

The Semester of Zoom

Hello current and former biology students,

Spring semester 2020 is finally over, and it was one we hope not to repeat. Some unusual events tried to divide us but we prevailed. Early on, a misguided soul scrawled some hurtful words in a stairwell in Henson. It was so wrong and went against everything we are about. Students, faculty, and staff all responded loudly against this threat, and I believe we came out better together despite the intentions of those words.

While we were dealing with that issue, rumors had spring break being extended because of a different threat, one with a positive-sense, single-stranded RNA genome of 30 kb. The rumor was correct, and eventually we were not allowed back on campus and all instruction went online. This abrupt change challenged all of us. Some lacked decent internet at home or even a quiet place to study or teach. Technology issues were rough, at least for some of us. Seniors forfeited half of their last semester college experience. Zooming could only replace so much. We did have a senior celebration via zoom that allowed us to recognize some incredible student accomplishments and say goodbye and good luck to our graduates.

Despite everything, I know we accomplished a good amount of education this semester. We all did the best we could under the circumstances. And no one in our school, as far as I know, succumbed to COVID-19. But perhaps the biggest thing we learned was how important real human interactions are in our teaching, learning, and our lives. Zoom isn't enough. It's in our Biology.

Stay healthy and please keep in touch and visit often, in person whenever possible.

Les Erickson

Professor and Chair
Department of Biological Sciences
Salisbury University



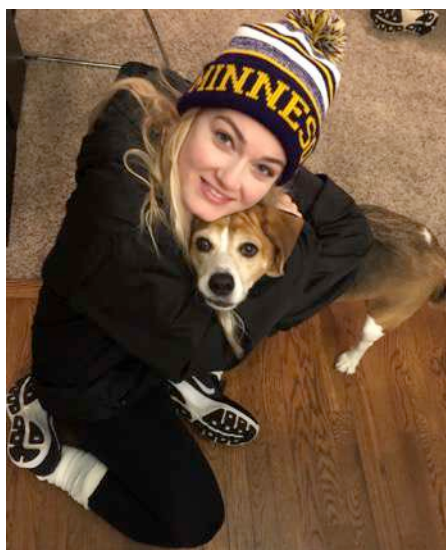
We Have Much to Celebrate!

Fulbright Scholars



Lydia Narum

Lydia will be teaching English and working with professional athletes and Olympians at a sports school in Slovakia. As a biology major with research experience and English and athletic coaching minors, I admire the guiding principles of the Slovak Republic's Ministry of Education, Science, Research and Sport, and I am passionate to partake in a program that aims to form well-rounded individuals,



Gabrielle Voithofer

In January 2021, I will begin my Fulbright Study-Research grant in Wrocław, Poland. I will have the opportunity to study a model of human McArdle's disease, a metabolic muscular disorder, in zebrafish at the University of Wrocław, Poland. Dr. Marta Migocka-Patrzałek, a professor in the department of biology at the University of Wrocław, has created a novel model of human McArdle's disease in pursuit of a cure for this disorder. Currently, no drug therapies exist to treat the cause of this disorder, this grant will allow me to contribute to the identification of new potential drug therapies for McArdle's disease.

Goldwater Scholars – Jessica Pierce & Anna Brennan



For the first time in Salisbury University history, two SU students have received Barry Goldwater Scholarships. The Barry Goldwater Scholarship and Excellence in Education Foundation was established by Congress in 1986 to serve as a living memorial to honor the lifetime work of Senator Barry Goldwater, who served his country for 56 years as a soldier and statesman, including three decades in the U.S. Senate. **Jessica Pierce** and **Anna Brennan**, both Biology majors were awarded this prestigious and highly competitive award. Anna Brennan, a research assistant in the Laboratory for Human Performance with Dr. Scott Mazzetti, is studying metabolic changes in humans following explosive exercise training. Along with the Goldwater, she has coordinated and received funding to host a TEDx event at SU in the Fall. Jessica Pierce, a research assistant in Dr. Jessica Clark's laboratory is characterizing changes to the integrity of the optic nerve in hyperglycemic zebrafish in an effort to better understand visual disorders commonly seen in diabetic humans. In addition to the Goldwater, Jessica Pierce had also received a summer fellowship with the National Institutes of Health to study sensory neuroscience in zebrafish, before the program was put on hold due to Covid-19. Congratulations to these two impressive Biology majors, you are making us proud!

