



HEXAPOD HERALD

Winter Issue 2019



D.W. Brooks Faculty Award for Excellence in Teaching

Teaching is the heartbeat of Trish Moore's academic career. Just ask the many undergraduate and graduate students who have learned in her science classroom or her lab. From the moment all students walk into her world, she becomes part of theirs – educator, mentor, encourager.

And for this reason, and many more, the Department of Entomology at UGA is very proud of her selection as the D.W. Brooks Faculty Award for Excellence in Teaching.

Moore serves a diverse range of students through her teaching responsibilities, which range from introductory biology to a course designed to increase graduate teaching assistants' awareness of teaching philosophy, practice and professional development. She was instrumental in restructuring the introductory biology class she teaches to change how science is taught in order to encourage all students, especially women and historically underrepresented groups, to pursue scientific careers.

"Dr. Moore's teaching style is unparalleled. In a single lecture, she tailors it so that it fits the different ways in which students learn,"

said Joshua Washington, former undergraduate student and current graduate student in Moore's lab.

"It was clear in undergrad the positive effect she had on a student's academic life, but collaborating with her on a graduate level has shown me just how influential she can be in the personal and professional life of a student as well. What Dr. Moore does so effortlessly is contribute, majorly, to the well-roundedness of students," Washington said.

Students in Moore's introductory biology class consistently give her the highest average ratings for teaching on student evaluations and high praise in the comments sections. One student said that Moore is "kind, funny and open to helping her students. She even encourages students to explore each topic in further depth which shows how much she cares about her students."

Another student liked how Moore "used real life examples to help us not only understand the content but also to understand how it can be used in the real world, so I feel like what we're learning has some meaning and importance to it."

Moore's exceptional teaching and mentoring, which goes beyond her students to reach colleagues seeking insight on challenging classroom scenarios, has earned her fellowships including the University of Georgia Center for Teaching and Learning Senior Teaching Fellowship, the UGA Center for Teaching and Learning Fellowship for innovative Teaching, A UGA National Academy Education Fellowship in Life Sciences, A Leverhulme Trust Research Fellowship, and fellowship in the Higher Education Academy, the Omicron Delta Kappa Honorary Society and the American Cancer Society.

The pulse of her teaching effectiveness clearly reverberates as one student very clearly stated, "Dr. Moore rocks!"

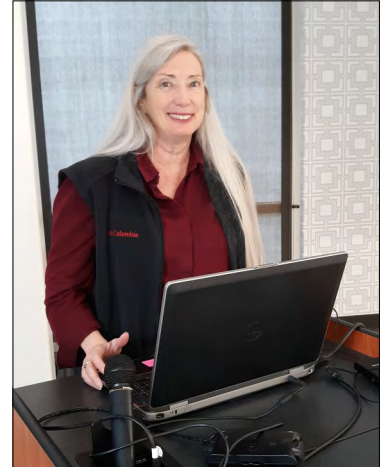
From the desk of S. Kristine Braman ...

Greetings from the UGA Department of Entomology! It is always a pleasure to share with you the impact of our faculty, staff and students on the world around us through their research and education efforts. Notable recognitions highlighted in this issue include awards received by faculty in our department. **Trish Moore** is the recipient of the prestigious D.W. Brooks Award, **Elmer Gray** received the CAES Staff Award for excellence in technical support, and **Mike Strand** was named the inaugural H.M. Pulliam Endowed Chair.

Our graduate students (27 PhD, 24 MS and 9 MPPPM) are young leaders who inspire us and invest in our department as much as we invest in them! The graduate student led **Lund Club** has been very active and provides leadership in

many of our outreach and recruitment efforts in the Department. Their enthusiasm is infectious and sets a wonderful tone for our department. This year's Lund Club has embraced fund raising as well as outreach with a goal of investing back into the department as mini travel grants for students especially undergrads. We appreciate our 22 Entomology and 88 Applied Biotechnology undergraduates and enjoyed some informal mix and mingle sessions where they were encouraged to join the Lund Club.

Our Insect Zoo has a new look and we appreciate the dedicated assistance from undergraduates **Emma Grace Crumbley** and **Kidus Yared** under inspired leadership from **Jena Johnson**. We are grateful to our alumni like **Linden Pederson** who invested so much time in our insect zoo and is now in a medical illustration program at Augusta but still comes back to dress up our bulletin board with her clever illustrations. We have our eyes on all the exciting accomplishments ahead in 2020!



