



**Odum School of Ecology**  
UNIVERSITY OF GEORGIA

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## Does net size matter?

Students Audrey Pettyjohn (left) and Luke Grider ponder this question while searching for aquatic insects and tadpoles during a visit to the Jones Center at Ichauway in Newton, Georgia. Pettyjohn and Grider were among 19 students enrolled in Ecology's Maymester

Field Program in Ecological Problem Solving, a three-week course that takes students across the Apalachicola-Chattahoochee-Flint River Basin to gain an understanding of how sustainability and resilience are achieved by integrating ecological, economic and social dimensions of complex problems. During this portion of the class, which is an anchor course for the Sustainability Certificate, students met with Jones Center associate scientist Stephen Golladay to learn about water use and freshwater conservation in southwest Georgia.

(Photo: Contributed)



THE MAGAZINE OF THE ODUM SCHOOL OF ECOLOGY

# ECOVOICE

2023-2024

Why you can't take  
box turtles home

p. 10



Student sustainability p. 9

Prize-winning wombat poo p. 12



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This publication is available in an electronic format on request.



## Dean's Corner

**W**hat do ecologists do for a living? As we prepare for fall semester and new students joining the Odum School, I know this will be a topic of conversation. I remember having discussions with my own family who viewed ecologists as "professional lovers of nature" and expressed some skepticism over the viability of that particular career path. In reality, it can be hard to define what ecologists do for a living because there are so many viable careers for ecologists in today's job market.

Just consider the Odum School's new alumni board. In 2023, we launched our first board with 13 extraordinary individuals who received training as ecologists in the school. What do they do for a living? They work for federal agencies, charitable organizations, global businesses, research institutes, zoological parks, non-profits and academic institutions. They make national and international contributions to understanding the natural world, reducing the risk of pandemics, setting national policy, feeding the hungry, training students, and protecting the environment for generations to come. Not bad for a group of "professional lovers of nature."

We can look farther back in the school's history, to the first graduate student symposium in 1995. The students on the organizing committee that year were Liz Kramer (PhD '96), Bob Hall (PhD '96) and Anne Dix (PhD '97). Liz became a public service associate, Bob became a professor at Flathead Lake Biological Station, and Anne became director of the American Schools and Hospitals Abroad Program for USAID. Indeed, our school was founded on Gene Odum's vision that ecologists should contribute to making the world a better place through scientific discovery and the application of scientific principles to the grand challenges of society.

Today, I have the pleasure of watching a new generation of ecology majors, master's students and doctoral students explore their options for making a difference in the world. Many are taking dual degrees and certificates so that their qualifications in ecology are paired with journalism, business, sustainability science and resource management. They are passionate about the work that they do and ready to fulfill Gene's vision for an ecology that makes a difference in the world. What do ecologists do for a living? Maybe we are professional lovers of nature. That seems like a pretty good place to begin.

Mark D. Hunter  
Dean, Odum Chair of Ecology

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Ph.D. student Andrew Blinn searches for prey in spider webs on a cabin wall for a project on what Southern house spiders eat. This research was conducted during a fall 2023 weekend field trip to Skidaway Island for ECOL8000, the only required class for Ph.D. students. Working in groups, students made initial natural history observations in an unfamiliar setting, formulated research questions, collected data and presented their findings and conclusions. (Photo: Ford Ballantyne)



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### ON THE COVER

Ecology graduate student Carleisha Hanns samples benthic macroinvertebrates in the Etowah River using a modified T-sampler. A 2022 James E. Butler Fellow and student affiliate of the River Basin Center, Hanns graduated in August with a master of science degree in integrative conservation and sustainability. (Photo: Mackenzi Hallmark)



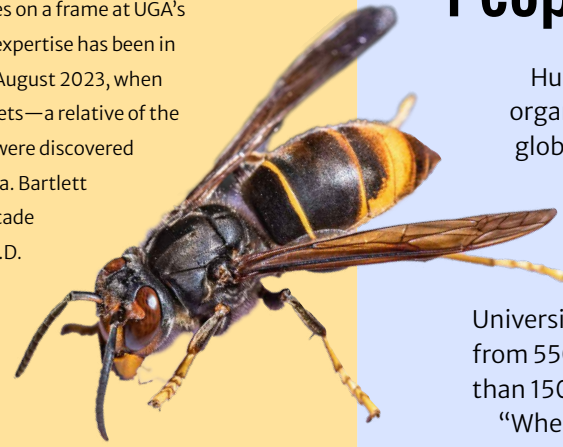


## Tracking down a honey bee killer

(Photo: Allyson Mann)

traced the hornets' arrival to a single queen that arrived from southern China, the Korean peninsula or Japan in late 2022. "If we don't get rid of them," Bartlett said, "there is very little chance that I'm not going to be forced to become the yellow-legged hornet control expert in the U.S."

Assistant professor Lewis Bartlett examines honey bees on a frame at UGA's Honey Bee Lab. His expertise has been in high demand since August 2023, when yellow-legged hornets—a relative of the "murder hornet"—were discovered in Savannah, Georgia. Bartlett had seen them a decade earlier during his Ph.D. work in England. A single nest of the invasive hornets can kill hundreds of foraging honey bees in a day—a problem for Georgia crops that rely on pollinators. Since last summer, Bartlett has helped state agricultural researchers set traps and follow individual hornets, finding and destroying six nests and 21 queens. He also conducted genetic analysis that



## People are altering decomposition rates in waterways

Humans may be accelerating the rate at which organic matter decomposes in rivers and streams on a global scale, potentially exacerbating climate change, according to a new study co-authored by Krista Capps, associate professor at the Odum School and the Savannah River Ecology Laboratory.

Capps and colleagues from Oakland University and Kent State University collected field data from 550 rivers across the globe, collaborating with more than 150 researchers in 40 countries.

"When human activities change the fundamental ways rivers work, it's concerning," Capps said. "Increases in decomposition rates may be problematic for the global carbon cycle and for animals, like insects and fish, that live in streams because the food resources they need to survive will disappear more quickly, lost to the atmosphere as carbon dioxide."

Rivers impacted by urbanization and agriculture are changing how quickly leaf litter decomposes. And when the process speeds up, organisms don't have a chance to

absorb the carbon from the leaf. Instead, the carbon is released into the atmosphere, contributing to greenhouse gas pollution and ultimately disrupting the food chain.

Using predictive modeling, the researchers also identified environmental factors responsible for increased decomposition rates, such as higher temperatures and increased nutrient concentrations.



(Photo: Peter Frey)

## Altizer named ESA Fellow



Sonia Altizer, the Martha Odum Distinguished Professor of Ecology, was named a 2024 Fellow by the Ecological Society of America. She is one of nine Fellows recognized for outstanding contributions to ecological research, education, communication and applying ecological knowledge to broader society.

"ESA has been my core professional community for over 25 years," she said. "It's a vibrant, broad and supportive society, and I am honored and grateful to be recognized as a 2024 fellow."

Altizer is a population ecologist who studies animal behavior, environmental change and pathogen transmission, especially in animals that fly—including birds, bats and butterflies. She has spent three decades studying monarch butterflies and a debilitating disease that infects them. In 2006, she created a community science initiative, Project Monarch Health, to track the spread of the disease-causing parasite in wild monarch populations.

## Researchers to develop tool to predict measles outbreaks

A research team led by faculty at UGA and Pennsylvania State University has received a \$583,000 grant from the Bill & Melinda Gates Foundation to develop a new model to predict measles outbreaks worldwide.

Measles is a highly contagious disease that most commonly affects children. Despite the widespread availability of measles vaccines, cases are on the rise in the U.S., and measles continues to cause severe illness and death in low- and middle-income countries where the disease burden is high.

The project team includes John Drake, Odum faculty and director of the Center for the Ecology of Infectious Diseases, and brings together experts in epidemiology, statistics and computer science, many with a long background in measles risk assessment.

Together, they will train and test models with transmission dynamics in mind, as well as a range of predictors that contribute to outbreak frequency. Once the model is developed, the team plans to provide it to international public health organizations, who may use the tool to allocate resources to countries where outbreaks are imminent.



(Photo: Andrew Davis Tucker)

## Rhodes elected AAAS Fellow

Odum professor Olin "Gene" Rhodes Jr. was one of three UGA faculty members named Fellows of the American Association for the Advancement of Science in recognition of their scientific contributions.

Rhodes, a UGA Athletic Association Professor in the Odum School and director of the Savannah River Ecology Laboratory, conducts a range of research that informs the management and conservation of wildlife.

"I am thrilled and honored to have received this recognition from my peers, and appreciative of the opportunity that being at UGA has given me to advance my career and be recognized in this fashion," he said.

UGA's Victor Thompson and Marguerite "Peggy" Brickman from the Franklin College of Arts and Sciences were also recognized.



## A genetic clock can predict lifespan in mammals

A study conducted by Emily Bertucci-Richter, PhD '22, and Benjamin Parrott, Odum/SREL associate professor, has provided fascinating new insights into the phenomenon of epigenetic drift, also known as "epigenetic disorder." This biological process is like a countdown within an animal's DNA, marking the passage of time and influencing its rate of aging.

The researchers sought to understand how epigenetic drift relates to maximum lifespan and whether CpG density, a specific DNA sequence, plays a role in buffering against it. All animals they studied experience epigenetic drift, but it happened faster in animals that have shorter lifespans, suggesting that there are other mechanisms that act to slow epigenetic drift.

Their findings have significant implications for aging research. By understanding the role of epigenetic drift in aging, scientists may be able to develop new ways to predict and potentially slow down the aging process.

Bertucci-Richter is now a genomics analyst at the University of Michigan.



(Photo: UGA SREL)





## Extreme heat hurts monarchs and their parasites

Monarch butterflies in North America are plagued by *Ophryocystis elektroscirrha* (OE), a debilitating protozoan parasite. A study by Odum School researchers showed that constant exposure to high temperatures severely limits parasite development and also lowers monarch survival.

Sonia Altizer, Martha Odum Distinguished Professor of Ecology, associate professor Richard Hall and Isabella Ragonese, PhD '24, raised OE-infected monarch caterpillars under a range of temperatures and measured parasite infection and monarch survival. Results showed that parasite infection was high across low-to-moderate temperatures—but that parasites failed to develop at the hottest temperature (34 degrees Celsius).

The lack of infection at 34 C was not due to greater host immunity or faster host development. Instead, this phenomenon could reflect the thermal limits of parasite invasion and within-host OE replication inside monarchs.

Monarch survival also fell sharply at the hottest temperature. Monarchs raised at 34 C were smaller, experienced wing deformities, and lived shorter as adults. Overall, the benefits to monarchs from escaping infection under high temperatures are probably outweighed by the costs of extreme heat for the butterfly's own development and survival.

"If butterflies and parasites find themselves in habitats with prolonged heat waves, both players are going to suffer," Altizer said. "A warmer world could mean less parasite infection for monarchs, but won't necessarily produce healthier butterflies."

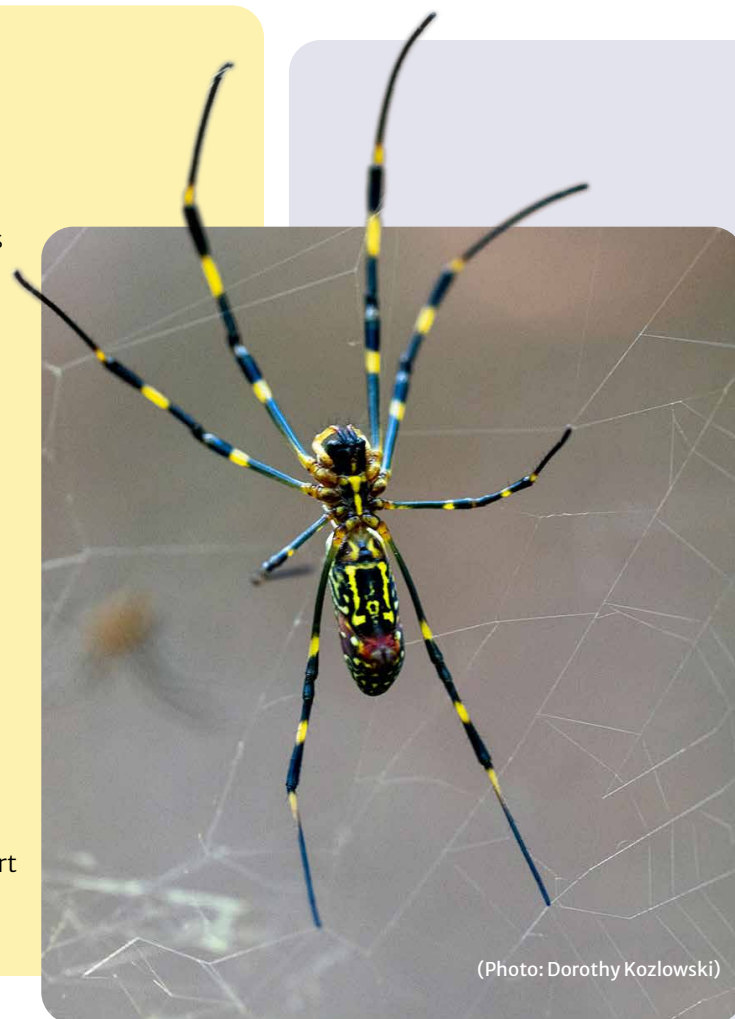
## Joro spiders well poised to populate cities

A study by Andy Davis, assistant research scientist, suggests that Joro spiders tolerate urban landscapes—and their vibrations and noise—better than most native spiders.

