

Zebrafish spinal cord with axons (red), schwann cells (blue) and sensory neurons (green).
Courtesy of Dr. Jessica Clark

Biological Sciences Faculty Award



Myra Dickey was chosen by the Biology faculty to receive the Department of Biological Sciences Faculty Award for her outstanding performance as a major in in the Biology Department. Myra has been very involved in research in the Liebgold lab and the Gehrich lab, presenting her research at various conferences, including at the UMBC Undergraduate Research Symposium where she won first place in the Biological Sciences section. She is also a member of the Biological Honor Society and an SU Undergraduate Research Fellow and is currently applying to graduate schools.

Biology Alumni



Dr. William A. Powell received his BS in biology in 1982 at Salisbury University, and his PhD in 1986 at Utah State University studying the molecular mechanisms of hypovirulence in the chestnut blight fungus, *Cryphonectria parasitica*. He spent over two years as a postdoctoral associate at University of Florida researching transformation techniques using the fungal pathogen, *Fusarium oxysporum*. In 1989 he became a faculty member at the State University of New York's College of Environmental Science and Forestry at Syracuse, NY, where he began collaborating with his colleague, Dr. Charles Maynard, researching methods to develop a blight-resistant American chestnut (*Castanea dentata*). He has also worked with American elm and hybrid poplar. Dr. Powell currently has over 50 peer reviewed publications and one patent. He teaches courses in Principles of Genetics, Plant Biotechnology, How to Present Research to the Public, and Biotechnology Freshman orientation.

Here is a TEDx talk on American chestnuts, co-sponsored by National Geographic, that Bill gave in Washington, DC a few years ago: <https://www.youtube.com/watch?list=PLCyMgSRkuDve2zuvIAAIt5YUfSzg477Xi&v=WYHQDLCmggyg>

Also, here is an article for the general public about Bill's research: <https://theconversation.com/new-genetically-engineered-american-chestnut-will-help-restore-the-decimated-iconic-tree-52191>

Links to news coverage can be seen on The American Chestnut Research & Restoration Project webpage: <http://www.esf.edu/chestnut/>



American chestnut tree in the Salisbury University Arboretum exhibiting cankers, the result of chestnut blight.



SU Biology alumnus, **Ryan Protzko**, wins Big Ideas competition for sustainable orange bottles proposal.

Ryan Protzko, a 2010 SU Biology Faculty Award winner, will graduate this spring with his PhD in Molecular and Cellular Biology from the University of California, Berkeley. His research proposal, the ZestBio Orange Bottle project, recently won a "Big Ideas" competition. His project aims to convert billions of pounds of citrus peels resulting from orange juice production into bioplastics by fermenting the waste material into oils using genetically engineered microbes. <http://bigideas.berkeley.edu/winners/zestbio-orange-bottles-uc-berkeley/>

Our Graduate Students



On April 10th, **Andrew Cronin** successfully defended his MS thesis entitled "Environmental Heterogeneity and Female Mate Choice in the Tungara Frog". Thesis Advisors: Drs. Ryan Taylor and Kim Hunter



From April 6-15th, **Kelsey Flowers** travelled to University of Washington's Friday Harbor Laboratory located on San Juan Island, Washington (left) to scan waterfowl beaks. This past fall and winter through the help of student hunters, she was able to obtain 135 specimens of waterfowl. Kelsey took these, and samples provided by Brian Schmidt from the Smithsonian National Museum of Natural History Bird Division to obtain micro-CT images at Friday Harbor. After being trained to use the equipment by Dr. Mackenzie Geringer, Kelsey spent the week scanning all the samples, which she will use for her graduate research.



Congratulations to **Rosalind Ludovici**, who was recently elected Secretary of the Graduate Student Council for the 2018-2019 academic year.



On April 14th, **Morisa Moran** attended the 719th Meeting of the Helminthological Society of Washington held at Penn State York. She gave an oral presentation on identifying trematodes and elucidating the life cycle of a trematode using molecular and morphological techniques. She earned second place for the Stirewalt-Lincicome Student Award for best student presentation.