Biology Faculty Awards



Nicole Hammond

Nicole is the model of what we seek in identifying a senior biology student for this award. From the moment she came to SU she has been active in the Biology program, beginning research early, excelling in course work, & growing into a leading scientific mind within our department. She is a representative of the Honor's college, member of several environmentally focused groups on campus, & has worked as a prep student in the department. Nicole has many qualities that exemplify an award-deserving student.



Peter Kim

As a student, Peter was attentive & engaged at every class meeting, & his grades were a direct reflection of his efforts. As a researcher, he was a cornerstone member of the Carter lab for more than two years. His work earned him authorship on a publication & a department seminar slot. As a community member, Peter was the chair of the ASBMB student chapter for a year & volunteered at fundraisers such as SU Giving Day, which raised over \$6,000.00. During his tenure in the department, Peter was involved in all facets of improving the student experience, including recruiting & orienting new students & researchers while offering support of senior students & researchers.



Gabrielle Voithofer

Gabi has played an intricate role in our department since her freshman year. Not only has she excelled academically in her classes, she has been a lab prep assistant, an incredibly successful SI, and a dedicated research student in the Clark lab. Gabi's leadership role in the Clark lab has led to greater collaborations, productivity, and lab culture; because of this, she has been involved in numerous projects which has led to authored publications, numerous research presentations, and several awards and grants. This semester has been an incredibly fruitful one for Gabi; she was awarded a research Fulbright to Poland and was chosen as Maryland's representative to present her work on Capitol Hill in front of members of Congress. The work that she presented at this event has been written up as part of an impressive honor's thesis, which will be expanded on for publication. This will be Gabi's third publication as an undergraduate student, really underscoring her hard work and dedication to research.



Wisteria sp.

"The Future's So Bright, I Gotta Wear Shades"



I have been accepted into the BFA program at the Savannah College of Art & Design where I will be training to become a biological illustrator.

Kara Adamopoulos



After graduation I plan to conduct research as a postbac fellow at the NIH for a year before heading off to medical school.

Shania Bailey



I just started an internship at KeyGene, an agricultural biotech firm in Rockville, MD. I am really enjoying interning there so far--thank you for the inspiration!!!

Sam Chisholm



After graduation, I am continuing my career at SU by pursuing my Master's degree in applied biology with Dr. Hunter & Dr. Taylor as my advisors. I am planning to perform research at the Smithsonian Tropical Research Institute in Panamá & investigate questions of evolutionary behavioral ecology with túngara frogs. From there, I hope to eventually receive my Ph.D. I am very excited to continue my field research & foster my appreciation of all things biology!

Olivia Rose Hamilton



I will be starting at Louisiana State University & will be pursuing my masters in Oceanography & Coastal Science with a focus in Biological Oceanography. I will be working under Dr. Sibel Bargu doing harmful algal bloom research in Lake Pontchartrain funded by Louisiana Sea Grant.

Courtney (Nicole) Hammond



I plan to find a part time job at home & apply to law school for Fall 2021.

Taylor Hughes



I was recently offered & have accepted a job as lab technician at Merck. Thank you to my family my professors for all of the support. Couldn't have done it without you!

Maliyah Martel



I am continuing my education at Purdue University for a PhD in Ecology and Evolutionary Biology. I am very excited and will be moving to Indiana in August!

Allison N



I will be working for the Maryland Department of Natural Resources conducting research at Matapeake Park, Stevensville, MD to gain experience before attending graduate school for Marine Science.

