



# BIOLOGICAL SCIENCES

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WINTER 2019 NEWSLETTER

THE UNIVERSITY OF  
**ALABAMA**<sup>®</sup>

# FROM THE CHAIR

The 2019-2020 academic year is off to an exciting start. Our faculty have been awarded more grants and contracts than ever before. We have surpassed \$6.3 million in funding, the highest on record for our department. Additionally, this past year The University of Alabama achieved Doctoral Universities–Very High Research Activity status, formerly known as the R1 category, in the Carnegie Classification of Institutions of Higher Education. This is the nation’s highest level of research activity for institutions that grant doctoral degrees. Research funding, research staff and the number of doctoral graduates are among the criteria used in determining Carnegie classifications. We are very happy to have contributed to this great achievement.

As a department, we continue to achieve a high level of excellence because of our growing number of dedicated faculty. This past spring Dr. Carla Atkinson, who joined our department in 2015 as an assistant professor, received the 2019 President’s Faculty Research Award in Physical and Biological Sciences, Mathematics, and Engineering in the Emerging Scholar category. This award goes to an outstanding faculty researcher and celebrates excellence in research, creativity and scholarship. We are incredibly proud of Dr. Atkinson and her work. I encourage you to take a look at her website (<http://atkinsonlab.ua.edu>) to learn more about the great work she is doing in Alabama and elsewhere.

We also welcomed three new faculty to the department this fall: Dr. Kenneth Hoadley, Dr. Nate Jones, and Dr. Monica Kersch-Becker. Dr. Hoadley is establishing his lab at the Dauphin Island Sea Lab and will play a critical role in our Marine Sciences program. Both Dr. Jones and Dr. Kersch-Becker have labs located on our main campus. You can find their full profiles on the faculty portion of our website (<https://bsc.ua.edu/classification/faculty-and-instructors/>). We are happy to have them join the department and look forward to their contributions to our program. We currently have ongoing searches to add an additional four faculty members during this upcoming year!

On top of the nationally and internationally recognized research that our faculty are conducting, we are teaching and advising an impressive number of ambitious graduate and undergraduate students. Altogether, our undergraduate majors and minors, along with our graduate students, now surpass 2,000 students! Of these exceptional students, many receive awards and scholarships, and we are very proud of them. Sommer Starr and Abigail Sisti, two of our graduate students, received the prestigious National Science Foundation Graduate Research Fellowship Program (NSF-GRFP) award. The GRFP recognizes and supports outstanding graduate students early in their career in science, technology, engineering, and mathematics, as they pursue research-based master’s and doctoral degrees at accredited American institutions. Additionally, this year, Dr. Matthew Jenny’s student Ryan Cooke, who is participating in our Accelerated Master’s Degree Program, was awarded The Grantland and Louise Rice Scholarship for characterizing the expression of odorant receptor genes during zebrafish development and in response to changes in the gut microbiome. Madison Brewster, a senior majoring in Biological Sciences working in Dr. Kevin Kocot’s lab, was awarded The J. Henry Walker Memorial Scholarship for her studies on the biodiversity and evolution of a poorly known group of deep-sea molluscs from Iceland. We are very proud of the work that all our students are doing in the department. The recognition of our students’ research and achievements are made possible through the generosity of donors who, over the years, have established scholarship funds. On behalf of the entire department, I would like to thank each of our donors for their generosity.

This year was also a time for us to celebrate the accomplishments of two of our outstanding faculty who retired. Dr. Martha Powell joined the Department of Biological Sciences as Professor and Department Chair in 1997 and retired with 22 years of service at UA. Among her notable research contributions, she was the first person to isolate microbodies from fungi and to show they had a role in lipid metabolism in



motile cells, which is critical to understanding how chytrids have energy to infect other organisms or find substrates for decay. Her research has earned her many recognitions, including election as a fellow of the Mycological Society of America. She was recognized for her effectiveness as an educator with the Outstanding Faculty Award in 2002. She was also recognized in 2011 with the Blackmon-Moody Outstanding Professor Award, one of the most prestigious awards given annually by UA, after winning \$5 million in grants to help strengthen undergraduate education in the sciences. She was a mentor and is a friend to many of us, and we thank her for her vision, dedication, and service.

