

HEXAPOD HERALD

Fall 2022

New Faculty Faces in the Department

The Entomology Department at the University of Georgia is excited to introduce three new faculty members. **Dr. Allison Johnson**, **Dr. Kelly Carruthers** and **Dr. Apurba Barman** all joined UGA this fall with varied responsibilities in the department.

Johnson, a tried-and-true Georgia Bulldog, is the new Pesticide Safety Education Program coordinator for the state. She graduated with Bachelor's and PhD degrees from UGA. The public service position is responsible for creating educational resources and training materials to help private and commercial pesticide applicators obtain proper certifications for the safe and effective use of pesticides throughout the state.



Johnson hopes to increase accessibility by modernizing program materials to include webinar trainings, interactive presentations and having materials translated into multiple languages.

Carruthers is the new Academic Professional Associate and Undergraduate Program Coordinator for the department. She earned her master's in Entomology from the University of Arkansas. After spending a few years as a science teacher at an early college high school in Texas, she headed to Florida where she completed her PhD at the University of Florida.



Her "winding path" has brought her to UGA where she hopes "to bring together my love of education and helping students with my love of insects," she said.

"I also hope to be able to support students within the department and provide a space and home for more students to

find entomology as a rewarding career path in the same way I did," she said.

Barman joined the department as an assistant professor focusing on research and Extension activities targeting the needs of tree nut and fruit crops in the state. He earned his master's degree in Entomology from Texas Tech University and his doctoral degree from Texas A&M University.

Most recently, Barman worked as an IPM Advisor with the University of California Cooperative Extension in the southern California area and brings a wealth of working knowledge on insect pest management issues on crops ranging from cotton, vegetables, alfalfa and almond. In looking ahead to his work with a variety of crops, especially with the emerging citrus production industry, Barman said that "understanding the landscape composition, ecological interactions of the pests and natural enemies and utilizing this information along with existing and novel pest management tools will be the key components of my research program."



Department of Entomology
College of Agricultural & Environmental Sciences
UNIVERSITY OF GEORGIA

From the desk of S. Kristine Braman ...

As we bring 2022 to a close, I look back on some of the highlights of this year. Certainly, being able to send 24 graduate students to ESA in Vancouver was a highlight, and we appreciate our donors who provide student enhancement funds for the department.



Our faculty and students presented their work in Vancouver and enjoyed the networking opportunities as you will see further in the newsletter. We congratulate **Nia Keyes-Scott** who won the Frontiers in Insect Science Graduate Student travel scholarship to present her work as well as our other student presenters who won awards in their categories.

This year for the first time we hosted the 4th national conference

on protecting pollinators in urban landscapes. As this conference had been delayed by the pandemic, we were so excited to bring the interdisciplinary, interagency crowd to the southeast for the first time to

enjoy the presentations, posters and workshops.

Our campus dining halls even got involved by highlighting foods

“brought to you by pollinators” in honor of the event!

We welcome our new students, staff and faculty to UGA Entomology and look forward to an exciting and productive 2023. Best wishes for a restful holiday break and see you in the new year!



Dr. Keith Delaplane presents at the National Protecting Pollinators in Urban Landscapes Conference held at UGA this fall.

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Will Hudson named to IPM Hall of Fame

Dr. Will Hudson was selected as a 2023 inductee into the Friends of IPM awards “Hall of Fame.” This award is a lifetime achievement award which recognizes individuals who have significantly contributed to IPM in the Southern region over the course of their careers.

The review panel said they were impressed with Hudson’s work with diverse commodities such as turfgrass, ornamentals, and pecans, which each have their own pest challenges.

“From working on the IPM of mole crickets, ambrosia beetles and Bermudagrass stem maggots to becoming the media darling for joro spiders, you have made significant contributions to insect management in diverse settings,” the panel commended when extending the honor.

Hudson has also mentored and taught many students and has made a commitment to service throughout his career.



Dr. Ash Sial presents Dr. Will Hudson with the Friends of IPM award, IPM Hall of Fame recently at a gathering of Extension faculty at UGA

Congratulations Dr. Hudson!