Morisa said: "I am very happy to have brought home another win for SU, especially for my first-ever oral presentation at a professional meeting. Last year at the 718th Meeting of the society, I won the Judith Humphrey Shaw Award for best poster presentation."

Lions and Tigers and SU Students? Oh My!



On Saturday April 21 Mary Gunther’s BIOL 105 History of Zoos class finally made it to the National Zoo – after several cancellations due to either high winds closing the Bay Bridge, snow, sleet or rain! It was sunny and pleasant which was much appreciated by all. The students applied what they had been learning in class about animal enrichment, different barrier types for enclosures, conservation programs the zoo is involved with and what makes a good exhibit. All of this will be applied to their final class project which involves designing a perfect zoo exhibit for an animal of their choosing.



Honors Night

HONORS PROGRAM

WELCOME
*Dr. Philip Anderson, Advisor
Beta Beta Beta*

GRADUATE AND PROFESSIONAL ADMISSIONS
Dr. Les Erickson, Chair

RECOGNITION OF ACHIEVEMENT
AND PRESENTATION OF
BIOLOGICAL SCIENCES FACULTY AWARD
Dr. Stephen Gehrlich, Research Mentor

RECIPIENT
Myra Dickey

BETA BETA BETA
BIOLOGICAL HONOR SOCIETY INITIATION
*Presentation of Candidates
and Initiation Ceremony*
*President – Matthew Zimmerman
Vice President – Mariah Passwaters-Stamper
Treasurer – Amanda Rocker*

*Refreshments will be served after the ceremony. We will be
happy to give tours of our teaching and research facilities.*

BETA BETA BETA
LAMBDA PSI CHAPTER INITIATES, 2018

Haley Nicole Appel	Allison Nalesnik
Karsin Bachran	Devin Leigh Nichols
Emily Renee Bowdle	Sara Eleanore Nickoles
Talane Jordan Bowne	Kara Lynn Ogborn
Andrea Carmack	Audrey Lynn Ramming
Shannon Marie Chambers	Kayla Rexroth
Olivia Rose-Marie Hamilton	Barbara Taylor
Mollie Anne Jewell	Morgan Caroline Tibbo
Chan Young (Peter) Kim	Jessica Ann Marie Todd
Abigail Lepera	Sarah True
Karly Alisa Lohan	Navin Vijayarangan
Denise Sara Manole	Vanessa Walsh
Patrick Blair Miller	Madison Margaret Weinberg
Stephanie Marie Miller	

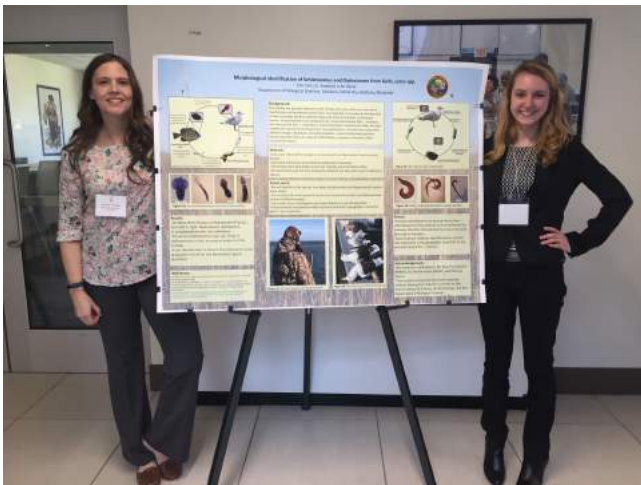
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Our Undergraduate Students



SU Biology student, **Lauren DeLong**, has been selected for a prestigious German Academic Exchange Service Research Internship in Science and Engineering (DAAD RISE). She will spend 3 months this summer in Germany working on a biotechnology project involving inflammation and cardiovascular disease.