Kayla Rexroth



After graduation I will continue working as a Medical Assistant & I will be applying to Graduate Programs.

Cassidy Schweibenz



After graduating from Salisbury University in Spring 2020 I will be attending University of the Sciences in Philadelphia, PA for their physician assistant masters program beginning in Fall 2020.

Ryan Spadin



In January 2021, I will begin my Fulbright Study-Research grant in Wrocław, Poland.

Gabrielle Voithofer

MS in Applied Biology

The Defense Rests – The Verdict, Graduation!



This May, **Derek Coss** completed his Master's thesis in Applied Biology, titled "Soundscapes and Multimodal Noise: Complex Signaling Environments Alter Mate Choice in Túngara Frogs (*Physalaemus pustulosus*).\" Derek worked in Kim Hunter and Ryan Taylor's lab, studying how natural noise in the tropical rainforests of Gamboa, Panama can alter perception of multimodal signals in túngara frogs. He found that very noisy nights are more common in natural rather than semi-urban environments, and the type of noise can have important implications on a female's perception of male multimodal signals. Derek is continuing to collaborate with Kim and Ryan, while he submits his manuscripts for publication and applies for jobs.



This May, **Sarah Cvach** (left) completed her Master's in Applied Biology with her thesis "Using Stable Isotopes to Assess Diet Overlap Between Ctenophores (*Mnemiopsis leidyi*) and Forage Fish (*Anchoa mitchilli* and *Bairdiella chrysoura*) in the Maryland Coastal Bays\". Sarah's project in Christina Bradley's lab looked at potential habitat and diet overlap between a local ctenophore species and forage fish in a commercially and recreationally important estuary system. In other locations there is a negative relationship between the abundance of this ctenophore and the abundance of forage fish, however in the Maryland Coastal Bays, there is a unique partitioning of diet items between these organisms. Since graduating, Sarah continues to work with the Maryland Department of Natural Resources on a recreational angler survey.



Chandini's thesis was entitled "Impact of prescribed burns on bat populations in the coastal plain forests of the eastern United States.\" Prescribed burns (small scale, low-intensity, controlled burns) are increasingly used as a management tool in forests throughout the United States. She used bat detectors and mist netting to compare bat activity between burned forests and simultaneously monitored unburned forests of similar age and tree species composition. She found that while several common bat species show higher activity in burned forests (likely due to greater openness created by burning of undergrowth), rare species, and species of conservation concern such as those in the genus *Myotis*, did not appear to benefit, and may actually utilize burned sites less than unburned.

Biodiversity Studies Program Winter 2020



Dr. **Eric Liebgold** & **Mary Gunther** traveled to Costa Rica for their Biodiversity Studies Program during Winter Term 2020. The students learned about ecotourism & biodiversity. They participated in forest hikes, zip lining, white water rafting, snorkeling, & national park tours by boat, set up camera traps & experienced a new culture.

Since this class returned in January 2020 the world has changed. COVID-19 has wreaked havoc on Study Abroad programs (as well as the world in general). The safety & well-being of our students is the highest priority. That being said Ms. Gunther & Dr. Liebgold are very much looking forward to leading these classes again in the future. We will return to Costa Rica again when it is safe. We may even try these classes in another country – Belize anyone? Keep your eyes open for announcements about Study Abroad programs when it is safe to travel again. In the meantime: If you are interested in participating in this class in the future contact either Dr. Liebgold or Ms. Gunther.



