them to lose their mind and go to the depths of their imagination! Students have come up with really fun and creative ideas such as creating dating app profiles of their virus with a biography and hobbies that all relate to the virus' biology, Q&A sessions of students 'interviewing' their virus with biologically relevant questions, poems, and even a James Bond movie script called 'No time to catch Measles' – a script related to banter between 007 and M.

We also create viral life cycle drawings using a web-based platform called Biorender. I task students with visually showing every single aspect of 'their' viral life cycle, including how viruses enter cells, replication, and eventually egress. I often tell my students that their images are going to be better than textbook quality – and that is exactly what they do! One student in particular created a 'dengue virus life cycle' image that surpasses anything that you may find on Google images!

I also use vaccinology as a concept application to teach students about vaccines but also to show them that professors are humans too; we have lives outside of school! The assignment opens with a note from my 4-month-old daughter (at the time) requesting that my students help her identify all of the information on her vaccination schedule from birth to 16 years of age. Students had to tease apart as much information from the schedule as possible to figure things out like vaccine modality, disease-causing agents, vaccine delivery mechanisms, and dosage. Ultimately, the task is quite in-depth, however, the students feel engaged because the vaccination schedule is real and connected to my daughter.

I believe it is important for students to learn about translational work in the medical field. We cover clinical trial manuscripts, learn epidemiology principles such as R-naught values, and I have students make mathematical predictions on if their virus of choice is capable of causing a pandemic. In this light, students model pandemics through computational software and learn how certain variables like vaccine efficacy, population numbers, and viral transmission rates impact a pandemic. Students will also reenact certain hallmarks of the field like the creation of the Smallpox vaccine by Edward Jenner, the milkmaid and the young boy, as well as the inequities in the yellow fever experiments conducted by Walter Reed, to name a couple.

I have a passion for structural virology, and when I first created this course, I noticed that students struggled with the computational work of creating a 3D structure, particularly understanding axes of symmetry. In an effort to make this activity more relatable, we decided to act like first graders for a day. We used scissors, glue, and toothpicks to cut out and fold together an icosahedron origami paper model. The icosahedron symmetry mimics the symmetry found in many viruses. The paper models served as tangible references when comparing to the more complex 3D computational models and helped students make the mental connections between the two.

Two of my previous students, Jason Yeung and Nathanael Borger, inspired me to start 3D printing viruses as a class. It was an ambitious endeavor, but through collaborations with the Center for Innovation, Teaching and Learning, and the Wilbur Powerhouse, we made this become a reality. Every student used virus databanks of structural information to create their 3D structure files, which were then sent for 3D printing. This activity served as a method for students to understand structural determinants that dictate function during the infectious life cycle. This information is directly applicable to the creation of vaccines and antiviral targets against these infectious pathogens.

Lastly, I am excited to report that we are taking my virology class into the virtual reality realm! Students are currently creating VR worlds with content they create in class.”



*Financial support for Dr. Tartaglia's creative teaching efforts was provided by the Center for Innovation, Teaching and Learning, a division of the university's Library and Technology Services.*

## 2023 Selected Research Publications

Bold = Faculty  
**Bold+Italics** = Graduate Student  
*Italics* = Undergraduate Student  
 \* = Former Student

**Sidisky, J.**,\* de Paua Moreira, D., *Okumus, M., Caratenuto, R., Drost, C., Connors, B., Hussain, S., Alkhatib, S., and Babcock, D.* Genome-wide analysis reveals novel regulators of synaptic maintenance in *Drosophila*. *Genetics*. 6 Apr 2023. <https://doi.org/10.1093/genetics/iyad025>

**Weimann, S.R.**,\* **Zhang, C.**,\* and **Burger, R.M.** A Developmental Switch in Cholinergic Mechanisms of Modulation in the Medial Nucleus of the Trapezoid Body. *The Journal of Neuroscience*. 7 December 2023. DOI: <https://doi.org/10.1523/JNEUROSCI.0356-23.2023>

**Fisher, C.**,\* and **Falk, M.** Endocytosis and endocytic motifs across the connexin gene family. *International Journal of Molecular Sciences*. 16 August 2023. <https://doi.org/10.3390/ijms241612851>