<http://www.salisbury.edu/news/article.html?ID=7825>



Chelsey Tull (Right) and **Jennifer Veenhof** (Left), gave a poster presentation on the morphological identification of adult trematodes in gulls (*Larus* spp.) at the 719th Meeting of the Helminthological Society of Washington held at Penn State York on April 14th. Advisor: Dr. Ann Barse



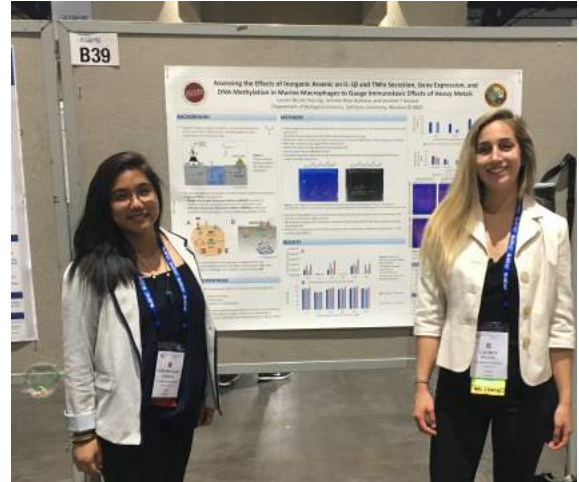
We now have access to SU's Nanticoke River Center (NRC; <http://www.salisbury.edu/nanticokeRiverCenter/>) for our classes, research, retreats, etc. Dr. Christina Bradley took her Estuarine Ecology class there, on an overnight field trip and reports that the students loved it.

ASBMB Annual Meeting, San Diego CA

Students and Faculty attended the 2018 American Society for Biochemistry and Molecular Biology (ASBMB) annual meeting in San Diego, California.



Myra and Ian present their poster “What’s Killing the Buzz? The Effects of Neonicotinoids on *Apis mellifera* Mitochondrial Metabolism”.



Jamie and Lauren presented their poster “Assessing the Effects of Inorganic Arsenic on IL-1 β and TNF α Secretion, Gene Expression, and DNA Methylation in Murine Macrophages to Gauge Immunotoxic Effects of Heavy Metals.



We took full advantage of our location, exploring the tidal pools and caves, touring White Labs, which specialize in yeast and fermentation, and visiting the J. Craig Venter Institute (JCVI) in La Jolla. From left: Ian Ralph, Gene Williams, Jamie Barbosa, Myra Dickey, Patti Erickson and Lauren Delong.



While at the J. Craig Venter Institute the group from SU met with Clyde Hutchison, Hamilton Smith and John Glass. These researchers are co-authors on many high-powered papers describing synthetic biology and minimal genomes. Ham Smith won the 1978 Nobel Prize in Physiology or Medicine for “the discovery of restriction enzymes and their application to problems of molecular genetics”. The SU group is (l to r) **Ian Ralph, Lauren Delong, Patti Erickson, Gene Williams, Myra Dickey and Jamie Barbosa.**



Nobel Laureate Martin Chalfie (giving our students career advice). He shared the 2008 Nobel Prize in Chemistry for his work involving green fluorescent protein (GFP).
<http://biology.columbia.edu/people/chalfie>



The group also visited White Labs, a yeast research and manufacturing company, headquartered in San Diego. They provide yeast to brewers, wine makers and distillers:
<https://www.whitelabs.com>



While at the J. Craig Venter Institute, the group from SU was hosted by virologist/immunologist Dr. Gene Tan (<https://www.jcvi.org/about/gtan>).



Among other conference highlights, students met CRISPR-Cas expert Dr. Feng Zhang (center).