Davis and his team examined how Joros can live next to busy roads, which are notably stressful environments for many animals. They found that while Joro spiders near busier roads are somewhat less likely to attack simulated prey, the spiders don't seem to be hurting for it and clock in at about the same weight as their counterparts in less busy locations. That suggests the species can successfully compensate for its human-dominated landscape.

"If you're a spider, you rely on vibrations to do your job and catch bugs," Davis said. "But these Joro webs are everywhere in the fall, including right next to busy roads, and the spiders seem to be able to make a living there. For some reason, these spiders seem urban tolerant."

This study builds on previous work from Davis' lab that showed Joro spiders are well equipped to spread through most of the Eastern Seaboard due to their high metabolism and heart rate. The spiders are also cold tolerant, surviving brief freezes that kill off many of their orb-weaving cousins.



(Photo: Dorothy Kozlowski)

## Land use, nutrient conditions contribute to oak decline

Research by Ecology's Nina Wurzbürger sheds light on how land-use disturbance and nutrient conditions—including the presence of more nitrogen—play a role in the decline of oak forests.

At the Coweeta Hydrologic Laboratory in western North Carolina, Wurzbürger examined land-use strategies, including selective logging and clear cutting, employed over nearly a century. She also gathered data on the black locust tree, a native species that fixes nitrogen in soil.

The study's results revealed that the plentiful—although short term—presence of black locust trees after a land disturbance creates nutrient conditions favorable to species that associate with arbuscular mycorrhizal fungi, like maple and tulip poplar. Those conditions are unfavorable for species that associate with ectomycorrhizal fungi, like oak and hickory.

Fire can help remove maple and tulip poplar, which are not fire adapted, and return nitrogen back to the atmosphere, but prescribed burning is not an accepted practice everywhere. The exclusion of fire plus the addition of more nitrogen means that across the East, maple and tulip poplar have been increasing in dominance at the expense of oak and hickory trees, leaving land management as the strategy with the most potential for preserving oak forests.

"Selectively cutting trees at low levels was the only scenario where oak increased when black locust was historically present," Wurzbürger said. "This suggests there might be a sweet spot for oak regeneration—not too much light and just enough nitrogen to help them ward off their competitors."

Scarlet oaks sit in the foreground, and many of the gold trees in the distance are sugar maples. The red trees are oaks. (Photo: Katherine Bower)

## Odum faculty named Athletic Association, Foundation Professors

Three faculty in the Odum School of Ecology have been recognized with named professorships based on their long-standing commitments to excellence in research, education and service at UGA. During the last two years, Jeb Byers and Craig Osenberg were named UGA Athletic Association Professors in Ecology, and Amy Rosemond was named UGA Foundation Professor in Ecology.



Byers, a leader in the disciplines of population, community and marine ecology, is best known for his research quantifying and predicting the success of biological invasions. He has performed some of the world's leading ecological studies on interactions among native organisms and non-native species, including along Georgia's coast.



Osenberg studies population and community ecology across a diversity of habitats and organisms. His research is organized around interrelated themes: the role of stage-structure and density dependence in fish population dynamics; development and application of statistical tools designed to quantify impacts of human activities on ecological systems; development and application of meta-analysis; and coral reef dynamics.



Rosemond studies the effects of land-use change and climate change on the health and vitality of streams and rivers. Her research program is motivated by society's need for healthy, resilient freshwater ecosystems, equitable access to their goods and services, and the long-term sustainability of aquatic life.





Student Isabella Pellicano works on an independent research project titled “The influence of edge effect and herbivory on tropical terrestrial fern diversity and leaf traits.” Pellicano received funding from UGA’s Center for Undergraduate Research Opportunities for this work and presented her results at the undergraduate poster session during Ecology’s Graduate Student Symposium. (Photo: Contributed)



Students in the fall 2023 Costa Rica Ecology Program took a day trip to El Tigre waterfalls in Monteverde, where they hiked on trails and hanging bridges during their visit. El Tigre is located near the program’s home base in San Luis. Studying abroad in Costa Rica is a “transformative experience for students, academically, professionally and personally,” according to lecturer and undergraduate coordinator Amanda Rugenski, who led the program. (Photo: Contributed)



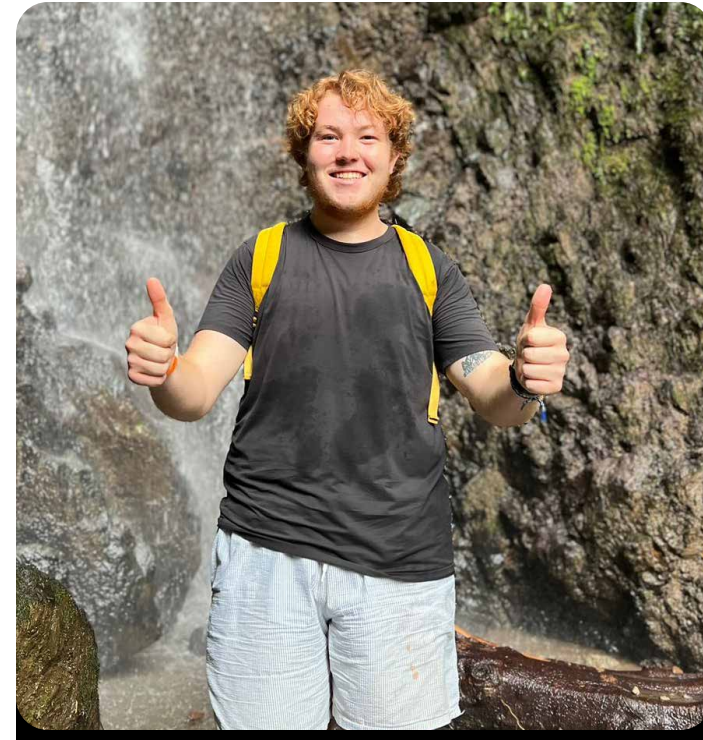
## Creating a successful oyster reef breakwater

Tom Bliss (left) and John Pelli build an oyster reef with bags of shells during low tide in the marsh areas near Skidaway Island, Georgia. (Photo: Peter Frey)

Oyster reef breakwaters are a form of natural infrastructure that is gaining popularity in coastal regions, but there’s a shortage of data on what environmental conditions best suit these structures. Led by UGA Athletic Association Professor Jeb Byers, a team of ecology and engineering researchers with the Institute for Resilient Infrastructure Systems is working to fill this gap.

The team used a combination of environmental models to explore three questions: How the height of oyster reefs responds to local hydrodynamic conditions, what flow and depth conditions produce the tallest reefs and best oyster survival, and what design frameworks can be created for using living shorelines as nature-based infrastructure. Modeling an area known as the South Atlantic Bight, a coastal region that runs from near West Palm Beach, Florida, to just off of Cape Lookout, North Carolina, they were able to predict the height of oyster reefs and forecast how these reefs would reduce wave energy. Taller reefs break waves more effectively than short reefs, thereby dissipating wave energy before it reaches the shore.

The team produced a map of estimated reef heights across the entire coast of the state of Georgia, as well as suggestions for how best to implement oyster reef breakwaters as a nature-based solution.



**Birkley Leander Heynen, 2003–2024**

(Photo: Contributed)

The Odum community lost a bright light when undergraduate student Birkley Leander Heynen died unexpectedly on March 4, just 10 days before his 21st birthday and months shy of graduation.

Birkley was well known in the Odum community and outside of it. He followed his passions, which led him to get involved with UGarden, Shell to Shore and UGA’s Office of Sustainability. He’d developed a fitness habit that turned him into “the most joyful rider on bike 2” at Classic City Cycling and drove him to train for and run his first marathon.

As a middle schooler, Birkley fell in love with sea turtles while visiting the Georgia Sea Turtle Center in Jekyll Island. He saw his first sea turtle in the wild while studying in Costa Rica during fall 2023, where he researched the effects of flow on leaf decomposition, respiration and algal colonization in tropical streams. When he returned to Athens, he applied for and received a sustainability grant for a project focusing on how trash traps affect organic matter dynamics in urban streams (see page 9).

Birkley was passionate about the show *Survivor*, applying multiple times to be a contestant. He was known for giving sweaty hugs. He was the kind of person who knew someone everywhere he went.

Even if you didn’t know Birkley personally, you probably knew who he was. Maybe you saw him towering over classmates in the hallway or heard him laughing loudly in the undergraduate student lounge. He had a big personality and a compelling presence—you couldn’t miss him.

Dean Mark Hunter taught Birkley in a class on agrivoltaics. “He was a student who had a lot of ideas. He would come up with one, and he would get so excited, and his eyes would

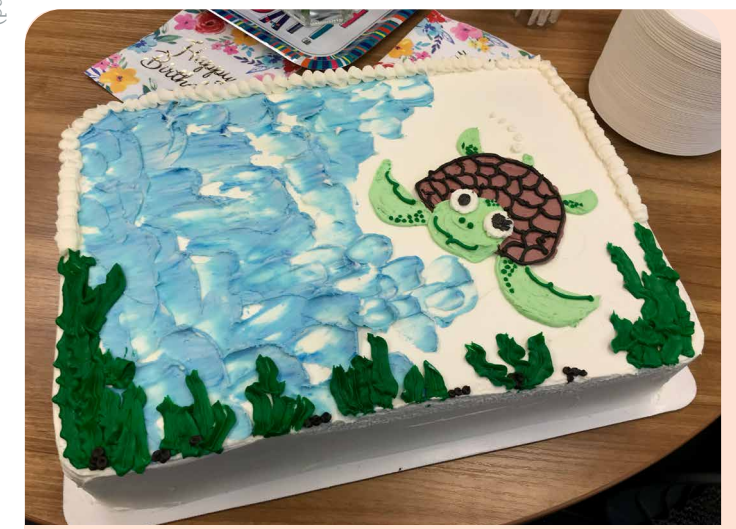
## Remembering Birkley

get wide,” Hunter said. “It might be a great idea, or maybe not, and it didn’t matter. He just lit up, and it was fantastic to watch.”

On March 11, the Odum community gathered in the courtyard for a moment of silence—punctuated by tears and laughter—to remember Birkley. On March 13, when he would have turned 21, Waffle Wednesday featured a birthday cake for Birkley, and students wrote birthday cards to him.

At Ecology’s May 9 convocation ceremony, with his family in attendance, Birkley’s A.B. in ecology and Certificate in Sustainability were awarded posthumously.

Birkley continues to be greatly missed. —Allyson Mann



March 13 would have been Birkley Heynen’s 21st birthday, and the Odum community remembered him with a cake—featuring a sea turtle—at Waffle Wednesday. Cards were made available for students to write him birthday messages that were placed in “Birkley’s birthday box,” later delivered to his family. (Photos: Allyson Mann)





## Odum School creates Student Ambassador program

BY ALLYSON MANN

Odum Student Ambassadors for 2024–25 are (seated, left to right) Paige Robinson, Sam Dilley, Catherine Hanks, Kariana Colon, (standing, left to right) Camy Teichman, Tiffanie Torrey, Luke Grider, Ryan Donovan, Luke Krohn, Riley Forrestall and Dhruv Singh. Not pictured: Anderson Smith (Photo: Alli Injaian)

In fall 2022, the Odum School of Ecology welcomed its inaugural Student Ambassadors, a group of undergraduate ecology students serving as leaders in the Odum community.

The group included Caroline Anscombe, BS '23; Sam Dilley, AB '25; Ethan Hackmeyer, AB '23; Skye Remko, BS '23; Paige Robinson, AB '25; Isaac Wood, BS '24; and Margaret Xiao, AB '24.

Student Ambassadors help host Odum events—like Waffle Wednesday and graduation receptions—that build a sense of community. They assist with campus visits, meeting with families and providing shadowing opportunities for prospective students. They have also developed and run sustainability initiatives for Odum, such as Reduce, Reuse, Regalia (*see page 9 for more*). Alli Injaian serves as faculty mentor for the program.