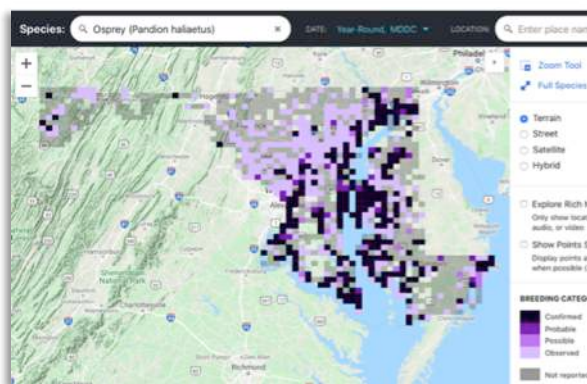
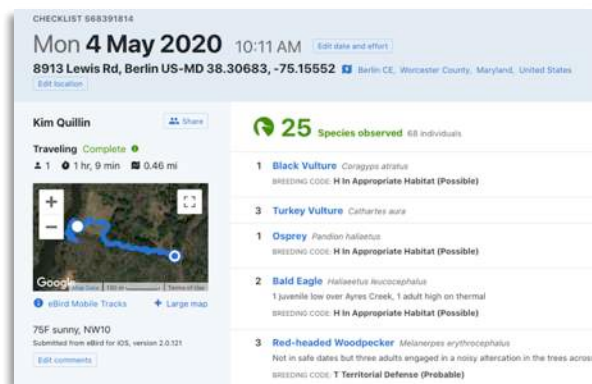
Our Faculty

Launch of Maryland Breeding Bird Atlas 3

Birding is a great way to spend time outdoors during a pandemic! **Drs. Ellen Lawler** (SU Biology faculty emerita), **Eric Liebgold**, & **Kim Quillin** are among the volunteers who have been out in the forests, wetlands, & neighborhoods coding birds for The Maryland & DC Breeding Bird Atlas 3, a massive five-year effort which began January 1, 2020.

The goal of the project is to collect data on the distribution, relative abundance, & breeding of birds across Maryland & Washington DC, building on earlier efforts in 1983-1987 (BBA1) & 2002-2006 (BBA2). The data will help scientists to evaluate ecosystem health, changes in bird distributions related to habitat quality & climate change, strategies for conservation, & much more.

The Cornell Lab of Ornithology has developed a user-friendly atlas portal to the eBird phone app & website (<https://ebird.org/atlasmdmc/home>). Biology students can contribute to the effort by entering their bird sightings & adding breeding codes (in the same way they would through the regular eBird page; see instructions & handbook on the webpage). In the future, students will also be able to engage with this rich data set for research projects in SU courses. Stay tuned!



Philadelphia Horticulture Society Gardening for Biodiversity Symposium



Graduate student, **Anthony LaBarck** & Drs. **Philip Anderson**, **Samuel Geleta** & **Chris Briand** (from left) attended the Gardening for Biodiversity Symposium & Philadelphia Flower Show on March 4, in Philadelphia PA.

Council on Undergraduate Research



Dr. **Jessica Clark**, assistant professor of biological sciences & co-director of SU's Office of Undergraduate Research & Creative Activity (OURCA), recently was elected as a national Council of Undergraduate Research (CUR) biology councilor.

CUR focuses on providing high-quality, collaborative undergraduate research; & scholarly & creative opportunities for faculty & students throughout the U.S. Comprising the organization's governing board, councilors help set policy, design & coordinate programs & create information resources within CUR.

Straw Bale Gardening Project in a Pandemic at Dr. Mark Holland's



From left, **Will Morris**, **Mark Holland**, **Philip Anderson**, **Sandy Ramses**, **Paul Clements** & **Steve Gehrich**

Retirement – Dr. Samuel Geleta



After 23 years of service, **Samuel Geleta** finished his last semester of teaching & will be retiring at the end of the Fall 2020 semester. We wish him well, & he will be greatly missed by everyone in the Department of Biological Sciences – Students, Staff & Faculty!

Drive By Birthday Celebration!



Organized by Drs. **Christina Bradley** & **AJ Auerbach**, Dr. **Jennifer Nyland** was treated to a drive-by birthday party during the COVID-19 pandemic this semester. Drs. **Michael Carter**, **Xuan Chen**, & **Elizabeth Emmert**, & student **Peter Kim** participated, to make this birthday extra special during a very difficult time for all. Thanks to everyone for their kind words, waves, honks, & gifts. The Department of Biological Science is the best at SU!