**Vaughn, M.**, Laswick, Z, Wang, H., and **Haas, J.** Functionally distinct circuits are linked by heterocelular electrical synapses in the thalamic reticular nucleus. *eNeuro*. 21 December 2023. DOI: <https://doi.org/10.1523/ENEURO.0269-23.2023>

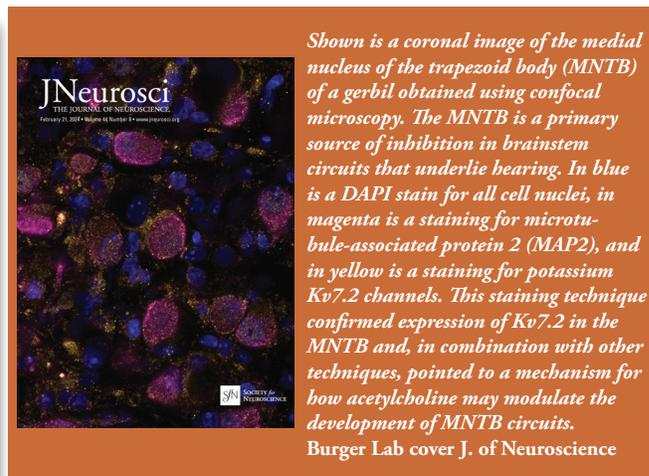
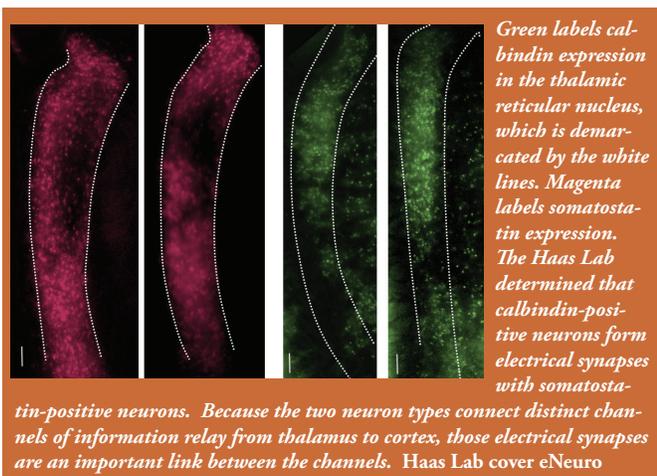
**Herrera, S.**, Chadwick, Jr., W., Jackson, M., Konter, J., **McCartin, L., Pittoors, N.**, Bushta, Em., and Merle, S. From basalt to biosphere: Early non-vent community succession on the erupting Vailuu'u deep seamount. *Frontiers in Marine Science*. 19 January 2023. <https://doi.org/10.3389/fmars.2023.1110062>

**Seaver, A.**, Weaver, N., and **Iovine, MK.** Retinoic acid influences connexin43 expression during joining formation in the regenerating zebrafish fin. *Bioelectricity*. September 2023. <https://doi.org/10.1089/bioe.2023.0018>

**Martinez, A., Lang, G.** Identifying targets of selection in laboratory evolution experiments. *Journal of Molecular Evolution*. 21 February 2023. DOI <https://doi.org/10.1007/s00239-023-10096-2>

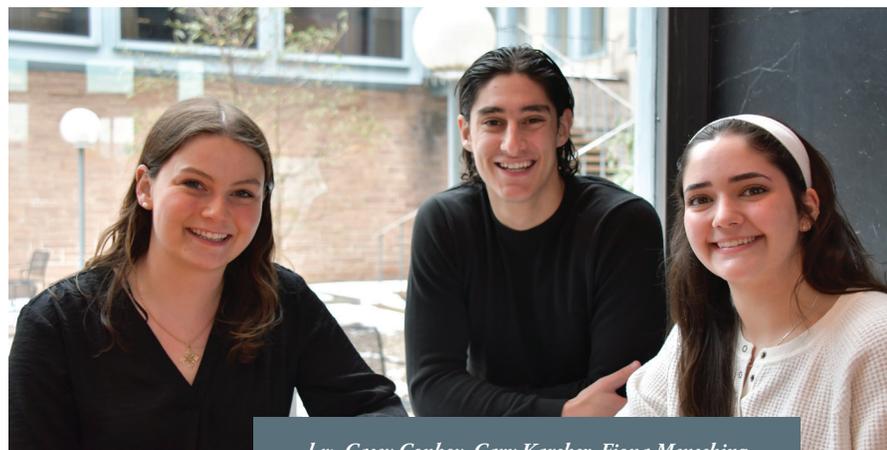
Al-Shaer, L., Leach, W., **Baban, N., Yagodich, M.**, Gibson, M., and **Layden, M.** Environmental and molecular regulation of asexual reproduction in the sea anemone *Nematostella vectensis*. *Royal Society Open Science*. 14 June 2023. <https://doi.org/10.1098/rsos.230152>