Dr. Findlay retired from the department this past summer after sixteen years of distinguished service to the department as its Bishop Professor of Biology. Dr. Findlay made a significant contribution to teaching, including the mentorship of 16 graduate and post-graduate scientists, and he was a major player in the Louis Stokes Alliances for Minority Participation (LSAMP) program, a fellowship program funded by NSF. He was also instrumental in acquiring a Graduate Assistance in Areas of National Need (GAANN) award, a program funded through the Department of Education. Dr. Findlay committed himself throughout his career to the service of the department, college, and university. He served on the Faculty Senate and Faculty Senate Steering Committee and co-chaired the Faculty Senate Finance Subcommittee. He was awarded grants and contracts over the course of his career from the National Science Foundation, National Institutes of Health, Office of Naval Research, Environmental Protection Agency, Department of Energy, and Department of Education. On behalf of the department, I would like to thank Dr. Findlay for his contribution to the field of microbial ecology, dedication, and service and wish him happy retirement years.

Finally, we are always happy to engage with prospective students, current students, and alumni! If you are considering becoming an undergraduate or graduate student, or are interested in what we are doing in the department, then this newsletter and our website will be very useful for you. I am always excited to share what is going on in our department, so if you are visiting Tuscaloosa or our campus, we would love for you to visit us. If you are interested in exploring opportunities or supporting the UA Department of Biological Sciences, please don't hesitate to give me a call or send me a note at [bmortazavi@ua.edu](mailto:bmortazavi@ua.edu). I would love to hear from you!

## **DR. BEHZAD MORTAZAVI**

Professor and Department Chair  
Department of Biological Sciences

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***To make a gift to the department, visit  
[bsc.ua.edu/make-a-gift](http://bsc.ua.edu/make-a-gift).***

# TRAINING FUTURE BIOLOGISTS

Designed for incoming freshman, Bama Biology Bootcamp is a week-long, intensive program that serves as an introduction to college and the biological sciences and shares a plethora of information on preparing for and succeeding in those. In its third year, this UA program has everything from lectures by instructors of first-year biology courses to information on opportunities in undergraduate research. Empowering all students, Biology Bootcamp strives to attract a diverse population. Over the last three years, 175 attendees have participated, which speaks to the success of this program.

Biology Bootcamp also prepares students for college life in general, with sessions on study skills and university involvement, as well as information about student services such as the writing, counseling and career centers. Mentorship is another vital component of Bama Biology Bootcamp, with attendees being



put into small groups and paired with graduate and undergraduate mentors who lead various sessions and study groups, giving incoming freshmen a chance to interact with successful students and their professors. However, it's not all work and no play—these incoming freshmen also have a chance to attend various gatherings for meals and a mid-week pool party!

Abbie Ray, a sophomore majoring in biology, was both a past attendee and a 2019 mentor. She had this to say about the experience: “As a sophomore I got the opportunity to be a mentor, which allowed me to create relationships with incoming freshmen whose shoes I was in just a year prior. I learned just how much the Biology Bootcamp set me up for success. I not only created friendships with people I met through Biology Bootcamp, but also became better prepared for the upcoming year.”

Setting our biology students up for success begins with the opportunity to attend Biology Bootcamp and continues with events like BioFest. An annual welcome to new students in the Department of Biological Sciences, this event includes a biology career fair and an undergraduate and graduate student research poster colloquium. We're proud to say the 2019 BioFest saw double the number of posters, with 59 total, and nearly 880 attendees! The career fair and poster colloquium give students the chance to see what experiences are available here at UA in terms of clubs and research activities. Opportunities such as these are key to a successful college experience with regard to involvement and experiential learning opportunities, in addition to allowing students to see the success and achievements of our upperclassmen. Supporting initiatives such as these contribute to the success of students aspiring to be productive in various fields of biological science. Check out event photos and our 2019 poster winners at <https://bsc.ua.edu/congratulations-to-the-2019-biofest-poster-presentation-award-winners/>.