“Our Student Ambassadors serve as a liaison between the administrative and undergraduate sides of the Odum School and help with our outreach mission by increasing our presence on social media and across UGA,” said Injaian, lecturer and academic coordinator. “When we meet with prospective students and

their families, they really want to hear from the ambassadors about their experiences in Odum and at UGA. Getting the first-person perspective from our ambassadors is really powerful.”

The Student Ambassadors are chosen by a committee of faculty and staff, based on their academic achievements, leadership potential and commitment to serving the Odum community. They attend monthly workshops to brainstorm ideas for community involvement, and explore topics like best practices for communications.

In the program’s second year, Dilley, Robinson, Wood and Xiao returned and were joined by Cailyn Bowser, BS '24; Ryan Donovan, AB '26; Riley Forrestall, BS '25; and Luke Krohn, AB '26.

Student ambassadors for 2024–25 include Dilley, Donovan, Forrestall, Krohn and Robinson, who will be joined by Kariana Colon, BS '25; Luke Grider, AB '25; Catherine Hanks, BS '25; Dhruv Singh, BS '26; Anderson Smith, BS '26; Camy Teichman, BS '26; and Tiffanie Torrey, BS '25.

“My interest in ecology began as a kid catching tadpoles and lightning bugs in my backyard,” said Donovan. “I am excited to serve as an ambassador so I can help people who also love ecology find their community at Odum and UGA at large!”



The founding cohort of Student Ambassadors included Caroline Anscombe (left) and Ethan Hackmeyer, who served as chefs for the Nov. 16, 2022, Waffle Wednesday. (Photo: Alli Injaian)



## Ecology undergrads have a large impact in sustainability

BY ALLYSON MANN

Student ambassador Paige Robinson (right) hands a gown to Callie Wallace during the Reduce, Reuse, Regalia program’s first pickup event in March. During its first year, the program “rented” 26 gowns for spring 2024 convocation. During the 2024–25 academic year, they plan to offer 55 gowns for both fall and spring convocations. Wallace graduated with an A.B. in May. (Photo: Allyson Mann)

Odum School undergrads are just 1% of UGA’s student body, but they have a large impact in sustainability projects. Ecology students account for 30% of interns at UGA’s Office of Sustainability, and they were well represented when sustainability grants for 2024 were awarded. Four of the 11 proposals, or 36%, that received a green light by UGA’s Office of Sustainability were submitted by Odum students:

### Reduce, Reuse, Regalia

Submitted by former ecology student Cailyn Bowser (BS '24) in collaboration with Margaret Xiao (BA '24) and Isaac Wood (BS '24), and under the direction of faculty member Alli Injaian. The program “rents” gowns to graduates, free of charge, to save students money while reducing the number of new garments purchased and discarded.

### How do Trash Traps affect organic matter dynamics in urban streams?

Submitted by the late Birkley Heynen (AB '24), an ecology major, under the direction of faculty member Amanda Ruginski, to measure the carbon ecosystem dynamics of trash traps and assess their ecological, economic and social benefits. *For more on Birkley Heynen, see page 7.*

### Zero-Waste Worship

Submitted by Camy Teichman, an ecology major, under the direction of Tyra Byers, adjunct faculty and director of the Interdisciplinary Sustainability Certificate. Through the addition of compost infrastructure, this project will create zero waste Shabbat dinners at UGA Hillel, serving as a tangible model for the intersection of faith and sustainability.

### CHaRM x UGA

Submitted by Emme McCumiskey and Andre Myette, an ecology/environmental science double major and a political science major, respectively, in collaboration with Alli Blackburn and Anna Davidson. This project will create a convenient on-campus drop off program for hard-to-recycle materials.

Drawn from the Student Green Fee, grants up to \$5,000 are available to current UGA students who wish to initiate projects that advance sustainability through education, research, service and campus operations.



(Photo: Contributed)

Ecology student Birkley Heynen used trash traps in Trail Creek to see if they affected the stream’s natural decomposition rates and the flow of carbon in the ecosystem. He was inspired to pursue this project after spending fall 2023 abroad in Costa Rica, where he worked on a research project looking at the decomposition and colonization rates in tropical streams.





# Hanns brings public education to freshwater conservation, GIS mapping

BY CHERYTH FRANCE

Ecology graduate student Carleisha Hanns samples benthic macroinvertebrates in the Etowah River using a modified T-sampler. Hanns graduated in August with a master's degree. (Photo: Mackenzi Hallmark)

It's fitting that Carleisha Hanns grew up to be a cartographer—her early life spanned continents. She was born in Belgium and raised in Tennessee by military parents who lived and worked all around the world before her birth.

The Odum School of Ecology graduate student and 2022 James E. Butler Fellow now applies leading mapping technology to ecological conservation. Among other projects, she's determining the suitability of stream restoration sites through GIS—or geographic information systems, digital tools used to visualize and analyze geographic data.

"I'm really passionate about using science to create management strategies for practitioners," said Hanns, a River Basin Center student affiliate working in the Wenger-Freeman lab.

## Science education through the years

Hanns credits her initial interest in science to two things—her father's investment in nature and her science teachers' passion.

"I was always trying to bring some animal home, and my parents would just say, 'You cannot take this box turtle. That's illegal.'"

Her dad taught her about bugs and plants, and her whole

family—including her two older brothers—spent a lot of time outdoors.

Her early education was hugely influential, too.

"In high school and middle school, I had really brilliant science teachers," Hanns said. "They were all women and just very inspiring and knowledgeable. That really left a mark on me. I really liked learning about the world that I live in and trying to understand how it works."

She's continued their legacy, offering representation to the next generation.

While in Colorado, she spoke at the Denver Natural Science Museum's Girls & Science program, which introduces girls of all different ages to a range of science careers.

She made her way there after earning a bachelor's degree in ecology and evolutionary biology from the University of Tennessee, where she discovered her interest in freshwater ecology.

After a stint at Disney World educating people about conservation practices, Hanns pivoted to a role at Conservation Fish Hatcheries Inc. There, she propagated rare and endangered fish throughout the Southeast.

She began teaching herself GIS, expanding on skills built during her undergraduate degree. That was when she saw an early career opportunity with The Nature Conservancy's

Denver chapter. She moved to Colorado and undertook several mapping projects for conservation efforts, which gave her an appreciation for the breadth of the work.

"I got to see all the moving parts that make conservation work," she said.

## In the field

It was love for her job with The Nature Conservancy that made her want to enroll in graduate school. To continue doing the kind of hands-on work she loved, she knew she needed to pursue another degree. She turned to the River Basin Center at UGA, whose mission closely aligns with her passion for applied freshwater science.

"I saw the ICAS program—the integrative conservation and sustainability program—and I thought, 'That's exactly what I want to do.' I want to work on conservation projects and planning, and I want it to be in freshwater," Hanns said.

The Nature Conservancy kept her on part-time, and she continued her mapping work with them alongside her graduate studies. Her research centers on the Conasauga River Basin and how shoals disappearing, some benthic fish-like darters may experience disruption to their life cycle or have a harder time moving around.

"My interest is to better understand macroinvertebrate populations in the Conasauga River because there have been anecdotal accounts of fish declines," she said. "I'm interested in understanding if macroinvertebrate populations are also showing this overall trend of decline, potentially causing food limitations in fish."

Hanns finished her master's thesis, "Comparative analysis of macroinvertebrate communities in the Conasauga River and neighboring waterways," and graduated in August 2024.

## Outside of academia

Outside of school and research, Hanns is a runner and hiker. She also creates black-and-white animal portraits in her spare time, though there's not much of it.

Now that her degree is finished, she plans to seek a position in applied research. She loves The Nature Conservancy, but would be amenable to a range of roles.

"I'm open to any NGO or government positions where you're using science-backed management strategies and developing conservation strategies," she said. "I like to be in that type of role: project management of a conservation plan. That's kind of like my dream role."

She's especially passionate about freshwater in part because she wants to ensure equity for women like her.

"Being a woman of color, we're disproportionately affected by water management not being done well," she explained.

And she'd love to fold science communication into her work. "Communication is important in all science, but especially in conservation and sustainability, because those have direct impacts on people," she explained.

To Hanns, it's not just about doing right by communities—it's also about effective conservation.



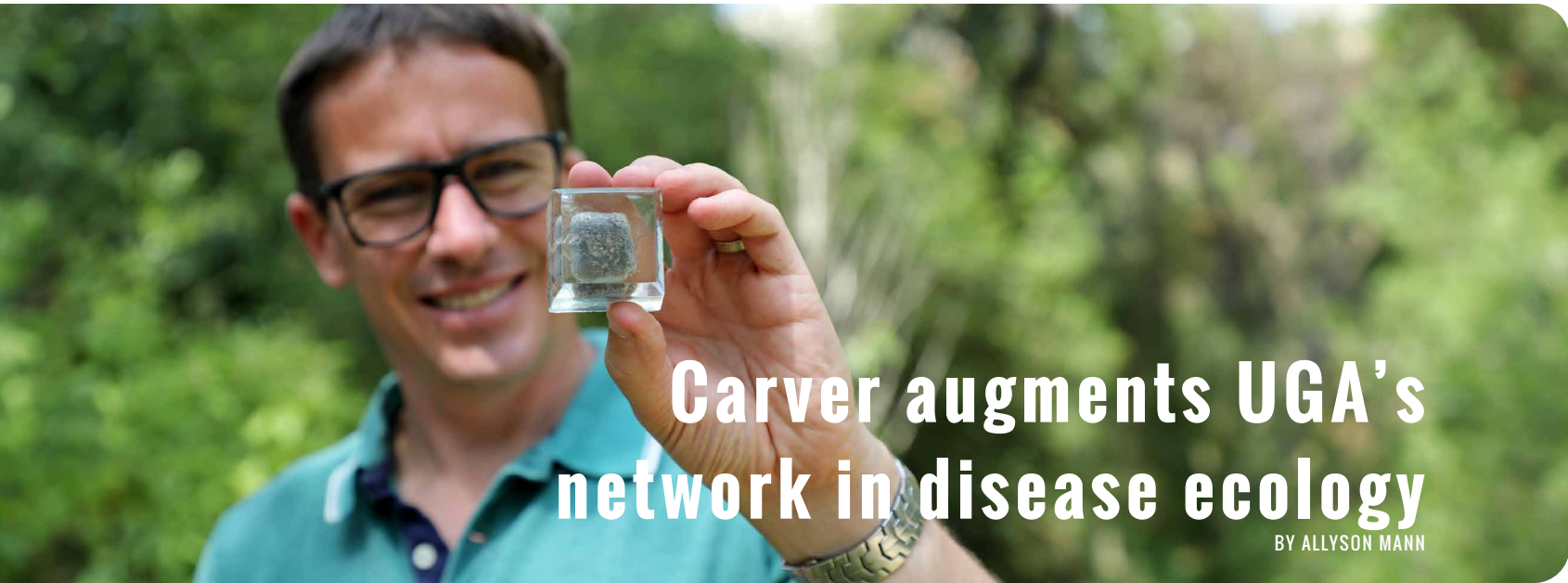
Stripping sicklefin redhorse for milt and eggs in North Carolina. (Photo: CFI)

"We say in conservation that we want people to do their part," she said. "But it's hard for people to understand the effects of their actions if they really don't understand the deep connections that they have with nature."

And as Hanns points out, advancing public education and input doesn't have to be hard.

"Sometimes it's just a simple conversation or a communication pamphlet. We have to meet people where they're at."





# Carver augments UGA's network in disease ecology

BY ALLYSON MANN

Ecology professor Scott Carver holds a wombat poo that he preserved in acrylic. Wombat poo is square, and no one knew why until Carver and a team of scientists investigated. Their efforts won a 2019 Ig Nobel Prize, which honors achievements that “first make people laugh and then make them think.” (Photo: Allyson Mann)

When he was in elementary school, Scott Carver wrote a letter to the zoo in Wellington, New Zealand, near where he grew up. He had a question: “Can I have one of your lemurs for a week?”

The zoo replied with a very polite letter, but unfortunately, the answer was no.

Despite the lack of a lemur, Carver was exposed to plenty of animals at home—cats, dogs, chickens, goats and ducks—and pursued a biology degree at university, mostly because he wanted to be a zookeeper. He’s yet to buy a zoo, but his education and subsequent focus on disease ecology have the potential to positively impact whole populations of creatures, not just those in captivity.

Carver has studied chytrid fungus in amphibians, sarcoptic mange in wombats, mosquito-borne diseases in marsupials, hantaviruses in small mammals, and pathogen transmission in cats—both wild and domestic, large and small.