Joro now found in Spalding County at Garden

Since first making their appearance in Georgia in 2014, [Joro spiders](#) have steadily expanded their range in Georgia, and now has reached the University of Georgia [Research and Education Garden](#) on the [UGA Griffin campus](#).

Native to Japan and China, Joro spiders are believed to have made the trek overseas by hitching a ride in a shipping container. The striking arachnid spotted at UGA-Griffin is thought to be the first documented sighting of the species in Spalding County. So far, sightings have been limited to the northern region of the state. Spalding County is located about 40 miles north of the Georgia fall line, which separates the Piedmont region of the state from the Coastal Plain.

Entomologist [Dan Suiter](#), a professor in the UGA [College of Agricultural and Environmental Sciences](#), confirmed the species' identity after it was discovered by [Alyssa NeSmith](#), a horticultural assistant with the Research and Education Garden.

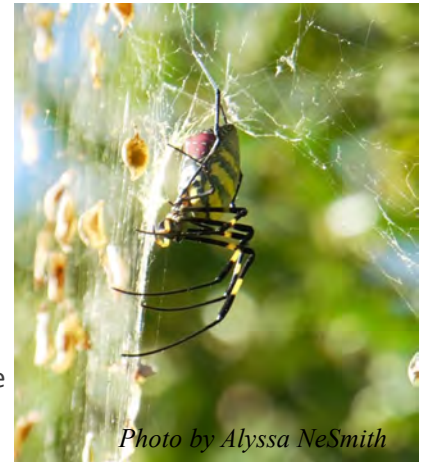


Photo by Alyssa NeSmith

“We think this may be the first report of one in Spalding County,” Suiter said. “There have been positive reports in surrounding counties such as Henry and Pike, but as far as we know there have not been any in Spalding.”

On [jorowatch.org](#), UGA entomologists are tracking sightings of the spider to help determine how they are moving throughout the state. Spider spotters who think they have found a Joro can upload a photo and location information on the website where the species will be confirmed by researchers. The spiders are similar in appearance to the golden orb weaver, a spider native to Georgia, which is why the identification must be made by entomologists trained to correctly identify different species of arachnid. A map on the [website](#) shows the counties where Joro sightings have been confirmed. Spalding County is the 47th county in Georgia to host the eight-legged creature.

Male and female Joro spiders differ greatly in size, with the males dwarfed by the larger, more colorful females. Male Joros are approximately 0.25 inches long and brown with two yellow stripes on each side of their abdomen and a brown stripe in the middle. Adult female Joro spiders have a yellow abdomen with broad blue-green bands on the back side and yellow and red markings on the underside that can grow up to 1.25 inches long. They also have long black legs with yellow bands that add to the females' impressive size.

The spider spotted in the Research and Education Garden is a female who will be preparing to lay an egg sac between now and November. These egg sacs are made of a dense white silk and contain between 400 to 500 eggs. Female Joros often attach their egg sacs to leaves, tree bark or flat surfaces, but they can also attach them to potted plants or cars, which helps explain their spread throughout the state and into the upstate and midland regions of South Carolina. After surviving the winter, the eggs will hatch in the spring and the tiny babies have two ways they can move, either by [ballooning](#) or by hitching a ride on items moved from one place to another. Joros that use ballooning — spinning tiny parachutes of spider silk that are picked up by the wind and blown to a new location — can move about 10 miles a year. The range of Joro spiders transported on moveable surfaces is virtually limitless.

Researchers are currently evaluating the effect the species will have on local ecology, but it is too soon to fully understand their impact. The good news is they pose no danger to humans and pets. In even better news, Joros are one of very few natural predators of [stink bugs](#), one of the South's most notorious agricultural nuisances, as well as other insects that fly into their webs, such as moths, flies and mosquitos.

“They are harmless to humans and eat other pest insects,” said Suiter. “There is nothing to be afraid of, and it looks like they are here to stay.”

Arachnid enthusiasts who would like to get a glimpse of the Joro spider can visit the UGA Research and Education Garden at 129 W. Ellis Road in Griffin. The garden is open to the public Monday through Friday from 8 a.m. to 5 p.m. The garden will also be open on Sunday, Oct. 23, and Sunday, Oct. 30, from 1 to 4 p.m. For more information on Joro spiders and how to report a sighting, visit [jorowatch.org](#).