## RESEARCH SPOTLIGHT: EMILY BROWN

Emily Brown graduated with a MS from Dr. Paige Ferguson's lab in May 2018. Her research focused on conservation of the Red-cockaded Woodpecker (*Picoides borealis*; RCW), a federally endangered species, in the Oakmulgee Ranger District of the Talladega National Forest. This is the largest RCW population in Alabama. Despite efforts by the U.S. Forest Service to meet the District's Recovery Plan objective of 394 active clusters (groups of trees that a group of RCWs inhabit), the number of active clusters had not exceeded 120. Therefore, the objectives of Emily's study were to identify factors limiting RCW population growth and identify management methods that could reduce these limitations. She led four structured decision making workshops with representatives from the U.S. Forest Service, USDA Animal and Plant Health Inspection Service, Longleaf Alliance, Birmingham Audubon Society, and local residents. With input from stakeholders, she built a decision network that estimated the relative likelihood of a range of management options to produce outcomes that met stakeholder objectives, including increase the number of RCW clusters. Results indicated that cavity insert installation had the greatest probability of increasing the number of RCW groups and prescribed burning as most likely to meet the combination of

stakeholder objectives. Sensitivity analysis suggested that the number of RCW groups was most influenced by cavity availability, adult survival, recruitment rates, food availability, and herbaceous understory. Based on the sensitivity analysis and suggestions from the U.S. Forest Service, Emily designed a field study that investigated the relationship between vegetation structure and RCW reproductive output. Results indicated that the size of pine trees and area they occupy on the landscape most influenced reproductive output, such that there was a lower chance of egg or hatchling loss when there was a larger area of large trees. This research has been featured by The Wildlife Society, BBC Wildlife Magazine, Alabama Public Radio, and Alabama Museum of Natural History. Since UA, Emily has worked with Southern Nevada Environmental Inc. to monitor the Mojave Desert tortoise, a federally threatened species. She also surveyed bats and herpetofauna, such as desert tortoises, western pond turtles (IUCN vulnerable), gila monsters, and Columbia spotted frogs, with the Nevada Department of Wildlife. Emily is about to start a new position in Las Vegas as a Natural Resource Specialist with the Center for Environmental Management of Military Lands, a unit in Colorado State University's Warner College of Natural Resources.

**For more stories of alumni research,  
visit [bsc.ua.edu/alumni](https://bsc.ua.edu/alumni).**

# FAREWELL, OLD BIOLOGY BUILDING: LONG LIVE YOUR MEMORIES

During the fall 2019 semester, all remaining residents were relocated so you could undergo a much-needed renovation because, through the years, you have become worn down. However, for many years you were the main hub of our department. We staffed our office, educated our students, and performed research, all within your sturdy polygonal structure. Thus, we thank you, Biology Building, for serving us well. In your honor, we, the former occupants, reflect back on some good and funny times...

## Water, Water Everywhere

My memories of the building will forever be associated with water, lots and lots of water. There was the day when the air conditioner drip pan in the ceiling overflowed, forming a waterfall just outside the door to the scanning electron microscope. This led then-department chair Bill Darden to ask if he needed to buy umbrellas for equipment! We may have been the only optical analysis facility in the country with a wet-dry vac as an indispensable piece of equipment. There is also my memory of the morning I came to my 4th floor research lab only to find that one of the ceiling tiles had collapsed on top of my compound microscope due to the previous night's rainstorm. Finally, who can forget the flood all over the second floor, near the teaching labs, when a student pulled the cord to an emergency shower in the hall? Of course, the old Biology Building was designed without drains!

**Harriett Smith-Somerville, Ph.D., Emeritus Professor of Biological Sciences and Chair of Biological Sciences (Spring 2006; 2007-2009)**

Rain-induced floods, old air conditioning ducts and emergency shower episodes were not the only sources of H<sub>2</sub>O. Professor Gordon Ultsch and his students regularly forgot that they were filling turtle tanks up on the 4th floor. Unfortunately, my PCR machines AND the designated isotope portion of my 3rd floor lab were directly below. I decided after the second such turtle-flood to move both to a safer location!