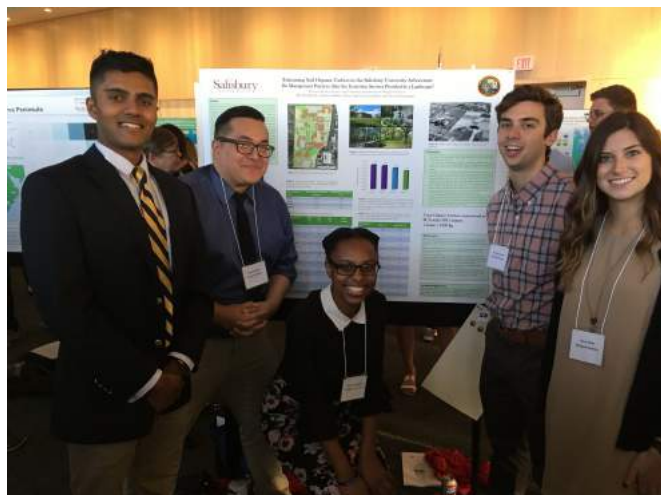
Ecology – BIOL 310



Biol 310 students work in both the field and the lab! The below link is for a video from Dr. Eric Liebgold's Ecology class (BIOL 310) showcasing all the great work students do in the 310 labs every semester (starring students from Fall 2017).

<https://vimeo.com/263008677>

Salisbury University Student Research Conference 2018



**SALISBURY
UNIVERSITY
STUDENT
RESEARCH
CONFERENCE**

Students present their research findings at the Salisbury University Student Research Conference. From left, Navin Vijayarangan, Danny Nguyen, Rachelle Joseph, & Cierra Poole.

Oral Presentations

Christin Bogley: Trophic and Immunologic Responses of Zooplankton Exposed to Environmental Toxicants. Mentor – Christina Bradley

Eaqan Chaudhry: Which Turtle Species are the Best Housemates? Cohabitation in Pond Turtle Species. Mentor – Eric Liebgold

Lauren DeLong: Assessing the Effects of Inorganic Arsenic on IL-1 β and TNF α Secretion, Gene Expression and DNA Methylation in Murine Macrophages to Gauge Immunotoxic Effects of Heavy Metals. Mentor – Jennifer Nyland

Myra Dickey: Determining the Occurrence of Sex-Biased Dispersal and Potential for Inbreeding in an Endangered Species, the Spotted Turtle (*Clemmys guttata*). Mentor – Eric Liebgold

Patrick Garvey: Neuroanatomy and Feeding Habits of Waterfowl. Mentor – Jeremy Corfield

Garrett Gordy & Kara Ogburn: Scat Stats: Determining the Levels and the Potential sources of Fecal Bacteria in a Local Water Way, Focusing on Human, Dog and Poultry Specimens. Mentor – Mark Frana

Michael Kramer: Restoring Integrity and Function of the Peripheral Nervous System via Alagebrium Administration in Hyperglycemic Zebrafish. Mentor – Jessica Clark

Karly Lohan: Wicomico Creekwatchers. Mentor – Christina Bradley

Denise Manole: Contributions in Taxonomy: Maryland Dynastinae. Mentor – Dana Price

Marissa Moran: Molecular and Morphological Identification of Echinostomes in the Mud Snail, *Ilyanassa obsoleta*, the Ribbed Mussel, *Geukensia demissa*, and the Herring Gull, *Larus argentatus*, in a Delaware Salt Marsh. Mentor – Ann Barse

Jacob Shilling: Does Docosahexaenoic Acid (DHA) Inhibit Metastasis in B16 Cell Lines by Altering Cell Adhesion Potentials and Cell Motility? Mentor – Eugene Williams

Hannah Small: A Proposal to Estimate Population Size using Mark-Recapture Methods and Egg Mass Surveys of the Eastern Tiger Salamander (*Ambystoma tigrinum*). Mentor – Eric Liebgold

Miranda Smullen: A Stable Isotope Analysis of the Trophic Relationships of Two Intestine-Dwelling Avian Flatworms: A Host Tissue-Feeding Trematode, and a Nutrient Absorbing Cestode. Mentor – Christina Bradley

Sarah True: Deletion of the Yeast DUF1 Gene Decreases Programmed Cell Death and Increases Mitochondrial Dysfunction. Mentor – Les Erickson

Kara van Fleet: Comparing Mitochondrial Pyruvate Carrier Gene Expression in Juvenile and Adult Honey Bees Using the MPC-2 gene. Mentor – Stephen Gehrlich

Madison Weinberg: Optimization of Hyperglycemic-Induction Using Streptozotocin in Adult Zebrafish. Mentor – Jessica Clark