After joining the Odum School of Ecology in January, he’s working to apply his knowledge and experience in new areas while forging interdisciplinary collaborations and leveraging UGA’s significant resources in disease ecology.

“As a disease ecologist, UGA is one of the best places in the world you could be,” said Carver, ecology professor and associate director of UGA’s Center for the Ecology of Infectious Diseases. “There’s probably greater critical mass here than anywhere in the world.”

## Prize-winning poo

It’s not easy to catch a wombat. The cute marsupials, related to koalas and kangaroos, can run nearly 25 mph. There’s video proof on YouTube; you can watch Carver sprint toward a wombat with what looks like a large butterfly net, successfully netting the animal but then hitting the ground pretty hard.

His research with wombats began at the University of Tasmania, where he took a faculty position after earning master’s and doctoral degrees. For his M.Sc., he studied disease effects on amphibian physiology, and for his Ph.D., he studied mosquito-borne disease ecology. He also completed two postdocs—one on small mammal ecology and Sin nombre virus, and another on various pathogens in domestic cats, bobcats and mountain lions.

In his new home of Tasmania, wombats in Narawntapu National Park were being affected by an outbreak of sarcoptic mange, a disease that is fatal to them. Known as scabies when it affects humans, sarcoptic mange is caused by a tiny parasitic mite that burrows into the skin. It results in painful itching and hair loss as it triggers an immune response. In their weakened condition, wombats can succumb to bacterial infections from the environment.

“Nobody was working on it,” Carver said. “In fact, nobody had almost ever worked on wombats in Tasmania. It was astonishing.”

He was looking for a local project where he could apply his expertise and his students could get experience collecting field data. The national park was one of the best places to see wombats, and sarcoptic mange causes very visible signs of suffering. So when Carver and his students got to work, there was lots of public interest and media coverage.

That coverage intensified when a side project seemed to answer the age-old question about square pegs and round holes. Wombats produce cube-shaped poos that look like small charcoal briquets and aggregate them around objects like rocks and logs. How wombats create square-shaped poos was a mystery, but theories were abundant. Does their sphincter mold it into a square as it comes out? Were they pooping and then turning around and shaping them?

The answer was no. Working with a team including scientists from Georgia Tech, Carver discovered that the cubes are formed in the distal colon, the last part of the intestine. In most animals, a cross-section of the intestine would reveal uniform thickness in intestinal muscles. In wombats, it alternates between thicker and thinner—which is what molds the corners. As moisture is drawn out, it firms and fragments at regular intervals.

For this research, Carver and his colleagues won the 2019 Ig Nobel Prize in Physics, awarded for research achievements that “first make people laugh and then make them think.” The team accepted the award at a ceremony held at Harvard University in Cambridge, Massachusetts. Carver wore a wombat costume, and two of his colleagues from Georgia Tech wore cubes.

Publicity after the Ig Nobel lasted about 18 months, with the team doing interviews for newspapers, radio, television and podcasts. There was also a documentary: *Secrets in the Scat*. And they published two peer-reviewed papers on their findings, with a third on the way from a student of Carver’s who explored the functional role of the wombats’ aggregated poo cubes.

Some scientists might not appreciate their hard work being recognized in such a manner, but not Carver.

“I’ve embraced it. It’s such a fun story,” he said. “On a serious side, we discovered a whole new way of actually making cubes, which is pretty weird, and it might have some translations. But really, it’s fun, and I think you should have fun with it.”



(Photo: Contributed)

Wombats aggregate their poos around objects like rocks and logs, a practice that may play a role in communication. One of Carver’s students found that scats from different wombats have individually distinct chemical signatures. “We think they might be able to identify individuals by the scent. If you bring in scats from an individual who doesn’t live in that area, they start investigating these aggregations because they can detect a foreign signal,” Carver said.





The WomBot, designed in collaboration with a robotics engineer, allows researchers to gather data inside wombat burrows. Driven using a Gameboy-type controller, it's equipped with sensors and a thermal camera. (Photo: Allyson Mann)

## The WomBot

The mystery of the cube-shaped poo may have been solved, but the problem of mange in wombats persists. One tool Carver helped develop is the WomBot, a mini tank designed to go into wombat burrows and gather environmental data. Designed with a robotics engineer from La Trobe University, the WomBot is equipped with a thermal camera and sensors that record temperature and humidity, giving scientists a glimpse into the nocturnal animals' habitat.

"Wombats are really solitary animals, and they don't have much direct contact," he said. "They live down in these burrows, and they shift homes every few days. We think that when they get mange, they leave mites in the burrows, and then the next wombat that comes in gets exposed to them that way."

Wildlife rehabilitators and carers had been successful, at least short term, using a treatment regime on wombats, with Carver and his team collecting scientific data on these types of disease control efforts. That regime proved to be

unsustainable long term, but a new drug called fluralaner (commercially known as Bravecto in the U.S.) is now in field trials, with Carver's team collecting data and developing usage recommendations for Australia's equivalent of the Food and Drug Administration.

And wombats aren't the only creatures having problems with mange. Carver is also building up work with vicuña in South America. A member of the Camelidae family (which also includes camels, alpaca, llama and guanaco), vicuñas are valued for their wool that can be sheared only every two years.

"When they get mange, you can't shear them, which influences economies and cultural practices of Andean communities," Carver said. "That further influences land-use practices, with communities turning to other income options like mining."

Mange has also shown up in black bears in the eastern U.S., including populations in Arkansas. Carver suspects that host species like coyotes, who are reestablishing their range across the eastern U.S., or red foxes may be facilitating the spread. As he establishes his new lab at the Odum School, he plans to explore these kinds of multi-host species dynamics that may



be a factor. And he'll be able to collaborate with scientists like Michael Yabsley at UGA's Southeastern Cooperative Wildlife Disease Study.

"Michael Yabsley at SCWDS has done some really great work on sarcoptic mange. He and [former Ph.D. student] Kevin Niedringhaus have done really great work in a range of species, including black bears," Carver said. "UGA has a great history of doing really fantastic work on sarcoptic mange and wildlife."

Mange has been documented in more than 150 species around the world, according to Carver.

"That makes it among the most widespread and also burdensome of mammalian parasitic diseases," he said. "It's also still in the top 50 human diseases in terms of prevalence, particularly in tropical regions. It's really diminished in temperate regions associated with advances in western health care."

## Next gen

As fall semester approaches, Carver is applying for a grant to fund vector-borne disease modeling using artificial intelligence, to help better predict disease distribution and how it might be affected by factors including climate change.

In addition to continuing his work in vector-borne diseases in the U.S. and elsewhere, Carver will be teaching a new field methodology course this fall. Focused on the scientific method, the class will take students all the way through the process of observation, forming hypotheses, undertaking fieldwork, and interpreting data. They'll develop skills that ecologists use frequently in the field, gaining experience with techniques like observational surveys, pitfall trapping, camera trapping and small mammal trapping.

He'll be training a new generation of ecologists and infectious disease researchers, but the notoriety of winning the Ig Nobel Prize may be a large part of his legacy. Carver is OK with that.

"I'm totally committed to doing great research that translates and has applied meaning in the world," he said. "But I'm also a complete supporter of research that's just fun and sparks people's imagination."

Carver doesn't have a favorite animal, he said. "Except maybe wombats, for obvious reasons, because the last 10 years they've played such a major role in my life." (Photo: Contributed)





T'Kai Adekunle, a student from Savannah State University, presents her research to Dean Mark Hunter (left) during the Population Biology of Infectious Diseases REU (Research Experiences for Undergraduates) program, held last summer at the Odum School of Ecology. (Photo: Allyson Mann)

## Students explore infectious disease research through Ecology REU program

BY ASHLEY ORLET

When T'Kai Adekunle first took an ecology class at Savannah State University, she knew she wanted to explore the field more.

“I wanted to use what I had just learned for something in the summer, to see if that’s something I wanted to go into,” said Adekunle, a third-year SSU student majoring in biology. She had an interest in both human health and ecology and found that the Population Biology of Infectious Diseases REU program, led by two Odum School of Ecology faculty, was the perfect way to expand her understanding of both fields.

“It may not be about people, but there are still concepts I took away from the program I can use,” she said. “A lot of these concepts can be tied back to human diseases and how they spread through populations.”

## The ABCs of REUs

REUs, or Research Experiences for Undergraduates, are programs funded by the National Science Foundation that provide students an opportunity to perform research in different

scientific fields. The Odum-based program aims to expose students to mathematical and computational techniques that can be incorporated into infectious disease research.

The Population Biology of Infectious Diseases REU program has offered students research experience in disease ecology for 11 years. Originally developed and led by John Drake, director for the Center of the Ecology of Infectious Diseases, the nine-week program prepares students for future careers in research and includes activities like coding workshops, journal clubs, lectures and faculty-hosted dinners. Faculty mentors propose research projects for the REU program, and when students arrive in May, they collaborate with their mentors to shape the projects’ questions and experimental designs. Students then work on their research throughout the summer, presenting their findings at a symposium in late July.

For the students enrolled in the program, a typical week consists of 32 hours of research and another eight hours of program activities. Student-led research projects in 2023 addressed topics ranging from detecting patterns of influenza-A virus variants circulating in wild birds to experiments testing how fish predators affect the transmission of fungal parasites in

water fleas (tiny aquatic crustaceans). Computational projects analyzed large datasets for evidence of superspreading in parasitic worms and modeled how environmental variation affects the transmission of mosquito-transmitted diseases. Faculty mentors came from five different schools and colleges on campus, including veterinary medicine, public health, arts and sciences, forestry and natural resources, and ecology.

Maya Risin, a third-year student studying biology and environmental sciences at Emory University, said the program offers a level of independence and autonomy not found with other research experiences.

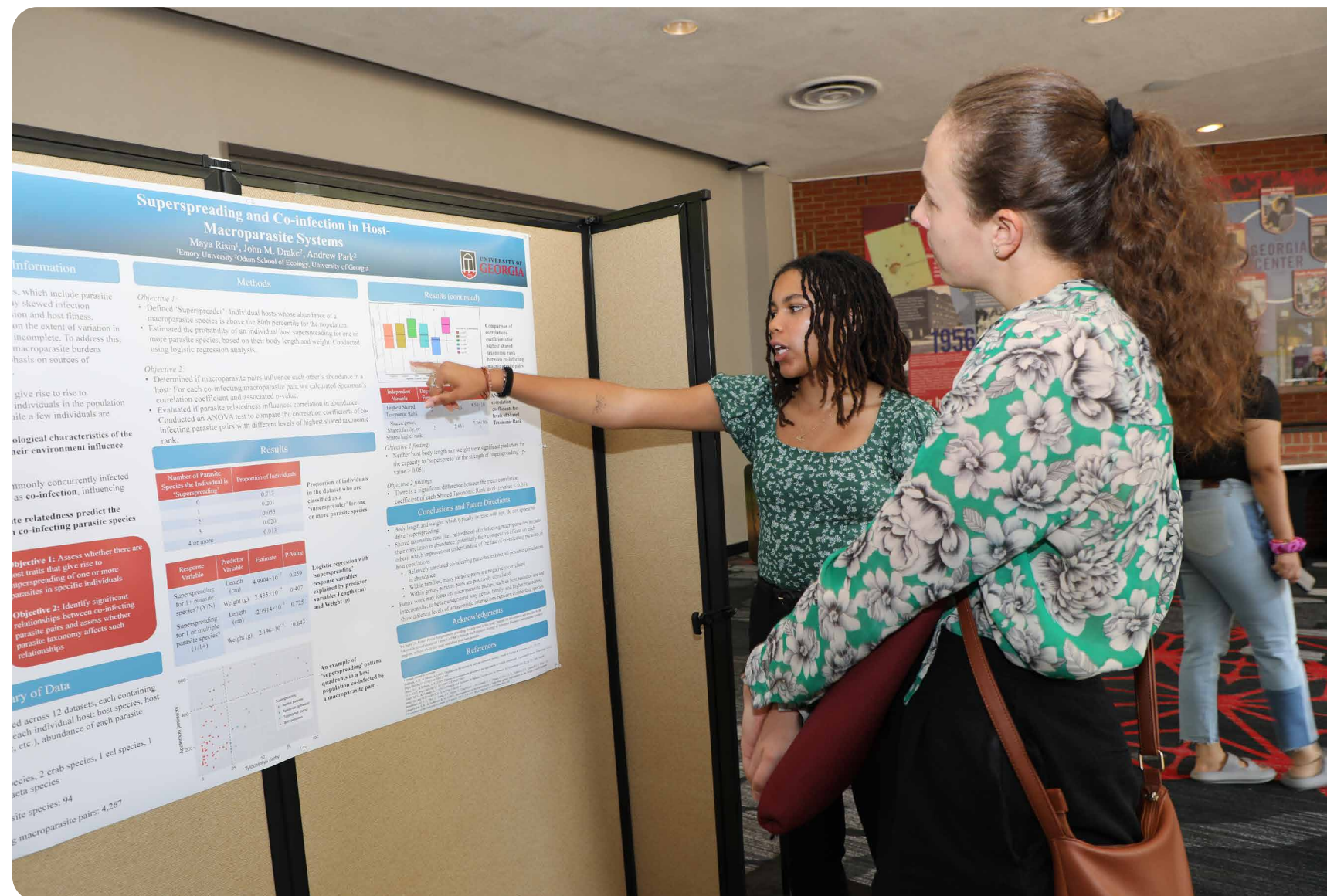
“This is the most independent research project I’ve ever worked on,” she said. “I meet with my mentor once a week, which was much less than I expected, but it’s been great to problem solve on my own and test myself as a researcher.”