**Janis O'Donnell, Ph.D., Emeritus Professor of Biological Sciences and Chair of Biological Sciences (2014-2018)**

## How About Those Bathroom Sinks?

I think I can speak for most of us when I state that using a public restroom is typically a solitary affair, especially among strangers. However, those odd sinks in the old Biology Building second floor bathrooms were conversation starters. First time visitors to the ladies room would often try to turn on the water by "breaking a beam" in the large bowl of these sinks, to no avail. As a long-time building resident, I would intervene on their behalf, revealing the foot pedal on the floor that turned on the water. This inevitably led to conversation and comradery on this ridiculous design. However, in consultation with my hubby, I learned the situation was a little more perilous in the men's room, as he would occasionally intervene with newcomers who thought those weird sinks were urinals!

**Kim Caldwell, Ph.D., Professor of Biological Sciences**



## The Portal of Unproductivity

Dr. Kim Caldwell and I ended up assigned to offices located in the hallway that led to the auditorium. These interior rooms had, in another life, been a single office and adjoining library connected with a door. Kim and I got along really well and found that having a kindred soul in the office on the other side of the door led to many enjoyable, albeit usually non-scientific, conversations. The door was thus dubbed “The Portal of Unproductivity” and could only be opened when neither of us had a pressing deadline!

**Julie Olson, Ph.D., Professor of Biological Sciences**

## Circular Logic

I was working at a microscope in my interior 3rd floor fly lab during the first week of classes one fall semester. As expected, numerous students passed by looking lost. After I noticed that one particular young woman was making her third clockwise trip past my lab, I finally asked her if I could help. Almost in tears, she wailed, “I can’t find the second floor!”

**Janis O’Donnell, Ph.D., Emeritus Professor of Biological Sciences and Chair of Biological Sciences (2014-2018)**

Goodbye to the old Biology Building, whose endless circular hallways made you realize that even the best of scientists can fall into circular reasoning.

**Iyare Izevbaye, Ph.D., earned doctorate with Janis O’Donnell**

Yep, going around in circles in the circular building is memorable alright, as are the countless free pizzas of those times, being the department’s contribution to the welfare of us starving grad students in exchange for feigned interest in what visiting scholars had to say to us over lunch.

**Hakeem Lawal, Ph.D., earned doctorate with Janis O’Donnell**

## Small Classroom Visitors

I was teaching an 8 a.m. Principles of Biology class in the subterranean auditorium attached to the Biology Building on a Monday morning after a fierce weekend of non-stop rain. Apparently, the flooding rains displaced a family of field mice from their home and they took up residence under the auditorium podium. About 15 minutes into my class, they got scared, shot out from under the podium and startled the humans. I think the humans also startled them, especially once mass screaming began. The mice panicked and headed up the aisles for the top-back of the auditorium at breakneck speeds. This caused an immediate reaction as 300 students began jumping on top of their seats, clutching their backpacks. However, as this chaotic scene unraveled in front of me, there was one individual who was chill. “Sparky,” a service dog, was simply laying in the aisle and paying no attention to the mice. I found his demeanor, in the middle of the frenzy, to be a calming influence, and I was thus inspired to retake control of the classroom. Since mice can travel at speeds of 12 feet per second, they left almost as quickly as they came, so we shook off the morning surprise and continued with our lecture on cellular respiration.

**Kim Caldwell, Ph.D., Professor of Biological Sciences**

The first research lab where I worked in college was in the basement of an old biology building. Dim, creepy-creaky and with the occasional mouse escaped from the animal facility. Upon starting work at UA, I once again found myself in the basement of an old biology building. Dim, creepy-creaky and with the occasional lizard coming down from the ground level stairs. Over all those years in research I had come full circle (figuratively and literally)! UA’s basement had the added features of a circular, disorienting configuration where I spent too much time going round and round. One of the most “exciting” parts of the basement lab was when storms would roll in and rain would flood through the ground level windows (located at the top of the walls of the lab itself). When we moved into the new, shiny SEC with real windows we were all excited. But I would argue the new buildings do not have the same memorable character as the old, quirky ones. Goodbye, Biology!

