

Spring has arrived at Salisbury University!



Biology Alumni



After graduation, **Kristen Fowler** (Class of 2005) worked for the University of Maryland L.E.S.R.E.C. facility where she was encouraged to continue her education in Horticulture. She moved to Pennsylvania and earned a second Bachelor of Science Degree in Ornamental Horticulture in 2009 from Delaware Valley University. During her time there and after, she worked for several greenhouses in Bucks County. In 2010, she started her own gardening service, Horticulturist for Hire, serving Bucks and Montgomery Counties and the greater Philadelphia area. This January, she accepted the position of Vegetative Grower at Gro-N-Sell Inc., a wholesale starter plug production company. They provide quality annual and perennial starter plants to retailers all over the country. Kristen wrote: "The fundamental knowledge that I gained at Salisbury University, from working on the landscaping crew, to being a research student for the Biology Department, have all been an important part of my developing career in Horticulture."



Photo by [Bre Bradham](#) | The Duke Chronicle

**Amy Hafez** (Class of 2010) is pursuing her PhD in Molecular Genetics and Microbiology at Duke University. The Graduate and Professional Student Council has elected her its next Graduate Young Trustee, see <http://www.dukechronicle.com/article/2018/02/gpsc-votes-ph-d-student-amy-hafez-as-next-graduate-young-trustee>

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**Sarah Rubin** graduated from Salisbury University in 2009 with a Bachelor's of Science in Biology (organismal track). Since she was a child, she dreamed of working with wildlife and animals and has wonderful opportunities pursuing her interests. Since graduating she has held positions with the National Park Service, the Delmarva Discovery Center (<http://www.delmarvadiscoverycenter.org>), and the highly esteemed Mote Marine Laboratory and Aquarium (<https://mote.org>). Currently, Sarah is the Education Program Supervisor at Brevard Zoo in Melbourne, Florida (<http://brevardzoo.org>). At Brevard Zoo, whose mission is wildlife conservation through education and participation, Sarah brings nature-based programming onsite and afterschool that she develops and oversees. She oversees the program staff and constantly develops new programs that spread the importance of wildlife conservation throughout central Florida.

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Our Graduate Students



**Stephanie Lamb** successfully defended her MS thesis on 2/22/2018: Using population and habitat parameters, and genetic factors, to assess populations of an endangered species, the Spotted Turtle, *Clemmys guttata*, on the Delmarva Peninsula.



From Jan 8 - Feb 9, 2018, **Marissa Moran** worked as a visiting researcher at the Smithsonian Institution National Museum of Natural History in the Department of Invertebrate Zoology. She worked in collaboration with Dr. Anna Phillips, a Research Zoologist at the Museum and the curator of the National Parasite Collection, and her technician, Dr. Herman Wirshing. Over the past several months, Marissa has been working to collect 3 different life stages of the trematode parasite that she studies. She collected the parasite's larval stages from the eastern mud snail (*Ilyanassa obsoleta*), and the ribbed mussel (*Geukensia demissa*), and adult worms from the herring gull (*Larus argentatus*). The different life stages were identified morphologically at SU, and then were taken to the Museum where she tested these identifications using DNA barcoding. Marissa got great results and is excited to share them soon! In addition to being a member of a lab here at SU, she is now also a lab member at the Smithsonian in the Department of Invertebrate Zoology.

**Our Undergraduate Students**

**Biodiversity Studies** traveled to Costa Rica during Winter Term 2018. The program consisted of two different courses traveling together. Dr. Eric Liebgold taught: *BIOL 299 International Studies in Biology; subtopic Tropical Biodiversity* and Mary R. Gunther taught *BIOL 105 The Economics of Biodiversity* that looks at biodiversity and ecotourism. This is the second time Dr. Liebgold has run his class and the fifth time Ms. Gunther has run hers. The group was fortunate to fly out the morning of January 3 just in time to miss the blizzard! Both classes were highly successful – there was a lot of learning as well as fun!



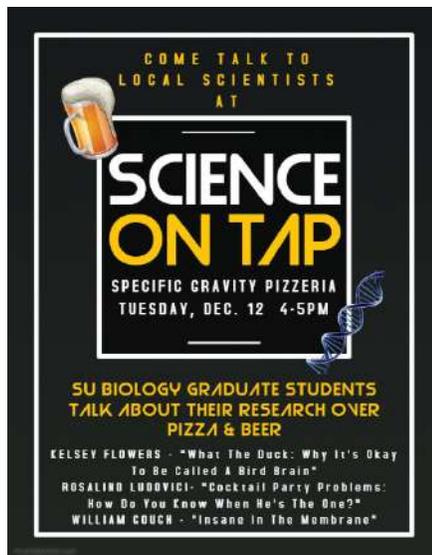
**Biotechnology – From the Teaching Lab to the Brewery**

Celebrators at the 2018 New Year’s Eve celebration in Berlin, MD, toasted the new year with a unique beverage, a Champagne beer made by Burley Oak Brewery using a wild yeast isolated by biology students from Salisbury University. The wild yeast is known as the “Brachel” strain, after two biology 2016 alumnae – **Brittney Lozzi** and **Rachel Keuls** - who isolated the wild yeast from grapes as a project in Dr. Erickson’s BIOL 470 Biotechnology. Pictured is brewer Ian Spice (SU ’14) of Burley Oak Brewery, sampling the champagne beer he created (photo by: Kristin Helf).