## Expanding universes

The program’s 2023 cohort included nine students enrolled at colleges in Georgia, Florida, New York, Pennsylvania, Virginia and Utah, many of which cannot provide similar research opportunities.

“This program offers something that our schools don’t offer,” Risin said. “It’s definitely a unique experience, and I think a lot of the other REU students agree that this is an opportunity we wouldn’t have at our home institutions, which is why it’s so important to us.”

Sonia Altizer, current program director and Martha Odum Distinguished Professor of Ecology, spoke to the importance of providing students with research opportunities.



Maya Risin, a student from Emory University, discusses her research project during a poster presentation held at the Georgia Center for Continuing Education. (Photo: Allyson Mann)



“For a lot of these students, if they don’t have these opportunities, it can be really difficult for them to break into advanced graduate programs and to make the connections they might need to do research,” she said. “It’s really important to bring students here to campus in a thematically focused program to be able to get that hands-on research experience, and then to also provide professional development and mentoring which allows them to envision potential careers in scientific research.”

The program aims to challenge and hone students’ abilities as researchers. When part of Adekunle’s experiment failed to produce results for several weeks, it challenged her perspective of the scientific process.

“I like to think I have always been a successful person and have always been straightforward in what I’ve wanted in my academic career,” she said. “So to have something not work for the first six weeks of the program, it’s kind of hard. But it definitely taught me to appreciate the whole process and not just getting results.”

Ecology assistant professor Alex Strauss, co-director of the program and a faculty mentor, also spoke to the challenges of completing a research project in such a short period of time. “It’s really hard to squeeze a meaningful research project into nine weeks,” he said. “We’re learning new skills. We’re often troubleshooting new methods. But I think we do it successfully.”

The program has illuminated the collaborative nature of science for students. “Hearing my mentor say, ‘Well, I’m not an expert in this, we should call someone who is,’ has made me appreciate this collaborative nature and why it’s so valuable,” Risin said. “[Research] is about sharing our knowledge, and if you come from a perspective where you think you know everything, you won’t go far.”

## Academics are people too

Humanizing science has been instrumental in facilitating relationships between students and their mentors, one of the most important aspects of the program. “I think it’s really important to show the students that we’re just people,” Strauss said. “We’re very approachable and sort of humanizing all of science, which I think is important for students.”

From the student perspective, the program’s approach to mentorship has been useful. “I don’t really see [academia] as a hierarchy anymore. The professors I met at Odum are so humble,” Risin said. “They’ll admit when they’re wrong and put any ego aside because at the end of the day, the project is more important. Seeing that has made me appreciate them a lot more.”

Adekunle’s faculty mentors were instrumental in shaping her experience. “My favorite part of the program is really the people,” she said. “I was in a rough place with science and my degree and knowing what I wanted to pursue. But being in this environment with so many people who are willing to help... It doesn’t even matter what I would ask about. If they didn’t know the answer, they found somebody that did. I really love the people here.”

Students in the program could also turn to Katie Schroeder, a Ph.D. student in ecology who oversaw much of the REU programming. Schroeder met one on one with participants throughout the program, discussing everything from solving research issues to applying to graduate school to finding fun weekend activities in Athens.

“Because we met throughout the entirety of the program, I really got to see the students grow in their confidence and project expertise,” she said. “In our first meetings, we talked about how they were starting to learn about their projects and meet their research labs, and by the end of the semester, they were all teaching me about the exciting, novel results they had found.”

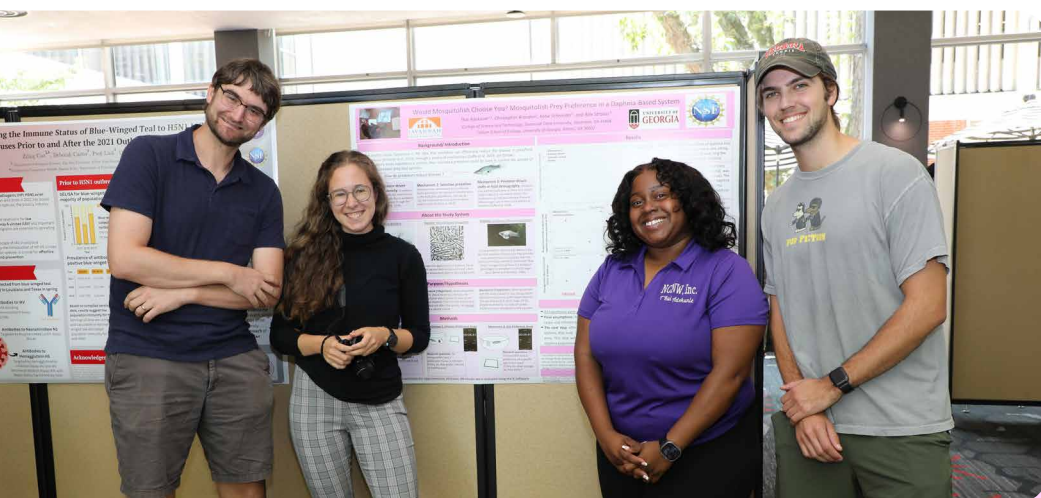
The students also form relationships with each other. From movie nights to field trips to Waffle House, they become close during the nine weeks of the program, rooming together in Rutherford Hall and exploring Athens and the UGA campus. “It’s kind of nice for the people who haven’t been to Athens, we’re just kind of figuring it out together,” Risin said.



First row (left to right): Diana Felipe, Utah State University; Sonia Altizer, REU co-director and Martha Odum Distinguished Professor of Ecology; Katie Schroeder, Ph.D. student in ecology; and T’Kai Adekunle, Savannah State University. Second row (left to right): Alex Strauss, REU co-director and assistant professor of ecology; Maya Risin, Emory University; Ayanna Johnson, Norfolk State University; Zinjing Cao, CUNY at Hunter College; and Isaac Wood, UGA student. Third row (left to right): Tenacity Murdie, UGA student; Bryna Wilson, Grove City College; Cecelia Pumpelly, UGA student; Karin Ebey, Eckerd College; and Sofia McDonough, Florida State University. Wood and Murdie participated in the program with funding provided by UGA’s Center for Undergraduate Research Opportunities. (Photo: Allyson Mann)

By the end of the program, students are equipped with skills to conduct research in infectious disease, have formed valuable relationships with their mentors and each other, and have gained a broadened perspective of ecological research. Students with experience in computational and experimental approaches to infectious disease research are of growing importance, according to Altizer.

“People know that infectious disease emergence and pandemic spread are in many ways driven by environmental change. Research in the study of the ecology of infectious diseases is more important today than ever before,” she said. “Being able to offer students hands-on experience with the tools, techniques and the expertise they might need to make contributions to the field is something I’m super proud that this program can offer.”



Adekunle (second from right) poses with (left to right) Alex Strauss, Katie Schroeder and Christopher Brandon, who helped guide her research project. Strauss is an assistant professor and co-director of the REU program. Schroeder is a Ph.D. student in ecology, and Brandon is former manager for the Strauss lab. (Photo: Allyson Mann)





# Collaboration and coronaviruses: Lunn brings interdisciplinary approach to disease ecology

BY CHERYTH FRANCE

Tamika Lunn, a disease ecologist, explores why, when and where animals become infected with pathogens—information that could help predict and prevent spillover of diseases to humans. She joined the Odum School of Ecology faculty in January. (Photo: Sarah Chewning)

**B**ats deserve more than just a few weeks in the limelight each Halloween. The flying mammals are critical pollinators and pest control agents, according to Tamika Lunn, a disease ecologist and new assistant professor at the Odum School of Ecology.

Lunn’s research focuses on bats, and a central thread explores why, when and where animals become infected with pathogens, to predict and prevent spillover of diseases to humans. Her research by nature intersects with many other disciplines. In studying zoonotic spillover (diseases that can complete their life cycles in animals, but can be transmitted to humans), she has to work with experts in human behavior, animal behavior, virology, mathematics and more. But collaboration is also simply something she loves.

“The sharing of thoughts and ideas is something really enjoyable about science,” said Lunn. “I’m excited about the Odum School of Ecology, because it has a great reputation for disease ecology and ecology more broadly.”

## Science beyond school

Lunn grew up on the Australian island-state of Tasmania, and though she spent her summers camping with family and “loved the outdoors,” she never considered science as a career.

“I grew up in a working-class town so I was exposed to more traditional jobs, like trades, or teaching and nursing,” explained

Lunn. “I didn’t know that science could even be a job. It was a topic in school.”

But she did want to work with animals. “My great ambition was to be a veterinary nurse’s assistant,” she said.

But once she realized science was something she could pursue, she was hooked. She gained her Bachelor of Science with Honours, the Aussie equivalent of a combined bachelor and master’s, at the University of Tasmania.

Her honors thesis focused on platypus, and she’d originally intended to examine research questions related to a fungal disease that causes skin lesions and mortality. Unluckily for Lunn—but perhaps good for the platypus population—none of the animals she caught were infected.

“We decided to look at the effect of timber harvesting on the stream ecosystem and habitat suitability for platypus, and what impact, if any, this had on their stream use and population health,” Lunn said. “We didn’t detect any effect on platypus. This led us to believe that platypuses are fairly resilient.”

Though she had to pivot lines of research, the experience was formative.

“That was my first introduction to really leading my own research project and exploring questions that I was interested in,” she said. She used those skills for her Ph.D. at Griffith University and postdoc at the University of Arkansas.

## Bat research in the pandemic age

For both, she studied bats, first examining Hendra virus in large flying foxes and then switching to small insectivorous bats in Africa, with a focus on coronaviruses and an ebolavirus (Bombali virus). She said—only partly joking—that she made the swap to bats because they’re much easier to catch than the notoriously elusive platypus, but both her Ph.D. and postdoc offered the opportunity to study disease ecology at greater length.

“For my postdoc, I was able to work with two extra virus groups that are really interesting in the infectious disease world that I hadn’t previously worked with,” she said.

She’d love to continue the work begun in Kenya on the interface between humans and bats, and what’s changing those interactions. Understanding zoonotic spillover is complex work. “There are multiple requirements for spillover. You need to understand the distribution and density of the species, when and where they are infected, how long the virus can survive in the environment after it’s shed, if it’s coming into contact with humans,” Lunn said. “There’s also whether that virus can invade human cells and become established in the human

body. Everything has to align perfectly in space and time for the pathogen to spill over. From an ecological perspective, spillover is incredibly unlikely.”

All those factors make her field hard to understand for the average layperson. But the COVID-19 pandemic contextualized her work for family and friends, who were unflaggingly supportive but didn’t necessarily understand why it’s important to study coronaviruses in insectivorous bats. Suddenly, the real-world value of Lunn’s work seemed self-evident.

And like many disease ecologists, she was able to offer her two cents on headlines and trends, rendering a scary time a little more understandable for her circle.

“Friends would often come to me with questions about COVID or coronaviruses,” she shared. “Maybe scientists predicted that X was going to happen, but it didn’t. So were they wrong? I was able to explain that we acted on that prediction, so that changed the future. If we hadn’t acted on it, their prediction might have come true.”



Tamika Lunn, a new assistant professor of ecology, holds a flying fox during fieldwork conducted in Australia. After collecting samples, the bats are released—the “best part of fieldwork,” according to Lunn. “The technique for release depends on the species. Bats with long, narrow wings often need height to catch air and take off, so we’ll throw them upward and watch them fly away. Bats with short, wide wings can take off from your hand, so we’ll hold our arm outstretched and wait for them to fly away,” she said. “Some bats take off immediately, but some will turn and watch you for a little while before leaving. That’s my favorite.” Editor’s note: All bats were handled with proper permits, training and vaccinations. (Photo: Devin Jones)





## Supporting species

Now, Lunn can't wait to tackle new research with colleagues across Odum.