**Laura Berkowitz, Ph.D., Research Associate, Biological Sciences**

## What is that horrible smell?

One of my former graduate students had collected some raw sewage from the wastewater treatment plant in order to isolate phage. After incubating this sewage for a number of days at human body temperature, he had what he needed and was ready to dispose of the sample. I learned of this plan when a horrible smell started to emanate from the autoclave room on the first floor. After finding the student and learning he had elected to autoclave the remaining sample, we desperately tried to stop the autoclave. Because it was a “liquid” culture, the run could be aborted but the steam and temperature had to be gradually decreased, and so the smell continued to emanate. By this point, everyone on the first floor had left the building to find breathable air. People from the second, third, and fourth floors soon joined them, as the smell continued to make its way up the stairwells and permeate the building. I usually have a pretty strong stomach, but even I was trying not to throw up as I exited the building. That was the last time raw sewage came into my lab!

**Julie Olson, Ph.D., Professor of Biological Sciences**

# BIOLOGY AND TWO IMPORTANT SEMINAR SERIES

A good seminar series provides a number of benefits to an academic department. Primarily it is an event that brings members of the program at all career levels together, often sparking new scientific conversations and building social relationships. Furthermore, it provides breadth of knowledge for everyone to complement their own research and a means to interact with the global academic community. The Department of Biological Sciences is therefore proud to be involved in not one, but two premier seminar series in addition to its regular Friday seminar series, both of which are also open to the general public. These are the Darden Lecture series hosted specifically by Biology, and in collaboration with twenty other departments, the ALLELE (ALabama LECTures on Life's Evolution) seminar series.

The William Darden lecture series, kindly sponsored by Mrs. Eloise Hill brings one prominent biologist to campus a year to specifically address current environmental and humanitarian issues. This year's speaker, Dr. Frans B. M. de Waal, is an esteemed primatologist who provided the intriguing title "Mamas last hug: animal emotions and what they tell us about ourselves". We hope that you will all join us for future Darden lectures as it is a fantastic opportunity for anybody with an interest in science to get involved. The continued support provided through generous donors from members of the public, such as Mrs. Hill, are invaluable and allow us to provide this opportunity. Thank you, Mrs. Hill and others who have supported this series, in the past.

Theodosius Dobzhansky famously said that nothing in biology makes sense except in the light of evolution. Despite overwhelming evidence for evolution, the topic has been considered controversial and it is often misunderstood. In 2004, this led a group of UA faculty to develop a seminar



series to help communicate the science of evolution to the campus and community. Now in its 15th year, the Alabama Lectures on Life's Evolution (ALLELE) seminar series strives to bring world experts on evolution to campus to give free lectures that are open to the public and accessible to non-specialized audiences. The 2019-2020 schedule embodies the diversity of topics encompassed by the seminar series including those hosted by biology faculty members such as "How the cow evolved to beat cancer malignancy, and how humans can learn from it" by Gunter Wagner on 11/7/19, "Life on Eight Legs - How Arachnids can Inspire Science and Discovery" by Eileen Hebets on 1/23/20, "Evolution in Black and White: How Fruit Flies Change Their Spots and Stripes" by Trisha Wittkopp on 2/20/20, and "Why are women shorter than men?: The surprising evolutionary reasons behind sex differences in human height" by Holly Dunsworth on 3/5/20.

The series is supported by over 20 different campus departments (including Biological Sciences), colleges, and programs and is organized by the Evolution Working Group (EVOWOG) steering committee. Given the wide range of academic backgrounds involved in this process, Biological Sciences does not endorse the viewpoints or subject matter of all invitees, but we are proud to be part of what has

been a very successful series over the last 15 years. Those interested in learning more, getting involved, recommending a speaker, or hosting a speaker are encouraged to visit the ALLELE website at [evolution.ua.edu](http://evolution.ua.edu).