By Ashley Biles, UGA Griffin Campus for CAES News

Horace Zeng honored with art display at UGA School of Art



Horace Zeng, artist and PhD student in entomology, researches fire ant chemical and behavioral mechanisms and allows his subjects (fireants) to create art through their movement on canvas. The painting (pictured above) is hanging in the gallery at the UGA Lamar Dodd School of Art as part of the art education graduate student exhibition.

This work was done in collaboration with Jiayi Guo, PhD student in art education. The title of the piece is “Expression of the Superorganism.” The canvas is semi-transparent, on top of a lightbox. Horace, a student in Dr. Ken Ross’ lab graduating this semester, describes the artwork as follows:

Erwin Panofsky stated in the 1940s that “man is indeed the only animal to leave records behind him, for he is the only animal whose products ‘recall to mind’ an idea distinct from their material existence”. However, in the seemingly boundless expression of the superorganism, art created by ants features a strong post-humanist element, such that the aesthetic dimension of being for humans as well as other animals (ants) is one of cooperation rather than conflict. We can no longer separate humans from other animals qualitatively regarding a creative identity and thus a reframing of our narrow perceptions of the creative spirit in the natural world is warranted.

Diverse Landscapes at the Heart of Bee Conservation

By Amanda Budd, CAES writer

New research from the University of Georgia revealed that mixed land use – such as developments interspersed with forest patches – improves bee diversity and is leading to new solutions for bee conservation. The researchers hypothesized that development would negatively affect bee diversity, but the results of the study were surprising. They found that small amounts of development actually had a positive impact on the number of bee species present in a given area.

The team from UGA’s [College of Agricultural and Environmental Sciences](#) included Amy Janvier, [Kris Braman](#), Mike Ulyshen, [Clayton Traylor](#) and [Miriam Edelkind-Vealey](#). The results of their work were published earlier this year in the [Journal of Insect Conservation](#).

For their study, researchers sampled bees on a variety of properties around Athens, Georgia, and classified the percentage of development, agricultural fields and forests in the surrounding landscape. This allowed the team to link landscape factors with the diversity of bees observed on each property.



The researchers found 111 species during their study. Braman, principal investigator and head of the [Department of Entomology](#) at CAES, said she’s happy to see the immense bee diversity hosted by Athens. “One of our key findings, I think, was just how many bees there were,” said Braman. “The number of species we found represents about 20% of the bee species that are known in Georgia. If you think about all the different habitats where you can find bees — in more natural or wild settings, orchards and all sorts of habitats — for us to get that many species was very gratifying.”

In addition to revealing how many bees were present, the results showed the importance of forest remnants, which are small pieces of forest left in otherwise developed areas. More species are likely to live in a landscape that has both open, developed areas and forest remnants, than in just developed land or just forest.

Braman explained this shows the enriching effect of more blended landscapes with multiple land-cover types. Having only forest cover limits bee diversity to forest-dwelling species. But forest patches in combination with other land-use types preserves forest-dwelling species and hosts other bee species that prefer open spaces. Braman said that some species — like the Morrison’s miner bee (*Andrena morrisonella*) — must prefer the more open habitats provided by developed areas.

Braman noted that the findings may be a helpful framework for future research to assist in bee conservation.

“I think this work serves as a groundwork for future discovery that can help us understand what we need to plant more of for bee conservation,” said Braman. “Entities like UGA’s [State Botanical Garden of Georgia](#) have plant-conservation initiatives and they’re very interested in what they can do for wildlife, including bees, so we can use this research to look at that more in the future.”

Braman said the primary author of the paper, Janvier, a second-year master’s student in the [Department of Entomology](#), passed away in 2020 during the data-collection phase of the study. Braman and the other authors chose to honor their colleague by publishing the completed study with Janvier listed as first author.