"There are so many great researchers that work from the Odum School. It's really rare to get that number of people working on ecology in one space. Typically at a university, you might have a biology department and there might be a couple of ecologists, maybe one disease ecologist."

"Dr. Lunn brings a fascinating and important new dimension to our research and teaching in the Odum School," said Mark Hunter, dean. "Her work on bats is critical to understanding pathogen spillover while providing important information for bat conservation efforts."

"At the River Basin Center, for example, they're working on river ecosystems that bats are naturally connected to," said Lunn. "Riparian areas are especially important for bats because they provide drinking water, high-quality foraging habitat, and high-quality roosting habitat. So it'd be really interesting to connect with the people working in that space as well."

She'd also love to work with colleagues at the Savannah River Ecology Lab, a perfect spot to conduct her research.

She'd love to collaborate beyond Odum, too.

And in all her work, she wants to make sure conservation stays front and center. Sometimes, highlighting pathogens that a particular animal hosts can create tension between humans and wildlife. That's something Lunn wants to mitigate through clear messaging about the value of her study systems and species.

For anyone who enjoys a margarita on the weekend, for instance, she's quick to point out that the agave in the drink's signature tequila is pollinated by migratory bats.

"In my research, I try to give back positively to a species," she said. "Even doing things like advancing basic ecological knowledge is really important."

*Editor's note: All bats were handled with proper permits, training and vaccinations.*

Bats are captured by setting mist nets at or above roosting height. For Kenyan insectivorous bats, nets are set at buildings and bridges at heights ranging from 3 to 26 feet. For Australian flying foxes, nets are set at trees using modified antenna poles up to 72 feet tall (a pulley system facilitates lowering the net). Bats are removed from nets immediately to minimize stress or injury. (Photo: Tamika Lunn)



During fieldwork, Lunn collects a variety of samples from bats like this *Cardioderma cor*, or heart-nosed bat: urine, feces and saliva for viral diagnostics; blood for serology, blood pathogens and white blood cell counts; wing tissue for DNA analysis; hair for toxicology and endocrinology; and ectoparasites for parasite load and identification. She also records sex, age and reproductive status and measures weight and forearm length. (Photo: Tamika Lunn)



After samples have been collected, a Wahlberg's epauletted fruit bat gets mango to replenish body fluids and electrolytes before being released. (Photo: Tamika Lunn)



Bats are classified as flying mammals under the order Chiroptera, or "hand wing." The skeletal structure of a bat's wing is similar to that of a human arm, with shoulder, elbow and wrist joints that lead to fingers—all covered by a thin membrane. (Photo: Reilly Jackson)





## Green Team connects UGA and middle school students with passion for ecology

BY WES MAYER

MaKenzie Leatherwood (left), a student in the Urban Ecology course led by Alli Injaian (second from left), teaches students on BHL's Green Team about cacao fruit and its seeds. (Photo: Wes Mayer)

UGA students in Alli Injaian's Urban Ecology service-learning course spent spring semester 2023 sharing their knowledge with aspiring ecologists at Burney-Harris-Lyons Middle School in Athens.

These middle school students all belonged to the Green Team, one of the after-school programs at Burney-Harris-Lyons (BHL). Created in 2022, the Green Team students have developed several green spaces around the school, including a raised bed pollinator garden and a spiral herb garden. They have also planted French- and Hispanic-inspired plants in the courtyards outside their language classrooms.

"We do fun stuff with planting and having fun with friends," said Jemari, a 7th-grader. "Sometimes we play basketball and answer trivia about gardening and planting and fossils."

In spring 2022, Injaian, a member of UGA's 2022-23 Service-Learning Fellows cohort, formed a relationship with Sam George, the visual arts teacher at BHL who organizes the Green Team program. The two decided to combine their classes, and each week over the semester, Injaian and her students visited BHL to study trees with the Green Team through multiple disciplines, from science and nutrition to social studies and art.

"We are always excited to see what's happening the next week with their expertise, resources and influx of exciting ideas,"

George said. "[My students] are full of questions, so having a group of ecology majors around is a wonderful resource."

When Injaian's students were not learning alongside the Green Team, they would take on the role of the educators and pass along what they learned from Injaian through weekly, group-taught lessons. The ecology students developed their science skills, built their confidence and leadership, and learned how to manage a team of middle-schoolers.

"For many of my students, this was not just their first time teaching, but also their first time being the person in charge," Injaian said. "They developed leadership skills alongside their

scientific knowledge. I'm hopeful that my students will take these leadership skills with them into the workforce, graduate school or their next semester here at UGA."

An example of one of these weekly lessons was one taught by Sophia Rubin, a third-year ecology major

from Atlanta; Coles Ehlers, a fourth-year ecology and economics double major from Athens; and MaKenzie Leatherwood, a fifth-year ecology major from Cochran, Georgia. The lesson covered the cultural significance of trees throughout the world and focused on four trees that provide familiar foods: cacao, coconut, cinnamon and pomegranate. The lesson also included research from folk tales and mythological stories about these four trees, and Injaian's students brought in food samples and broke the class into groups to act out the trees' stories as skits.

"[This course] was one of the best parts of my senior year," Leatherwood said. "I learned so much from Dr. Injaian and Mrs. George, and as I move into the next phase of my life, I plan to continue the lessons that they instilled in me. I learned that everyone has their own strengths and weaknesses, but it's how you use them that defines you. You can choose to let your weaknesses get the best of you, or you can rise above them and show everyone how strong you truly are."

Leatherwood said she saw her classmates step out of their comfort zones and take an interest in something they might not have had a chance to experience otherwise. Her classmates learned how to confidently give direction and speak loudly and clearly, and many bonded with the students at BHL to form a mentor-mentee relationship. By the end of the semester, Injaian said her students were truly leading each class at BHL.

"One of my teaching mentors once told me: 'As an instructor, you know you've done your job in training your students when they no longer need you to be in the room—they can do the task completely on their own,'" Injaian said. "By the end of the semester, that was my experience. I sat in the back of the room, ate my snack alongside the BHL and UGA students, and felt proud of the lessons and activities my students were running up front, completely on their own."

Throughout the semester, Injaian wanted to introduce the Green Team to some exciting aspects of ecology, so she invited a drone pilot to visit, speak to the students about

drone technology, and take photos and videos to map out the school's green space from above. Injaian also worked with a dendrology expert at the State Botanical Garden of Georgia at UGA to identify the tree species on BHL's campus and create customized identity labels for the Green Team to install around school grounds. The semester wrapped up with the Green Team planting their own tree saplings around the school alongside Injaian's students.

While the program's first topic focused on trees, the partnership with BHL continued in spring 2024 with an investigation of ecological footprints. Planning for 2025 is focused around a topic titled "It's just nature, don't freak out."

George said the partnership has introduced her students to new, fun-filled learning experiences, and she looks forward to seeing how Injaian's students continue to learn and grow through the partnership.

"As a nearly lifelong Athenian and UGA graduate, I love to see the university and the local community join in mutually beneficial efforts," George said. "There's a full-circle kind of beauty to such partnerships."

*Reprinted with permission of the UGA Office of Service-Learning. The ecology students interviewed in this story have all earned A.B. degrees; Coles Ehlers graduated in fall 2023, MaKenzie Leatherwood graduated in spring 2023, and Sophia Rubin graduated in spring 2024.*



Students in Injaian's Urban Ecology service-learning course pose with Sam George (right) and the Green Team at BHL. (Photo: Wes Mayer)



# Academic advisor helps students find community and strive for sustainability

BY AVERY CALDWELL

**A**s undergraduate advisor for the Odum School of Ecology, Misha Boyd finds ways to enhance the student experience, pursuing fresh initiatives.

Before becoming advisor, Boyd obtained degrees in Spanish and theater from Sweet Briar College in Virginia. She moved to California to work in the industry but later returned to Georgia.

“I never thought I’d live in Georgia once I moved away,” Boyd said. “But I had a sister who was going to school at UGA, and I grew up going to football games and tailgating.”

She joined the university working for a lab. When the Institute of Ecology became the Odum School, it was a great fit.

“I grew up on a small farm in Georgia. We had sheep, goats, peacocks, dogs, donkeys and horses, so I grew up around animals and nature. Ecology was kind of a natural fit for me,” she said.



Misha Boyd, center, interacts with students during the weekly Waffle Wednesday event held outside her office at the Odum School of Ecology. (Photo: Dorothy Kozlowski)

In her position, Boyd fulfills a wide range of duties while also starting new programs to further engage her students. Her favorite part of her job is meeting with students and ensuring that they have all the tools necessary to be successful.

“I love to interact with people,” Boyd said. “Everyone is interesting, different and unique. I see them all the way through the program, so I see a lot of growth and change.”

When she first began her position, the school had about 80 students. Now, she advises almost 200 undergraduate students.



(Photo: Dorothy Kozlowski)

Boyd has also helped to start various initiatives—for example, working with colleagues to create an undergraduate student lounge. In the student lounge, she helps host Waffle Wednesday, a day for students to make waffles and connect with one another.

“A sense of place is so important,” Boyd said. “This is their place. This lounge is their place. It’s a place for them to land, to come together, to study together.”

It was at this lounge that several of UGA’s sustainability projects began. Boyd and many students would collect cans and bottles from football tailgating events and donate the money from recycling to Habitat for Humanity. Now, the UGA Athletic Association completes this task. However, the need for the work led students to push for a program dedicated to making the campus sustainable—an effort that helped lead to the creation of the Office of Sustainability.

The school’s Odum Cabin has also played a significant role in building connections between students and faculty. The school’s founder and namesake, Eugene Odum, left his cabin in Ila to the school. For the last 15 years, Boyd has led overnight undergraduate retreats at the cabin where students have campfires, take walks in the woods and play games.

“It’s been such a valuable community builder among our undergraduates,” Boyd said. “The cabin, like our undergrad lounge, has been instrumental in building that strong sense of community and place for our students.”

Outside of work, Boyd maintains her personal dedication to sustainability as she bikes to work on most days. She enjoys biking on all terrain, from gravel to the mountains. This year, Boyd plans to begin traveling again after taking a break due to the COVID-19 pandemic. And she carries on in her efforts to create community among ecology students.

“These things are critical to what we’ve built and continue to build in this program,” she said.



## Ecology lecturer identifies solutions

BY ALLYSON MANN

Alli Injaian is a lecturer and academic coordinator at the Odum School of Ecology. (Photo: Andrew Davis Tucker)

**A**lli Injaian, lecturer and academic coordinator at the Odum School of Ecology, sometimes feels like a talent manager. Fifty percent of her job is teaching, but the other 50% involves instructional service and administrative responsibilities like determining faculty teaching assignments.

“It gets complicated,” said Injaian, “but I try to get to know faculty and what they enjoy teaching so I’m able to solve instructional problems as they arise.”

That tendency to delve into a complex situation to find a better approach is something that pervades her work.

In addition to facilitating teaching assignments and coordinating peer teaching evaluations for faculty, Injaian conducts new student orientation, meeting with incoming students and their families when they visit. She also leads the school’s student ambassador program.

In 2023, student ambassador Margaret Xiao was awarded a sustainability grant to create a program that facilitates reuse of chemistry lab coats. That program is continuing, and Injaian helped the group expand it to include graduation regalia—an idea they piloted at convocation in spring 2024. (see page 9)



(Photo: Andrew Davis Tucker)

Odum School of Ecology lecturer Alli Injaian talks with students during group work time in her class at the Science Learning Center.

“We’ll ask ecology students to donate their gowns this year, so they can be reused by future graduates at Commencement,” she said. “The ambassadors are excited about that—obviously they’re into the idea of sustainability. I think they also enjoy having a tangible project that they can carry out and see completed in their year of service.”

Injaian, a member of UGA’s 2022–23 Service–Learning Fellows cohort, teaches general ecology, behavioral ecology and urban ecology, a service–learning class developed with a teacher at Burney–Harris–Lyons Middle School in Athens. The two combined their classrooms, allowing UGA ecology students to work alongside BHL students to learn about native trees and plant 24 trees on BHL’s grounds, creating a school arboretum.

She also teaches a professional development class required for ecology majors that focuses on topics such as building community, improving professional email communication and developing résumés. Injaian has compiled a course pack that she hopes will support students after they’ve graduated.

“[We’ll tell them] ‘Don’t throw this away!’” she said.

During fall 2023, Injaian taught two large sections (120–plus) of general ecology that facilitated an IRB–approved study on teaching techniques—a way to explore how to make her classes more effective.