Lebo, K. and **Zappulla, D.** Inverse-folding design of yeast telomerase RNA increases activity in vitro. *Non-Coding RNA*. 28 August 2023. <https://doi.org/10.3390/ncrna9050051>



## Epstein Scholars named for 2023-2024 academic year

*Through a generous gift, Michael Epstein, Esq. ('75, B.A. Bio) established the Epstein Family Endowment for the purpose of supporting undergraduate research. All the scholars receive funding for materials and supplies to complete their research. Recipients are members of the Biological Sciences Honors class, under the guidance of Professor Linda Lowe-Krentz.*



*l-r: Casey Conboy, Cary Karcher, Fiona Mensching*

- **Casey Conboy** (B.S., Biochemistry) – Casey's research adviser is Professor David Zappulla. The focus of her research is on telomeres and how they are linked to premature aging and cancer.
- **Cary Karcher** (B.S., Biology) – Cary's research proposal is "Neurofilament light elevation following repetitive mild traumatic brain injury after treatment with a vasopressin 1a receptor antagonist." Dr. Neal Simon is Cary's research adviser.
- **Fiona Mensching** (B.S., Behavioral Neuroscience) – Fiona is doing research in the Iovine Lab. She is working to characterize the localization of cohesion in cilia and, if its presence is confirmed, identify its localization to specific cilia substructures.

**John Dobrota** (1961, B.A., Bio) - Hahnemann Medical College M.D.1965. John ranked 3rd in his class. He did an internship at St. Lukes Hospital in Internal Medicine and then spent two years at Hahnemann doing a Gastroenterology Fellowship. He was in the US Army for three years stationed in Germany during the Vietnam Era. He then practiced Gastroenterology at Grand View Hospital from 1972 until his retirement in 2010. "I can't say enough about how well Lehigh prepared me for Med School! Kudos to the Bio Department.

**Kelly (Buller) Close** (1991, B.A., Bio) - Master's in Public Health (MPH) from Yale University in 1994. Kelly went to medical School at UCLA and then the University of Pittsburgh with residency in Emergency Medicine. While working as an Emergency Medicine attending, she was also the National Coordinator of Disaster Volunteers for the American Red Cross where on September 11, 2001 she coordinated the medical and social services relief efforts in person at Ground Zero in New York City and by satellite phone for the Pentagon. She trained in bioterrorism Israel in 2011. She then worked at the University of Pittsburgh Medical Center (UPMC) in the emergency department during Covid-19. Kelly recently transitioned to the medical director of an Urgent Care and doing relief work in El Salvador.

**Benedetta Leuner** (1997; B.A. BNS) - Benedetta is an Associate Professor in the Departments of Psychology and Neuroscience at The Ohio State University in Columbus, OH. Her lab conducts preclinical research to address issues/questions that are specific to the female brain and women's brain health across the lifespan including adolescence, pregnancy, and the postpartum period with a focus on hormones, neuroplasticity, neuroimmunology, and behavior.

**Dan Torino** (2009, B.S., Biology) - Dan is completing an Adult Reconstruction Fellowship at Allegheny Health Network in Pittsburgh. He signed with private practice MidJersey as an Attending Orthopaedic Surgeon starting in August.

**Ray Pugh** (2010, Ph.D., Chemistry) Ray is an Associate Professor of Biochemistry at the University of Wisconsin-Platteville.

**Ranid Ackerman** (2011, B.A., BNS; B.A. Psychology) - Ranid was at Memorial Sloan Kettering Cancer Center for 11 years, and is currently the Clinical Research Manager for the Leukemia Service.