ESA Vancouver

UGA Entomology students represented our department at Entomological Society of America meeting in Vancouver, Canada. A large number of faculty and students made the trek in order to present papers, posters and talks to the large group of entomologists from across North America. Derek Huck was awarded first place in student oral presentations in the PBT section, Pedro Toledo won first place in student oral presentations, bio-control section. Derek is a PhD student in the Strand lab. Pedro is a PhD student in the Schmidt lab. Congratulations!



Pedro Toledo and his first place student oral presentation



Derek Huck in Vancouver



SNAPSHOTS



MS Student Spotlight

Miriam Edelkind-Vealey

My name is Miriam Edelkind-Vealey. I'm a second-year graduate student in Dr. Kris Braman's lab and co-advised by Dr. Mike Ulyshen in the Forest Service. I study bees in urban fragmented forests around Athens, GA. We don't often associate bees with forested areas; however, more research shows that bees rely on wooded areas for nesting habitat and floral resources. Patches of remnant forest in urban areas offer refuge from anthropogenic expansion to many wild bee species.

I grew up in Atlanta, Georgia. Despite living in the city, I spent my childhood outside, finding any excuse to get in the dirt. I remember collecting ladybugs and fireflies in my backyard and digging up worms in our vegetable garden, but I had never thought of becoming an entomologist. I knew I loved animals, and I had dreamed of becoming a veterinarian with a focus in conservation since I was little. Entomology had never occurred to me as a viable career path until my 3rd year as an ecology undergraduate student in UGA's Odum School of Ecology.

It wasn't until COVID-19 pandemic that my perspective shifted. I spent the first few months of quarantine wandering around my neighborhood parks and gardens here in Athens. I watched flowers bloom and change and subconsciously took note of the bees and butterflies visiting them. I felt aimless and uncertain about what I should do once I graduated in the following spring. That June, I came across a job posting for an undergraduate research assistant in a pollinator biodiversity project with Dr. Braman and her student Amy Janvier. After the most pleasant interview, I joined the lab in July of 2021.



I remember my first day in the lab: Dr. Braman asked me to pick out all the bees from a sample preserved in alcohol. I thought I could easily identify the big, fluffy insects without a problem. Turns out, I was wrong and completely unaware of the diversity within this single group of insects. I overlooked the metallic green and small black sweat bees among so many others of the 500 or so species in Georgia alone. Over the next year, I continued working in the lab, pinning, and learning to identify bees. I listened to podcasts while I worked and read papers in the field about pollinators and their ecology. I became completely enthralled in their bee-auty (haha).

I had the privilege of staying in the Braman lab to pursue a master's degree in pollinator ecology. Starting with an interest in constructing plant-pollinator networks using the brood cell provisions of cavity nesting bees, my project has grown to encompass forest community diversity and functional ecology of wild bees in urban forests. As the questions continue to expand, I am converting my MS to a PhD to continue exploring the interactions between our wild bees and their forest habitat.

Outside of my research, I serve as the Outreach Coordinator for the HO Lund Club, where I organize outreach events using the exotics insects from the UGA Insect Zoo. When I'm not working with bugs, I can be found in the woods hiking and backpacking or at home baking and gardening with my cat!



PhD Student Spotlight



Derek Huck

My name is Derek Huck and I am a third year PhD student in Michael Strand's laboratory. My broad research interests are insect-microbe interactions as well as vector biology.

My journey to entomology was more of a winding road than a straight path. I grew up on a farm in rural southeastern Ohio and always enjoyed going outside and playing in the woods. I liked watching bugs such as the ant colonies in our yard but I didn't necessarily feel a calling to study them as a career. As I went through high school, I enjoyed learning about the sciences and I found biology to be particularly interesting. I enrolled at Ohio State University as a Biology major but was uncertain about what I wanted to do with that major. After my first semester, I switched majors to Evolution and Ecology and started exploring research as a potential career path. I worked in a fish ecology lab for a few semesters

which was a valuable but ultimately unsatisfying experience. During my second year I started working in the OSU insectary where I helped rear dozens of species of arthropods that were to be used for outreach or research purposes. I highly enjoyed working in the insectary and it was there that I realized that studying insects could be the right path for me. I also took a parasitology course during my second year and was fascinated by all the ways that parasites and vectors interact with hosts to make a living. I further pursued my interests during my third year by joining the lab of Dr. Megan Meuti where I led my own research project that focused on the relationship between adult diet and male reproductive physiology in the Northern house mosquito, *Culex pipiens*. Conceptualizing and executing this project was challenging but highly rewarding. My experience in the Meuti lab was very positive and it cemented my decision to continue studying insects as a graduate student.