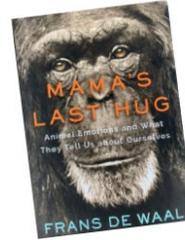
The Department of Biological Sciences  
Presents  
The William Darden 2019 Lecture of

## Dr. Frans B. M. de Waal

Author of  
*Mama's Last Hug: Animal Emotions and  
What They Tell Us about Ourselves*

November 14, 2019 • 6:30pm  
Biology Building Room 127

Book signing and reception to follow:  
Alabama Museum of Natural History



For more information:  
(205) 348-1807  
[bsc.ua.edu](http://bsc.ua.edu)



# RAISING THE BIOLOGY RESEARCH PROFILE

A number of faculty in Biological Sciences have recently secured prestigious awards from the National Science Foundation (NSF) to study wide-ranging biological phenomena.



## THE BEES KNEES

Drs. Jeff Lozier (associate prof.) and Janna Fierst (assistant prof.) were recently awarded a grant entitled “Bumble bee cold tolerance across elevations—from epigenotype to phenotype across space, time, and levels of biological organization” through the recently established NSF “Rules of Life” program. The project is a collaboration with faculty at University of Wyoming and Ohio State University and will use bumble bees from mountainous habitats to examine how organisms adapt to cold temperature extremes. Data ranging from genome and epigenomic sequence to physiological thermal tolerance limits obtained from bees in different environments, social castes, and generations, will be used to obtain a holistic picture of how these organisms adapt to temperature extremes. The project will support at least two PhD students and a postdoctoral researcher at UA.

## MORE ON THE APLACHAPHORES

Dr. Kevin Kocot’s (assistant prof.) research program studying the biodiversity, systematics and genomics of invertebrates recently got a major boost through an NSF CAREER award. Dr. Kocot and a number of his laboratory members will sample the Antarctic coastal waters for new species of worm-like molluscs known as Aplacophorans. These creatures exhibit highly diverse calcium carbonate scales or spine-like structures. The Kocot lab will spend the next five years uncovering their ecological and evolutionary significance and whether they are patterned by the same genetic mechanisms that other molluscs use to make shells.

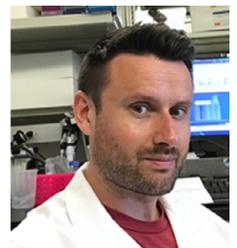


## AVOID THE POLYPLOID

Dr. Michael McKain (assistant prof.) and his collaborators across four institutes were recently awarded NSF funding through their Consortium for Plant INvasion Genomics (CPING) to better understand how plants become invasive and provide insights into the management and prevention of invasive species. Dr. McKain’s lab will focus on Johnsongrass, *Sorghum halepense*. Named for an Alabama land owner, this pest is one of the world’s most noxious weeds and is found on all continents, except for Antarctica, and major islands. The McKain lab will use genomic techniques to understand how being polyploid (having more than two copies of its genome) has impacted the invasive capacity of the species since its introduction into the United States. This work will contribute to the overall goal of understanding the genomic factors of invasiveness over the course of an invasion.

## PHARMACOLOGY TECHNOLOGY

Dr. Lukasz Ciesla (assistant prof.) and his collaborator in Chemical and Biological Engineering, Dr. Yupin Baio, recently obtained NSF funding to improve the technology used to screen natural products for drug discovery. They will use nanotechnology to encapsulate iron oxide superparticles in a cell membrane. Why? So they can use the cell membrane as a “fishhook” to fish out only the bioactive compounds that specifically bind to the cell membrane. The iron oxide superparticles act as a “fishing line” to pull these compounds out of the extract they are testing. This technology will greatly streamline our ability to identify and separate bioactive compounds, thereby increasing the rate of drug discovery.



# MEET OUR NEW FACULTY

## Dr. Mônica Kersch-Becker

**Research in a nutshell:** Mônica investigates the underlying mechanisms by which chemical signals shape multitrophic species interactions, population dynamics, and community structure of plants and arthropods.

“In high school, biology was by far my favorite subject. Growing up, I always loved being around plants and animals, and I was truly interested in learning from every facet of life. The freedom of choosing topics to work on and the potential applied effects of my research motivated me to go to grad school. I wanted to deepen my knowledge about species interaction and the important effects the environment has on these interactions. Plants are at the base of food webs; therefore, a major challenge in ecology is to understand how phenotypic plasticity of plant traits affects the complexity and dynamics of plant-associated communities.”