Poster Presentations

Karsin Bachran & Jessica Bitondo: Variation in availability for sampling among turtle species on the Delmarva Peninsula. Mentor – Eric Liebgold

Jeremie Rose Barbosa: Human Low-Dose Environmentally-Relevant Heavy Metal Exposure: Signaling and Epigenetic Changes of the Innate Immune Response Induced by Inorganic Arsenic. Mentor – Jennifer Nyland

Rehan Choudhry: Characterization Of The Anti-Fungal Compounds Produced By *Methylobacterium* spp. Mentor – Mark Holland

Caroline Copes: Neural Morphology Associated with Species-Specific Communication in Songbirds. Mentor – Jeremy Corfield

Alexander Grillo: Comparative Analysis of Cobalamin and Folate Content in Chenopodium quinoa Seeds as a Result of Microsymbiont Metabolic Production. Mentor – Mark Holland

Nicole Hammond, Audrey Ramming & Navin Vijayarangan: Analysis of Nutrient Concentrations and Productivity in Dammed and Undammed Systems within the Chesapeake Bay Watershed. Mentor – Christina Bradley

Fiona Halloran: Copy Number Alterations on Human Chromosome 21 Associated with Prostate Cancer. Faculty Mentor - Philip Anderson, Biological Sciences

Garrett Hansen: Analyzing Anthropogenic Influences on Waterfowl Through Stable Isotope Analysis. Mentor – Christina Bradley

Mollie Jewell: Eliciting Differentiation of Human T Lymphocytes into TH1 or TH2 cells with Inorganic Arsenic Exposure. Mentor – Jennifer Nyland

Teri Keller: Sensory Ecology of the Nocturnal Kakapo. Mentor – Jeremy Corfield

Abigail Lepera & Oscar Chatain: Biochemical Methods to Analyze Soil Microbes on the Salisbury University Campus. Mentor – Elizabeth Emmert

Dorothy MacLean-Blevins, Alesha Seifert & Brittany Edwards: A Comparative Study on Sensory Brain Regions in Specialized and Unspecialized Birds. Mentor – Jeremy Corfield

John McCloskey: Determining the Key Component for Reactivating Germination in Seeds. Mentor – Mark Holland

Danny Nguyen, Anthony Labarck, Rachelle Joseph, Cierra Poole & Navin Vijayarangan: Estimating Soil Organic Carbon in the Salisbury University Arboretum. Mentor – Christopher Briand

Tiffany Nungari: The Impact of Mercury Bioaccumulation on Copepods. Mentor – Jennifer Nyland

Crystal Thompson: Effects of Inorganic Mercury on Cytokine Release by Jurkat Cells. Mentor – Jennifer Nyland

Mariah Passwaters-Stamp: Assessing the Immunotoxic Effects of Mercury Exposure on Murine Macrophage Cultures. Mentor – Jennifer Nyland

Bradley Rose: Quantifying Marine Derived Nutrient Importance in Dammed and Riverine Environments. Mentor – Christina Bradley

John McCloskey: Determining the Key Component for Reactivating Germination in Seeds. Mentor – Mark Holland

Victoria Stubb: An Analysis of the Risks and Benefits of Combined Oral Contraceptive Use among Adolescents and Young Women. Mentor – Jennifer Nyland

Chelsey Tull & Jennifer Veenhof: Morphological Identification of Schistosomes and Diplostomes from Gulls, Larus spp. Mentor – Ann Barse

Vanessa Walsh: Dam Effects on Biomass and Composition Changes with the Food Web. Mentor – Christina Bradley

Our Faculty

Dr. Judith Stribling



Dr. Judith Stribling, Professor and former Coordinator of the Dual Degree Program in Biology / Environmental Science, is retiring this June. Dr. Stribling joined the SU Biology faculty in fall of 1994, and she has been the Wetland Ecology professor and a member of the Ecology faculty team for all of that time. She was also the science director for the Wicomico River Creekwatchers monitoring program.