She also brought in peer–learning assistants, undergraduates who serve as teaching assistants through a program funded by the Division of Academic Enhancement. Six peer–learning assistants help with the general ecology classes, allowing her to employ active–learning strategies with plenty of feedback and guidance.

Her interest in pedagogy is based partly on her undergrad experience at Ursinus College. “I had almost entirely flipped classrooms,” said Injaian, who earned a master’s at the University of Michigan and a Ph.D. at the University of California, Davis. “I didn’t know what that was at the time, but looking back, I see that’s how I learned ecology.”

“I think education is important, and I think that equity is really important,” she said. “Teaching in a way that supports learning gains for the most diverse group of people is what I want to do.”



# Working at the intersection of policy and research with Brian Watts, BS '11

BY PATRICK BARRY

Brian Watts, BS '11, works with The Pew Charitable Trusts as an officer of data and research focused on advancing environmental policy. He first served on the NGO's Flood-Prepared Communities team but now is a member of their Energy Modernization team.

(Photo: Contributed)



Thirteen years after graduation, the moment Brian Watts remembers most from his time at Odum is a small show of kindness.

"I think I was going to get a C in a class or something," Watts said. "[Retired Odum professor] Jim Richardson and Misha [Boyd] sat down with me on a couch. I'm probably crying, as a freshman, and they say, 'It's fine. It's not a big deal.'"

Those words really helped to put things in perspective for Watts in his early college years.

"From people who know things in a field you want to be in, it's really good to hear people level with you... that is what our school is all about."

Watts still visits the Odum School periodically, whether to catch up with Boyd, who he called "one of the greatest humans alive," or to meet with other members of the Alumni Board.

"It's so easy to go back," Watts said.

## The policy space

Following his graduation from Odum, Watts taught English for two years in South Korea on a Fulbright scholarship, a decision encouraged by Boyd, before attending grad school at Indiana University Bloomington. After earning his master's in environmental policy and natural resource management, Watts landed at accounting firm Grant Thornton, where he analyzed immigration, trade and travel data.

The job was where he wanted to be in terms of work—analyzing numbers and data, crunching it all together into

something workable to help influence policy. But, as the issue of immigration became increasingly volatile, he began considering other options.

"I loved the work, but I don't think I necessarily wanted to be in that field."

After four years, Watts decided to make the change back to environmental science.

"Over time," Watts said, "you start to realize that a lot of environmental research doesn't go anywhere, or doesn't seem to get enacted upon. So, I wanted to move into that policy space. Somewhere you can take good information and use it to do good things."

The intersection of policy and research led him to The Pew Charitable Trusts.

Pew is an international non-profit NGO that improves public policy in communities, conservation, finance and economy, governing and health. Watts is an officer of data and research focused on advancing environmental policy, meaning he gets the best of both worlds: working with numbers and data, as well as working toward a more sustainable future.

Watts started at Pew on the Flood-Prepared Communities team, helping governments become more resistant to the growing threat of flooding. Flooding is an extremely costly and common weather-related disaster, and vulnerable communities don't always have the resources to respond in a way that mitigates future flood events.

Through funding research on nature-based solutions, and championing policy that enforces higher building standards,

Pew works to support flood-prone communities. Watts is still with Pew on their Energy Modernization team, which works to advance the nation's transition to electric vehicles, build clean power grids, and further develop offshore wind and other renewable energy solutions.

Most recently, Watts worked with the Louisiana State Legislature to help introduce and pass a resolution that evaluates their readiness to expand offshore wind supply chain resources, the first step in modernizing energy production in a state that is and has been a leader in the energy field.

After months of logistics, study, stakeholder meetings and reviews of the report, Watts and his colleague presented work at a conference in New Orleans to positive reception.

"I'm now back working for the environment, and I couldn't be happier," Watts said.

## A strong foundation

Watts credits his success to the skills he honed as a student at Odum. The rigorous coursework: biochemistry, organic chemistry, statistics, evolutionary ecology. Classes that push students not just to regurgitate information, but to play an active role in learning and implementing knowledge.

Watts found the research opportunities available to undergraduates particularly valuable, taking every opportunity he could during his time at the school. He conducted research through CURO, and traveled to Barro Colorado Island to assist



Watts speaks with Willie Phillips, chairman of the Federal Energy Regulatory Commission, at the 2024 National Association of Regulatory Utility Commissioners' Winter Policy Summit.

**"I think the biggest strength the school has is who's involved in it. Whether that be friends you make, or the faculty you interact with, or Misha."**

— Brian Watts

in behavioral ecology research through the National Science Foundation's Research Experiences for Undergraduates program.

He also learned the value of good data: when and how to use it, when to question it, and how to interpret it. Odum, for Watts, established the foundations of science and his career.

"It was tough, but I think it really paid off," Watts said.

The people, too, made all the difference during his time in school.

"I think the biggest strength the school has is who's involved in it. Whether that be friends you make, or the faculty you interact with, or Misha. She's perfect. That all elevates what you're doing."

## It's all connected

Watts serves on the Odum School's Alumni Board of Members, inaugurated in 2023, which aims to create paths for career development and mentorship, facilitate partnerships and networking opportunities, and promote and advocate for the school.

As a member of the alumni board's Student Programs Committee, Watts listens to the students' wants and needs, as well as their suggestions for improvements.

"I want to give back to the school that was instrumental in where I am today," Watts said. "But, there were things missing when I was there. It's only been less than a year, and there's a lot to do when you're working full time, but it's very much worth it."

Watts' graduating class was 11 strong, and 13 years later their careers are as diverse as the ecosystems they once studied together. They're teachers, architects, physical therapists and yes, research scientists, but all can trace their roots back to ecology.

Watts plans to continue working in environmental policy, traveling, adventuring outdoors, and helping to give today's students experiences like the ones that defined him.

Ecology itself is the study of connections, and the imperceptible ripples that move throughout networks of connections. So it's no surprise that, when Watts looks back on his career, that's what he sees.

"The more you live, go through a career or work on policy or research, the more you realize it's all connected," he said.





## Pursuing momentum with Virginia Schutte, PhD '14

BY ALLYSON MANN

Ecology alum Virginia Schutte (PhD '14) takes a selfie from the Nathaniel B. Palmer icebreaker during a deep-sea expedition to east Antarctica in spring 2023 (black eye courtesy of a face-furniture collision). (Photo: Virginia Schutte)

Virginia Schutte (PhD '14) prefers to be uncomfortable—at least intellectually. For her, it's an indicator of success. It's how she knows that she's pushing forward, challenging herself and trying new things.

"I really like momentum as a measure of career success. There's something about pushing into new spaces and trying new things," she said. "I feel like what really defines my career is experimentation with how things could be. Not just saying, 'Oh, that's the way they are. Let's keep doing that.'"

Schutte is a science communicator—someone who "makes stuff for the Internet about science." Every day is different, and she likes it that way.

### Last one out (is a future scientist)

Growing up in eastern Kentucky, Schutte fell love with marine science, a passion that lasted into adulthood. "I was the first one in the pool and the last one out," she said. "It was the whole experience of being surrounded by water, the way that it looks different and the color changes. And when you're looking down at it, the shift in positioning of things under the water. And the sounds underwater."

Her parents helped her pursue her interests, as well as shaping them. Her mother worked as a computer programmer, working with decks of punch cards well before there were desktops or laptops. She made sure that Schutte had opportunities to explore her interests—attending a marine biology summer camp, for example. Schutte's father, a doctor and dean of a medical school, asked her a significant question after she

finished a fourth-grade science poster on densities of liquids: "What are you going to ask next?"

They were having breakfast, and she suggested asking how many bites of cereal it takes to get to the end of a bowl.

"He said, 'That's a good question,' and then he took a tiny bite, and then he took a huge bite. And I was like, 'Oh, you have to control for the bites,'" she said. "This is how I grew up. Looking back on it as a parent, I see them wanting us to be able to direct our own futures."



(Photo: Virginia Schutte)

Schutte took another selfie in the small mangrove islands off Key Largo in 2009, during her first independent research as a grad student. Underwater to her left is her experiment—a fence of rebar and string holding up sponges and mangrove pieces in the water column.

Schutte attended the University of North Carolina at Chapel Hill, earning a degree in biology as well as volunteering at a wildlife sanctuary in Australia, studying whales in Mexico, studying fiddler crabs while interning with the Smithsonian Tropical Research Institute, and working on coral in a research lab.

She enrolled in grad school at UGA and worked with Jeb Byers, earning a Ph.D. in 2014. But by then, she had realized that the traditional academic route of conducting research and publishing in academic journals wasn't the right fit. Instead, she wanted to help people in the general public—especially non-specialists—find and understand scientific information in order to have a quicker impact.

"It all [felt] very scary looking forward," she said. "But then so natural looking back."

Now based in Glassboro, New Jersey, she spends her days working as a freelancer with multiple clients—usually three that are highly active, two on the back burner, and another five or so in development.

A typical day might include a meeting for Tini Scientific, an ocean tech startup she co-founded that's at the early seed stage. She might work on ideas for an ad agency, brainstorming how an imaging company can tell stories about their microscopes and the people that use them. She might deliver one of her workshops to a group of early career scientists or science communicators. She also tries to devote time to creative projects that are just for her—making TikTok videos about being a mom, or researching an idea that could turn into a full-length documentary (which she's excited about, but not ready to share).

### Experimenting in extreme conditions

In spring 2023, Schutte served as outreach and media lead for a deep-sea expedition to East Antarctica led by UGA marine sciences associate professor Holly Bik.

"Every day was the most amazing landscape I've ever encountered," she said. "I feel so privileged to have gotten to know that part of the world."

While embedded with Bik's team, Schutte explored the kind of role that an onboard media person might take during such a trip. She experimented with WhatsApp as a microblogging platform, garnering 1,000+ daily followers. She brought thrifted clothes on board and did photo shoots for a piece she plans to pitch about how fast fashion is one of the largest contributors to climate change. Sometimes she was on-camera to explain things from her perspective, and sometimes she gathered

content—recording video for TikTok, for example—to share later with partners (e.g., the YouTube channel Minute Earth).

It was a challenging environment to work in, with air so cold it ran down a camera battery in minutes and internet access so limited that only shipboard email and WhatsApp worked.

"Everything felt so new, and there were unforeseen obstacles because of it," she said. "That always happens with fieldwork—things don't go the way you want, so you adjust. Nothing is a failure. It's just always learning."



Schutte films in the Bik Lab in October 2023, capturing visuals that show what happened to the Antarctica samples after they left the ship and were mailed to the lab. (Photo: Jenna Brown)

This perspective is one thing Schutte shares via SciComm Office Hours, monthly free public calls where people can come to her for career advancement advice. Participants range from beginners to mid-career communicators trying to figure out what's next. Rather than just placing an FAQ on her website, SciComm Office Hours allows her to give her time in a way that's more personal and meaningful.

She also gives back to the Odum School, serving as a member of and secretary for the school's Alumni Board of Members.

"It's a service that I'm very, very happy to add to my collection of things that I do, plus it's a great excuse to go back to UGA to stay in touch with people that I really value and like."

And when she has a few spare moments, Schutte asks herself the questions that propel her forward: What's new? What am I doing that's advancing how we think about things and how we move through the world?

"I think there is so much left to be explored in the world," she said. "And I'm the biggest cheerleader for people who are doing it in ways that feel uncomfortable."



# Ecology establishes new Alumni Board of Members

BY ALLYSON MANN

The Odum School of Ecology established its first Alumni Board of Members in 2023, with inaugural members taking office July 1 of that year.

The board contributes to the Odum School in a variety of ways, encouraging alumni involvement in giving; celebrating career paths and accomplishments of alumni; fostering communications, networking and career mentorship; building community among alumni and between the school and alumni; guiding and advancing the mission of the school; and strengthening community connections.

This year, the Alumni Board achieved 100% giving participation for all board members and helped the Odum School reach its goal of 100 donors for Dawg Day of Giving. They announced a new giving society, Trophic Ten, to encourage recurring gifts of \$10 or annual gifts of \$120 or more as a way to provide foundational support for the school's greatest needs. The members also served on alumni panels, helping undergraduate and graduate students learn more about career paths in ecology, and they organized a seminar to discuss inclusivity with students, faculty and alumni.

"The depth and breadth of talent on the Alumni Board is a testament to how the Odum School trains transformative leaders," said Mark Hunter, dean of the Odum School. "The dedication and commitment of this group will, in turn, help to transform how we do business."