More information on the champagne beer can be found at this link: <https://shorecraftbeer.com/burley-oak-champagne-beer-nye/#>



Teaching Innovation: Science on Tap at Specific Gravity



Last semester Drs. Ryan Taylor and Kim Hunter tried something new by connecting research done by Biology Graduate students to the non-science public. This event was a byproduct of teaching Biology 501: Science Communication. The graduate students presented talks that were 8-10 minutes at Specific Gravity Pizzeria and Beer Joint in Salisbury, MD. There were two events and each presentation had more than 70 people present. This may turn into a regular event that could be shared with all graduate students at SU. The Biology Graduate students did an amazing job: Marissa Moran, Kelsey Flowers, Rosalind Ludovici, Eaqan Chaudhry, Will Gough, and Matt Zimmerman. Thanks to M. Moran for the design of the posters.

Our Faculty



**Roie Cordrey** recently visited the College of Charleston in Charleston, SC, mainly the Mace Brown Museum of Natural History. Staffed by geology undergraduates, the museum boasts well-organized displays of almost 1000 fossils which include Oligocene mammals of North America, crinoids, fossil plants, dinosaur bones, cave bears, and real teeth from Megalodon, a huge shark that has been extinct for 2.6 million years. The College of Charleston is a public sea-grant and space-grant university and offers a variety of education services from faculty fellowships to precollege student activities. Campus buildings are scattered throughout historic downtown Charleston which adds to their appeal. The visit was informative as well as impressive.

**Dr. Eric Liebgold**

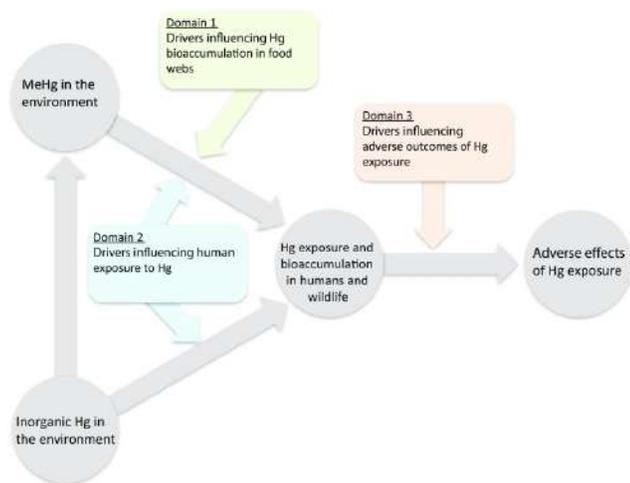
Grant AH, Ransom TS and Liebgold EB. Differential survival and the effects of predation on a color polymorphic species, the red-backed salamander (*Plethodon cinereus*). Accepted, Journal of Herpetology

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**Dr. Jennifer Nyland**

Eagles-Smith, CA, Silbergeld EK, Basu N, Bustamante P, Diaz-Barrige F, Hopkins WA, Kidd KA, and **Nyland JF**. 2018. Modulators of mercury risk to wildlife and humans in the context of rapid global change. *Ambio*. **47**(2): 170-197. DOI: 10.1007/s13280-017-1011-x.

This is a new publication that is the result of the invited panel discussion at the 13<sup>th</sup> International Conference on Mercury as a Global Pollutant that I participated in last summer. The special edition of the journal has now been published and the full issue is available online, open access at: <https://link.springer.com/journal/13280/47/2/page/1>



Conceptual model of mercury (Hg) pathways through the ecosphere, and the domains of drivers that influence the risk of Hg exposure and related adverse health effects.

**Salisbury Teaching and Learning Conference – February 16<sup>th</sup>, 2018**

Best-practices for online learning: Make it fun!

Melissa Thomas in ID&D requested that I submit an abstract about my BIOL 105: “Magical Medicinals: the Potions of Harry Potter” online course. The committee accepted my submission for a 20 minute presentation. Since I wanted to highlight the video recordings and other resources available through ID&D (all of which I utilize in teaching the course), I opted to create a video presentation that I played in the background while I narrated.