**Julia Hayden** (2014, B.S., BNS) - Julia spent 3.5 years doing neuro-oncology clinical research at the Dana-Farber Cancer Institute, followed by one year of Alzheimer's clinical research at Massachusetts General Hospital. She is now at the end of her first year of medical school at the University of Massachusetts!

**Joseph Teyim** (2016, B.S., Biochemistry) is a Resident Physician at the Southern Illinois University School of Medicine in the Neuroscience Institute Department of Psychiatry.

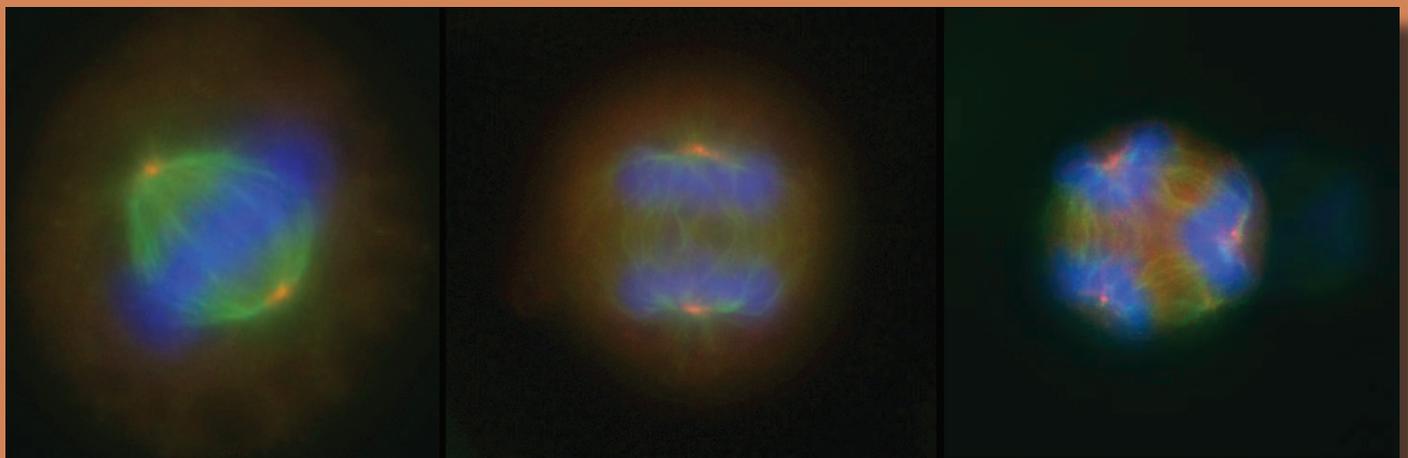
**Gabrielle Dardis** (2017, B.S., Biochemistry) - Earned her PhD in Biochemistry from The University of North Carolina at Chapel Hill in 2023, where she studied epigenetic and inflammatory signaling crosstalk in Triple Negative Breast Cancer. She is now working as a Medical Writer at RTI Health Solutions.

**Barbara Tsaousis** (2018, BS, Mol. Bio; 2019, BA HMS) - She earned her M.D. at the Lewis Katz School of Medicine at Temple University and matched into a residency program in New York City, where she will spend four years training to become an emergency physician. After residency, she is considering pursuing a fellowship in medical toxicology, due in large part to her fascination with biochemistry that began at Lehigh.

**Grace Ciabattoni** (2021, B.S., Mol. Bio.) is now Ph.D Candidate at NYU School of Medicine.

**Madeline Dunterman** (2021, B.A. Bio) - After graduating from Lehigh, she took a job as a Research Technician in the Department of Neurological Surgery at Northwestern University in Chicago! Recently she has published a co-first author paper in Cell Reports titled "Circadian regulator CLOCK promotes tumor angiogenesis in glioblastoma" and will be heading to Washington University in St. Louis to pursue a PhD in Cancer Biology this July! "I'll always be thankful for the strong research foundation I built at Lehigh with Dr. Kuchka!"

**Ivonne Morban** - (2023, B.A., Biochemistry) joined a research lab at Tufts University School of Medicine in Boston. She is working as a research technician with a team focused on Lyme disease research and part of the Tufts Lyme Disease Initiative.



These are mitotic stages of HeLa cells, Metaphase and Anaphase, and something went wrong, a triangular spindle!  
 Bios 368 - Matthias Falk, Ph.D. instructor