The board's second cohort took office on July 1, 2024, and includes the following returning members: Katharine Bleau (BS '13, U.S. Department of the Interior, Washington, D.C.); Elizabeth Blood (PhD '81, ret. National Science Foundation, Pawleys Island, South Carolina); Juliet Eden (AB '21, Ponix, Atlanta, Georgia); Rebecca Haynes (MS CESD '06, National Audubon Society, Columbia, South Carolina); Marirosa Molina (PhD '01, U.S. Environmental Protection Agency, Carrboro, North Carolina); Michael Paul (MS '94, PhD '99, U.S. Environmental Protection Agency, Carrboro, North Carolina); Virginia Schutte (PhD '14, Real Life Science Media, Glassboro, New Jersey); Ethell Vereen Jr. (PhD '10, Morehouse College, Atlanta, Georgia); Brian Watts (BS

'11, The Pew Charitable Trusts, Washington, D.C.); and Stephanie Yarnell-Mac Grory (MD, PhD, MBA; BS '06, Sanofi, Cary, North Carolina).

New members include Lauren Pittenger (PhD, MBA; BS '01, Abt Global, Washington, D.C.); Julie Rushmore (DVM, PhD '13, Centers for Disease Control and Prevention, Atlanta, Georgia); Rebecca San Fratello (BS '19, The Nature Conservancy, Atlanta, Georgia); Stuart Sims (BS '16, The Motley Fool, Denver, Colorado); and Amy Trice (MS '11, Northeast Regional Ocean Council, Washington, D.C.).



Peter Griffith, PhD '88, applies hot sauce to oysters on the half shell during Ecology's Toast to the Coast in fall 2024. Griffith served with the first cohort of the Odum School's Alumni Board of Members, established in 2023. (Photo: Allyson Mann)

"I am continually amazed by our alumni and their trailblazing paths," said Sonia Altizer, Martha Odum Distinguished Professor of Ecology, who served as interim dean when the board was established. "I'm so grateful they remain connected with the Odum School."

Members of the first cohort who rolled off the board this year include Peter Griffith, PhD '88 (Goddard Space Flight Center, NASA, Baltimore, Maryland); Shafkat Khan, PhD '16 (Pittsburgh Zoo, Pittsburgh, Pennsylvania); and Emma Rosi, PhD '02 (Cary Institute of Ecosystem Studies, Lake Leelanau, Michigan).

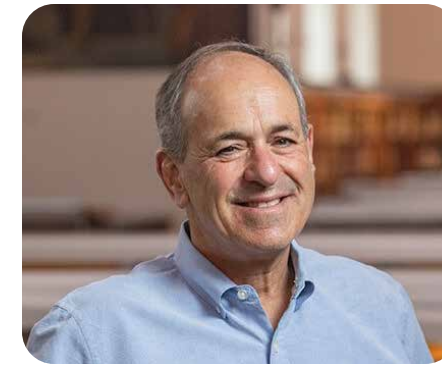
Creation of the board follows more than a year of foundational work completed

by the school's volunteer alumni board working group, which drafted bylaws, selected inaugural members and nominated the first executive committee. That group included Blood, Khan, Molina, Paul and Rosi, in addition to Matt Bonds, PhD '08; David Bowne, MS CESD '97; Tim Carter, PhD '06; Andrew Durso, BS '09; Jack Liu, PhD '92; Kyle McKay, PhD '14; Calley Mersmann, BS '11; Diane Sanzone, PhD '01; Hayley Schroeder, BS '18; Buck Tribble, BS '13; and Irene Wright, AB '21.

New members are selected from nominations to the Nominating Committee for three-year terms beginning July 1. The board meets in person on UGA's campus in the fall and continues to work virtually throughout the year. Nominations for vacancies are due annually by April 1. If you're interested in joining the board or participating in their activities, please contact Nano Serwich at nano.serwich@uga.edu.

## Groffman named ESA president-elect

Peter Groffman, PhD '84, was named president-elect of the Ecological Society of America for 2024-25. Groffman is a professor at the City University of New York Advanced Science Research Center and the Earth and Environmental Sciences Program at the Graduate Center, and the Brooklyn College Department of Earth and Environmental Sciences. He is also a Senior Research Fellow at the Cary Institute of Ecosystem Studies.



"I am delighted and honored to serve on the ESA Governing Board," said Groffman in a story published by the Cary Institute. "ESA has been my primary academic home since 1983 and it has been a great pleasure to watch as our discipline has grown and made great progress in basic science, with application to pressing societal problems. ESA has been fundamental to this progress."

Groffman's research focuses on climate effects on ecosystem biogeochemical processes related to carbon and nitrogen cycles. He was a Convening Lead Author for the 2013 U.S. National Climate Assessment Chapter on Ecosystems, Biodiversity and Ecosystem Services, and a lead author for the Second (Wetlands) and the Third (North America) Assessment Reports of the Intergovernmental Panel on Climate Change.

ESA, the nation's largest organization of professional ecologists, seeks to advance the science and practice of ecology to empower people to secure a thriving planet.



## Bleau named to 40 Under 40

Ecology alum Katharine Bleau, BS '13 ecology, BS '13 biology, was named to UGA's 40 Under 40 Class of 2024. Bleau is a rising star at the U.S. Department of the Interior, serving as Agency Council within the Branch of Environmental Restoration, Division of Parks and Wildlife in the Office of the Solicitor. She plays a pivotal role in shaping litigation and policy surrounding

critical environmental issues around drought and clean energy.

Bleau attributes her understanding of ecological frameworks to her time at the Odum School, where she currently serves on the Alumni Board of Members. Her environmental policy journey began when she participated in domestic field studies at U.S. national parks and study away in Costa Rica. After graduating from UGA, she distinguished herself at the Yale School of the Environment by participating in Yale Environmental Women Student Leaders and serving as editor of the Yale Environmental Review. At Vermont Law, she excelled in moot court competitions and received academic excellence awards in environmental law, further demonstrating her dedication to advancing legal frameworks for environmental protection.

The 40 Under 40 program celebrates the personal, professional and philanthropic achievements of successful UGA graduates under the age of 40. The honorees will be recognized during the 14th annual 40 Under 40 Awards Luncheon on campus.

I'm excited to have been a part of the amazing things the Odum School community achieved together over the past year. Our alumni and friends smashed our fundraising goal by reaching 140% of our target! Popular areas of support included water resource management, study away and travel awards, research grants, pollinator ecology, student participation in sustainability projects, and critical operational support that makes the academic experience more meaningful and affordable. These resources help us push forward in our mission to conserve what we have, repair what we've damaged and build a sustainable future for all.

Beyond the dollars raised, I am grateful for the leadership shown during the Odum School Alumni Board's first year. Thanks to the steering committee and new members, we are forging a path to create philanthropic, networking and career development opportunities that position our students for brighter futures. The dedication of our volunteers reminds me that the Odum School community is strong, and providing for the next generation of ecological leaders can be both inspiring and fun!

Personally, my passion for the environment that we all share has doubled during my first year here. The hope and dedication I see in our students, researchers and alumni are truly inspiring. I'm grateful to the more than 475 donors who made this year possible. Your generosity is serving the state of Georgia, and our planet, for generations to come.

*Thank you for being an important part of our community!*



## Melissa Lee

Development and Alumni Relations Coordinator  
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# HONOR ROLL OF DONORS

The Odum School is grateful for alumni and friends who make a difference with annual gifts supporting our students, research and community partnerships. Below are the names of those who made gifts to the Odum School between Jan. 1, 2023, and Dec. 31, 2023.

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## Harden gift will support graduate students

Wayne Harden's first experiences hiking, camping and conducting fieldwork as an Odum School of Ecology student led to fond memories and formative adventures, and today he's paving the way for future students to have similar encounters.

A recent gift from the Albany, Georgia, native will create two separate funds to support graduate students and help with their expenses. It came off the heels of a trip to Athens last year, where he was able to visualize opportunities on campus.

"I met the interim dean [Sonia Altizer, who served from 2021 to 2023] and some faculty to get an idea of what was needed and try to figure out how I could help," said Harden, who earned a B.S. in zoology in 1971. "It impressed me that there's a lot more support for students than when I was in graduate school, and I wanted to support that."

The Wayne Harden Fellowship in Ecology Fund will support a graduate student studying freshwater conservation, management or policy, while the Wayne Harden Freshwater Ecology Student Support Fund will promote academic success in freshwater conservation, management or policy and aims to recognize outstanding students across the Odum School.

The graduate fellowship will be awarded to incoming graduate students pursuing an M.S. or Ph.D., and students will be able to retain it throughout their degree programs. Recipients can use the funds on research grants and travel awards for field research or presentations.

Harden, now retired, credits Rachel Carson's book *Silent Spring* with influencing his decision to enter the world of ecology. After graduating from UGA, he earned an M.S. in public health in environmental science from the University of North Carolina at Chapel Hill, before spending his career with the South Carolina Department of Health and Environmental Control and Duke Energy Corporation.

The cost of living and higher education aren't the same as when he was a graduate student and could support himself with a part-time job, he said.

Now a resident of Charlotte, North Carolina, Harden is a Trophic Ten member who makes recurring monthly gifts to The Ecology Fund. Since 2017 he's been a supporter of the fund, which provides flexible funding for the school's greatest needs, including student awards, student clubs and organizations, and other recruitment and alumni relations needs.

He won a Green Yard of the Month award in 2009 for the variety of plants and year-long blooms he maintains—a testament to his commitment to Odum's ideals. With his gift, Harden's impact will be seen from a wider scale. It extends from flora and fauna; he'll be helping tomorrow's supporters of Earth's ecosystems.

"It's a good thing to do, to support the school," Harden said. "More recently, it's been a feeling of protecting the environment, the future and how it looks. I'm hoping to make some positive changes in the world."



Ecology alumnus Wayne Harden (right) poses with assistant professor Charles van Rees at Spring Fling 2024 in April. (Photo: Wingate Downs)

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 Georgia Zumwalt and Jon Zumwalt  
 Anonymous (four donors)

Many alumni and friends have supported the school for multiple years, created named endowment funds or made transformational commitments to the school. Below are the names of those who have given more than \$10,000 in their lifetime to the Odum School of Ecology as of June 30, 2024.

## LIFETIME SUPPORT

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 World Wildlife Foundation  
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 Anonymous (10 donors)

## The Branch family commits to environmental stewardship

For Mack Branch, BBA '07, and Tamara Branch, BBA '09, JD '12, the spirit of giving back to their alma mater includes giving to the Odum School of Ecology. With a shared passion for environmental preservation and a deeply rooted connection to the coast, their support for the Coastal Georgia Marine Ecology Fund is not just a philanthropic endeavor but a legacy in the making.

Their journey began as undergraduate students and led them to a wedding on St. Simons Island. The couple returned to South Georgia, where Mack works for his family's business, Curtis Packing, and Tamara serves as the vice president of legal at Tift Regional Medical Center. Living just a few hours from the coast, they cherish their visits to the barrier islands to visit Tamara's dad.

As parents to two young boys who love being in nature, the Branch family's commitment to environmental stewardship is more than just a financial contribution; it's a testament to their belief in conserving natural resources for human well-being. The decision to support the Coastal Georgia Marine Ecology Fund is an extension of their values.

"Our time at UGA laid the foundation for who we are today," Tamara reflects. "By supporting students studying Georgia's coast, we're not only giving back to our alma mater but also ensuring that future generations can continue to enjoy it for years to come."

Through the fund, Odum School students working with UGA Athletic Association Professor Jeb Byers are at the forefront of coastal conservation and restoration. From studying the effects of climate change on coastal biodiversity to implementing sustainable management practices, their research is shaping the future of coastal resiliency in Georgia.

Commitments like those made by the Branches and other supporters of the Coastal Georgia Marine Ecology Fund are a beacon of hope. Their generosity preserves the ecological integrity of Georgia's coast and nurtures the next generation of environmental leaders.



Mack (left) and Tamara Branch enjoy a day at the beach with their sons, Brooks (center) and Parker (front). The couple supports the Coastal Georgia Marine Ecology Fund, a reflection of their commitment to environmental stewardship. (Photo: Contributed)

## HERITAGE SOCIETY

The Heritage Society honors alumni and friends who have made documented bequests in their wills or other deferred gifts in support of the University of Georgia. Below are the names of Heritage Society members supporting the Odum School of Ecology as of June 30, 2024.

Christopher F. D'Elia and Jennifer D'Elia  
 John L. Gittleman

C. Wayne Harden  
 Effie L. Keaster\*

Eugene P. Odum Estate\*  
 \*Indicates that the gift has been realized.

## Tap into the 10% Rule. Join the Trophic Ten.



The Trophic Ten participants support the Odum School of Ecology with a gift of \$10.00 per month. Just as primary producers support ecosystems with their foundational energy, the Trophic Ten provides reliable support for our greatest needs. Your gift can be designated to a fund of your choice to benefit high-impact programs across the school.

**\$10** /month or **\$120** /year



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