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Drs. Ryan Taylor and Kimberly Hunter



### 1. SU Building Research Excellence (BRE) Program - \$12,000

Drs. Kim Hunter, Ryan Taylor and Megan Murphy received one of the first grants from the Building Research Excellence (BRE) program at Salisbury University. This is a highly competitive internal grants program that rewards faculty achievement in research with up to \$12,000. **The grant title was: A Genomic View of a Complex Signaling Environment.**

Abstract: Animal communication is inherently multisensory, with individuals signaling and processing a mix of stimuli (e.g. visual plus auditory) in complex environments. Our research focuses on how multisensory signals influence the perception of sexual signals by two receivers, female túngara frogs and frog-eating bats. We plan to use next-generation sequencing (NGS) to link individual behavioral choices to genotypes. Individual choices may be contingent on current or past ecological conditions. The severe El Niño of 2015 in Panama has presented a unique opportunity to investigate individual variation across a seven-year time series. Our proposed study will make a transformational contribution to: 1) the integration of behavior, genomics, and extreme ecological disturbance, 2) analytical tool development, and 3) modeling authentic research incorporation into the undergraduate curriculum, (Biol 360, Genetic Analysis).

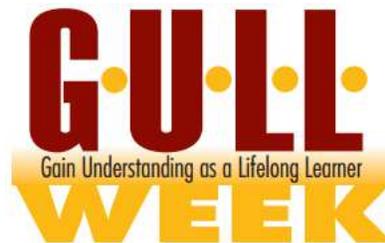
### 2. Smithsonian Scholarly Studies Grant - \$46,000

Drs. Rachel Page, Kim Hunter, Ryan Taylor, and Michael J. Ryan received a Smithsonian Grant. **Our grant title was: Multimodal Signaling: Is more information always better.**

We will address a simple yet fundamental question in animal behavior: is more information always better? Most events in nature create disturbances that can be perceived through multiple sensory modalities. Does the addition of information via multiple sensory systems enhance a receiver's ability to detect and make decisions about these natural events? Or does too much information hamper detection and decision-making? In behavioral ecology there is often the implicit assumption that more information is better. In human psychophysics, however, there is substantial evidence that more information can lead to cognitive overload and disrupt signal detection and decision-making. **Our proposed study will probe these hypotheses, impacting how we view information and animal decision-making.**

To address these questions, we will study a multisensory animal communication system with two receivers, one intended (the túngara frog) and one unintended (the frog-eating bat). To attract mates, male túngara frogs produce loud calls from shallow bodies of water. Bats eavesdrop on these mating signals and use them to home in on their prey. To call, males shuttle air back and forth across their vocal folds, inflating and deflating large, visually conspicuous vocal sacs. Both female frogs and frog-eating bats attend to the dynamic movement of these vocal sacs – frogs using vision, bats using echolocation. And this is not all – there is a third component of the advertisement display. As males call, they produce ripples on the water surface. Both frogs and bats attend to these seismic cues.

Gull Week 2018



Faculty & staff participating in Gull Week!  
**G**aining Understanding as a Lifelong Learner (GULL) Week occurs in the early part of Fall and Spring semesters. During GULL Week undergraduate students participate in assessments. The information gathered during GULL Week will be used by SU to demonstrate skills that SU students develop and to improve the General Education program. Your participation is needed and important to the University!

<http://www.salisbury.edu/uara/gullweek/>

SU's Giving Day

*Save the Date for SU's 2nd Annual Giving Day: April 3, 2018*

Giving Day and Biology is one of the departments participating! Sea Gulls around the world - alumni, faculty, staff, students and friends – come together to support the schools, programs, and causes that are important to us, helping them earn matching funds, as we foster research, art, championship athletics, and the experience of a Salisbury education. Information can be found at <http://www.salisbury.edu/giving/givingdayfaqs.html>.

**WHEN YOU GIVE MAKE SURE YOU DESIGNATE YOUR GIFT TO:  
SU BIOLOGY DEPARTMENT**

***This money will be used for Student Travel, Research, and Biology Seminar Series.***

◆ **Your gift will be matched!**

**Students: 2:1 (up to \$200)**

**Alumni & Friends: 1:1 (up to \$100)**

◆ Visit <http://salisburyu.givecorps.com> to make your gift!

STEM Jobs Career Night



USA Science & Engineering Festival is in Washington DC, April 6<sup>th</sup> – 8<sup>th</sup> at the DC convention center;

New for 2018 will be our **STEM Jobs Career Night**, April 6<sup>th</sup> at the convention center (3:00 pm – 8:00 pm). We are anticipating 75 – 100 organizations, with their recruiters and talent acquisition teams. We would like to invite students to attend **Career Night**. Admission is free; but you do need to register. You can do so in the below link. This link will also provide details of Career Night and the Festival as well.

<https://usasciencefestival.org/student-registration-stem-career-fair-night/>

All students that attend Career Night are also invited to attend the USA Science & Engineering Festival's Sneak Peek Friday (10:00 am – 3:00 pm on the same day, same location, free of charge. Sneak Peek Friday is the kick off to our weekend Festival. Over 700 corporate, federal and educational partners will be exhibiting hands-on, interactive displays of amazing science and technology demonstrations. Please see the below three-minute video for a highlight of Festival activities and programs:

2016 Video

<https://www.youtube.com/watch?v=mFu-pQPBUyG>

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Alumni Connection



## SU BIOLOGY ALUMNI

### *Stay Connected !*

We want to hear from you! Please let us know where you are living and 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](mailto:SHRAMSES@SALISBURY.EDU)

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