Publications & Presentations

Ksepka DT, Balanoff AM, Smith NA, Bever GS, Bhullar BS, Bourdon E, Braun EL, Burleigh JG, Clarke JA, Colbert MW, **Corfield JR**, Degrange FJ, De Pietri VL, Early CM, Field DJ, Gignac PM, Gold MEL, Kimball RT, Kawabe S, Lefebvre L, Marugán-Lobón J, Mongle CS, Morhardt A, Norell MA, Ridgely RC, Rothman RS, Scofield RP, Tambussi CP, Torres CR, van Tuinen M, Walsh SA, Watanabe A, Witmer LM, Wright AK, Zanno LE, Jarvis ED, Smaers JB (2020). Tempo & Pattern of Avian Brain Size Evolution. *Current Biology*: <https://doi.org/10.1016/j.cub.2020.03.060>

Bernot JP, Rudy G, **Erickson PT**, Ratnappan R, Haile M, Rosa BA, Mitreva M, O'Halloran, DM & Hawdon JM. Transcriptomic analysis of hookworm *Ancylostoma ceylanicum* life cycle stages reveals changes in GPCR diversity associated with the onset of parasitism. *International Journal for Parasitology* – Accepted.

Drs. **Jennifer Nyland** & Stacia Kock (Honors College) presented at the 10th Annual Teaching & Learning Conference in February. Their oral presentation discussed the HONR 111 Student Research Conference as a model for encouraging first year student investment in research.

Despite the ban on travel, Dr. **Jennifer Nyland** gave an hour-long oral presentation at Environmental Health Symposium: Immunotoxicity: the Intersection between Toxic Exposure, Infectious Disease, & Autoimmunity in early April. Originally scheduled to take place in Scottsdale, AZ as a continuing medical education seminar for MDs, the entire conference was moved to an online platform. With close to 1,000 attendees, Dr. Nyland's presentation, "Common Exposures: Arsenic, Mercury, & the Immune System" was very well received & resulted in an overwhelming Q&A session.

Biology Alumni

Lalisse Geleta



Greetings from the International English School
Stockholm!



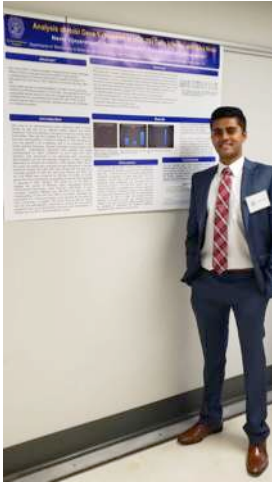
Enjoying the sun in Gotland, Sweden. Gotland is an
island in the Baltic Sea.

After graduating with my Bachelor's of Science in Biology, I continued on to complete my Masters of Arts in Teaching (MAT) at SU in May 2016. I was quite adamant about living & working abroad & chose to focus my efforts on teaching internationally. Two months after graduation, I began a teaching position in Sweden & have been happily teaching middle school science for the past four years. I work at *Internationella Engelska Skolan* (International English School) in Stockholm & I teach a range of topics within Biology, Chemistry, Physics & Technology to students in grades 6-9.

Life as a teacher in Sweden has many perks, allowing us to perform experiments such as acid-base titrations, sheep lung & heart dissections, long term engineering projects & more, which are quite advanced for the middle school level. Additionally, living in Sweden has allowed me the opportunity to travel all throughout Europe during our various breaks & holidays. I originally began my position on a two-year contract & now, four years later, I'm in no rush to return to the States.

I'm thankful for my education at SU. The MAT equipped me with the readiness to engage & educate students in the sciences & the BS in Biology provided me with the knowledge & scientific experience to prepare & hopefully inspire my students to pursue scientific careers in their future.