“I enjoy being part of a department that encompasses a diverse set of topics. Talking with different faculty and finding a way to bridge different lines of research is very exciting. This type of interaction has broadened my interests and helped me consider alternative hypotheses in my research. I also cannot wait to have undergraduate and graduate students in my lab. I am especially enthusiastic about mentoring students because my own undergraduate and graduate experiences were pivotal in establishing my fascination with science and research.”



## Dr. Nate Jones



“I’m an interdisciplinary water scientist, which means I work with people from across ecology, engineering, and the social sciences. Each of those groups has a slightly different conceptualization of the water cycle, and they often use jargon in very different ways. For example, even something as simple as the term “groundwater” can cause confusion and headache. It’s really common for folks to use this term in meetings, and then not realize the person sitting across from them has a very different definition.”

“When I was seven, my dad and uncle took me on my first float trip. It was actually a pretty epic failure. We flipped the canoe in the first set of “rapids,” and I got so cold we had to hike out! After that – I was hooked. I spent most of my teenage years watching stream gages, praying for rain, and paddling every chance I could get. Being on the water was (and still is!) a huge part of my life, and very early on, I knew I wanted to help protect these special places for my kids and grandkids.”

“I’m really excited about interdisciplinary research. In the last 50 years, there has been a lot of really great discipline-specific work! We know so much more about river systems than we did even 10 years ago. However, much of that knowledge is confined to specific groups of people (e.g., engineers, ecologists, social scientists). I’m really excited about exploring work at the boundaries of those disciplines and developing a more holistic understanding of how river systems work.”

## Dr. Kenneth Hoadley

“As a child, I always had an aquarium. Keeping my aquatic pets alive and happy was always a challenge and forced me to learn more about how the various marine invertebrates in my aquariums made a living out in the wild. This interest soon spilled over into my studies. As a teenager, my high school science teacher and a local university professor were kind enough to provide me with some needed guidance as I took on my first marine research project. I loved the experience, and my fascination with the marine world has remained largely unchanged.”

“Light is both a source of energy and a major source of stress for photosynthetic organisms. The complex pathways and stress management strategies that exist within marine algae are fascinating. You can interrogate these various pathways by measuring the algae’s natural fluorescence in response to rapid flashes of light. This technique is exceptionally valuable for understanding how photosynthesis differs across algal species and in response to various environmental factors.”

“Science is about perseverance. Do not be afraid to fail; there is always a valuable lesson to be learned and then applied to your next project.”



# CELEBRATING SCHOLARSHIPS

Every spring, outstanding graduate and undergraduate students are recognized for their achievements and awarded much-appreciated scholarships.

Thank you to the donors who have made these scholarships possible!

## GRADUATE AWARDS

The Inge and Ilouise Hill Research Fellowship  
Katie Sandlin

The Joab Langston Thomas Scholarship  
Rebecca Varney

Outstanding Teaching by a Graduate Student in Biological Sciences  
Fall 2018 – Samuel Scopel                      Fall 2018 – Jennifer Thies  
Spring 2018 – Jennifer Gresham              Spring 2018 – Feng Kong

Bishop Award  
Anthony Cremo, Aurora Giorgi, Jason Jackson, Matteo Monti

The Ralph L. Chermock Prize  
Andrei Bombin

The Graham Prize  
Katie Sandlin

## UNDERGRADUATE AWARDS

The Michael L. McDaniel Memorial Scholarship  
Victoria Colon, Caitlin Kinder, Vanessa Marshall,  
Emma Neumann, Olivia Van Praag

The Septima Cecilia Smith Award, Biology  
William Jackson, Madelyn Lee, Pedram Maleknia

The Septima Cecilia Smith Award, Marine Science  
Jillian Hochstrasser

The Grantland and Louise Rice Scholarship  
Ryan Cooke, Bailey Creighton,  
Owen Cunneely, Jillian Dunbar, Sarah Thomas

Holzanagel Award in Biology Major  
Charis Thomas

The James D. and Donjette Yarbrough Scholarship  
Sarah-Ashley Giambrone

The J. Henry Walker Memorial Scholarship  
Madison Brewster



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