Near the end of my undergraduate career, I became aware of the many ways that microorganisms interact with mosquitoes as well as other insects and I was determined to learn more about the subject. With all of my interests in mind, my graduate school search eventually led me to the Strand lab here at UGA. My work as a PhD student is oriented toward studying how interactions with microbes enable mosquitoes to thrive in the habitats in which we find them. I also want to further our understanding of how factors like diet and microbes affect the potential for insects to transmit disease-causing parasites and viruses to humans and other animals. Ultimately, I hope to start a research lab of my own that investigates questions related to insect-microbe interactions and vector biology. I also enjoy serving the department as President of the Lund Club, our graduate student service organization.



Hexapod Herald Subscriptions

Michele Hatcher—Editor

The Hexapod Herald will be issued in **Spring, Summer** and **Winter** of each year. We ask that you share this issue with friends and neighbors, and anyone who is interested in UGA Entomology. Electronic subscription is preferred.

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Or Call 706-542-2816.



The Entomological Society of America recently elected Jamal Hunter, PhD student in the University of Georgia entomology department, as the student representative to the ESA Governing Board.

Congratulations Jamal!

Insectival live once again at Bot Garden

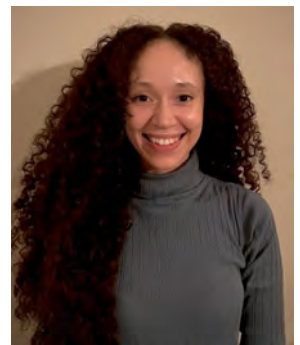
After a multi-year hiatus due to Covid regulations and social distancing, Insectival, celebrating insects and educating the public about the six-legged animals in our world, was back to an in-person event this year. Entomology faculty and students enjoyed showing off our insects to the record breaking crowd of children and adults who were thrilled to be able



to come to the Georgia Botanical Gardens in Athens. Zia Williamson, Gabriela Cardona-Rivera and Amy Sparer (pictured above) introduced everyone to the exotic insects reared in the UGA Insect Zoo.

New faces in the Entomology office

The department is happy to welcome **Lilli Stagg** and Erin Brinson to the entomology family! Lilli is our new accountant and is looking forward to working with everyone. She is an Athens native who loves music, cooking and most recently discovered a love for vinyl collecting. Her high school entomology class was by far the best class she has taken and she looks forward to hearing about the different specialties in the department.



Erin Brinson has lived in Athens since she was a freshman in college many years ago. She grew up on a crop farm in rural Georgia and has always enjoyed being outside and spending time with family. Erin loves animals of all kinds, but especially her 4 year old Olde English Bulldog named Luther who is spoiled rotten. Her older sister, Cori also lives in Athens and works for the UGA Athletic Association. Green is her favorite color and when considering eating out, she heads to her favorite restaurant in Athens, Peppino's Pizzeria.



Calendar Reminders

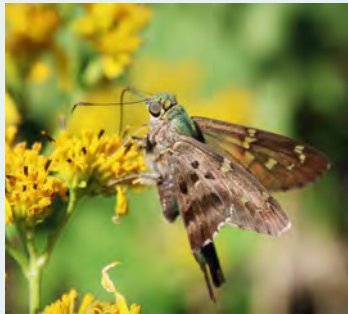
December 26—January 3 — UGA Holiday

January 9—First Day of Class

January 16—MLK Holiday

January 27—Ag Forecast 2023

March 6-10—UGA Spring Break



We don't mean to bug you but . .



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If you have any questions about making a gift to CAES, please contact the Office of External Relations at 706-542-3390 or email external@uga.edu.

UGA Entomology Lighting the Way into 2023