Navin Vijayarangan



Biology alumnus **Navin Vijayarangan** has been accepted into:

- NIH IRTA Fellowship: Genetic & Rare Disease Project – National Center for Advancing Translational Sciences
- Georgetown University Medical School: Special Masters In Physiology
- New York Medical College: AMP

Alumni Connection



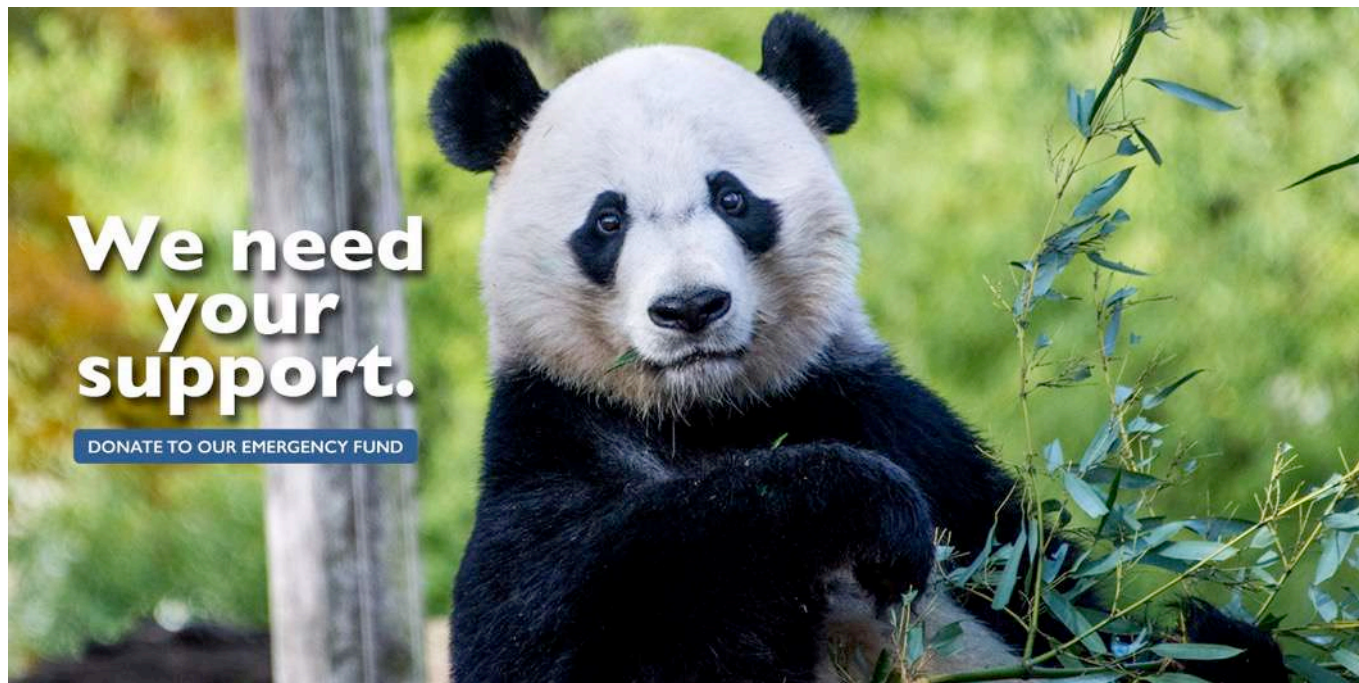
SU BIOLOGY ALUMNI

Stay Connected!

We want to hear from you! Please let us know where you are living & what you are doing! We would love to hear from you. In the future we plan to have an Alumni Connection section in our newsletter.

Send information to: Sandra Ramses, Program Management Specialist
SHRAMSES@SALISBURY.EDU

National Zoo COVID-19 Emergency Fund



<https://nationalzoo.si.edu/support/national-zoo-covid-19-emergency-fund>

Your Editor



Dr. Chris Briand

Send any contributions to chbriand@salisbury.edu