She is looking forward to completing some research projects, then spending more time sailing, fishing, hunting, gardening, and being a grandmother. She also has plans to take on several new endeavors, some not even identified yet. Dr. Stribling notes, "I will miss my students and teaching more than I can say, and I will always feel extremely grateful to have been a part of this excellent family that is the SU Biology department!"

Hi Dr. Stribling,

I can't thank you enough for everything you did for me. I found my passion for wetland plants in your class. I still remember how much fun we had doing our plant projects driving all over the eastern shore looking for wetland plants. The adventures in the van led to me getting my Ph. D. from UNC Chapel Hill in Marine Sciences and of course my project studying denitrification in constructed wetlands was first learned in your classroom. I now take my Environmental Biology class on field trips every week in the college van. They love the trips to the beach and wetlands and in the fall when the wetland plants are blooming and I look out over the *Juncus* plants it makes me smile remembering all the good times at SSU!!! . I hope you have an amazing retirement!!!!

THANKS FOR EVERYTHING!!!!
Amy Poe Class of 1998!!!!!!

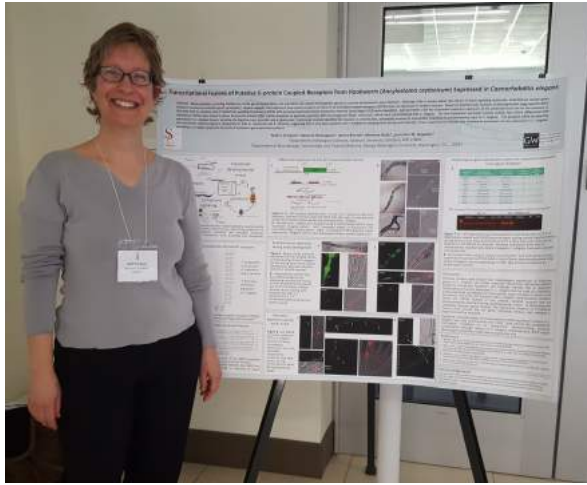
Publications

*Simons, P *Molina, M **Hagadorn MA & Price DL. 2018. Monitoring of Dung Beetles (Scarabaeidae and Geotrupidae) Activity along Maryland's Coastal Plain. *Northeastern Naturalist* 25: 87–100.

**Grant AH, Ransom TS & Liebgold EB. 2018. Differential Survival and the Effects of Predation on a Color Polymorphic Species, the Red-Backed Salamander (*Plethodon cinereus*). *Journal of Herpetology* 52:127-135.

* Undergraduate & ** Graduate research students

Dr. Patti Erickson



Dr. Erickson attended the 719th Meeting of the Helminthological Society of Washington. She gave a poster presentation on analyzing hookworm gene expression patterns in *C. elegans* to screen for host-specific receptor candidates. Dr. Erickson also presented this poster at the ASBMB Annual Meeting in San Diego.

Dr. Ellen Lawler, Professor Emeritus



On **Sat. May 26, from 9am until 3pm**, I'll be at the **Artisans Fair held at Lord Baltimore Elementary School in Ocean View, DE**. It's sponsored by the South Coastal DE AARP and raises money for their scholarship fund. "The Gang's All Here" will be one of my paintings on display there. This show also features a Farmer's market, bake sale and auction. For more information, see <http://www.southcoastalarp.org/artisans-fair/>

And if you want to check Ellen's work at other locales and other times, the following shops show her original paintings:

Classic Custom Framing & Gallery, Snow Hill Rd. in Salisbury
The Lu-Ev Framing Shop, East Dover St. in in Easton
Delmarva Discovery Center, Market St. in Pocomoke

And her cards and prints are available at:

The Ward Museum's gift shop in Salisbury
The Friends of Bombay Hook gift shop, in the refuge visitor center, east of Smyrna, DE
Delmarva Discovery Center, Market St. in Pocomoke

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.

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SHRAMSES@SALISBURY.EDU

Your Editorial Team

Dr. Chris Briand (editor) & Dr. Philip Anderson (co-editor).
Send any contributions to chbriand@salisbury.edu



Featured Charity



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