Inside this issue

Calendar reminders	16
GPB at Insect Zoo	9
Alumni News.....	13
Faculty Highlights	4
Staff Highlights	6
Student Spotlight	11-13

Special points of interest

- Pulliam Chair, page 3
- Honey Bee car tag, page 8
- Scholarship awards, page 15



Lund Club members man the annual bake sale to raise funds for club outreach activities. Members pictured above are Carissa Gilliland, Alan Bosworth, Sophie Racey, Nia Myers, Katherine Hagan and Conor Fair.

Strand selected inaugural Pulliam Chair

by *Michele Hatcher*

Growing up in rural east Texas, Michael Strand had never met a scientist.

He knew lots of hard working people in that part of the country but nobody he knew got up every day and went to work “doing science.”

But through his education and determination, Strand has established himself as a world class researcher, member of the National Academy of Sciences and professor of entomology at the University of Georgia. Most recently he has been selected as the inaugural **H.M.**

Pulliam Endowed Chair in the College of Agricultural and Environmental Sciences.

The chair was established in 2018 by the family of Henley Morris Pulliam to honor his dedication as an agriculture teacher in Georgia during the heart of the Great Depression and his love for his family and UGA.

Looking at the phenomenal body of work listed on Michael Strand’s resume, he was the obvious selection.

But looking at the life and the heart of the scientist and educator, he is the perfect choice.

As a junior at Texas A&M, young student Michael Strand had no real interest in entomology, but took an elective survey course which stirred his curiosity. So, he asked the instructor if anyone in the department would let him work on some kind of project.

“I needed the money but also wanted some kind of ‘lab’ experience,” he explained. One thing that east Texas had plenty of were fire ants, and one lab that had plenty of money to try to figure a way to get rid of them was Brad Vinson’s lab. Strand landed a job with a research scientist in Vinson’s lab and started collecting samples that were being used to identify a pheromone produced by the imported fire ant.

“I really got interested in the project and helped with it being completed . . . this project and the intro class resulted in my changing majors. Brad Vinson let me stay in the lab my senior year where I did a ‘senior thesis’ project on a different topic from my fire ant job,” Strand said, describing the pivotal point where a future science career was realized.

Graduate school was a natural next step, his PhD completed by age 26.

“Being exposed to different people in the lab where I got this hourly undergraduate job together with my discovering that I really like doing little experiments were the ‘vehicles’ to what ended up being a career. With all sincerity, I really loved being a graduate student and working on the projects I got to experience,” he said.

In his own lab at UGA, students, Post docs and technicians are working, learning and contributing to a wide variety of research projects. And universities across this country and beyond have scientists, researchers, teachers that have passed through his lab. And what he taught them has mattered.

“Although Dr. Strand is regarded as one of the nation’s top scientists for his research accomplishments, he is also a truly excellent teacher and mentor,” said Dr. Gaelen Burke, UGA entomology assistant professor and former post-doctoral associate under Strand.

“As a mentor, Dr. Strand is always welcoming and puts aside what he’s doing for me to badger him with questions! When I worked in his lab, he was very supportive of me proposing, developing and pursuing ideas and patiently sharing his deep knowledge on all sorts of topics,” Burke said.

“And in the classroom with undergraduates, he is engaging and his enthusiasm and fascination for insects is infectious!” she added.

Michael Strand may be a renowned scientist fearlessly conducting cutting edge research; yet every day he walks into his lab he walks into it with the soul of that east Texas graduate student.

And that is what the H.M. Pulliam Endowed Chair is about.



Faculty Highlights



Dr. Ashfaq Sial and Dr. Reham Fathey Aly Mohamed meet with olive farmers in Egypt.

Dr. Ashfaq Sial, Associate Professor of Entomology and IPM Coordinator in the Department of Entomology, University of Georgia, recently received an international collaborative grant for **\$50,000** from **USDA**, Foreign Agriculture Service to improve fruit fly monitoring and management in Egypt. Sial will serve as principal investigator and will collaborate with Dr. Reham Fathey Aly Mohamed, the former Borlaug Fellow in his lab and current faculty member in Department of Zoology and Agricultural Nematology, Cairo University, Egypt, to educate small fruit farmers in Egypt to accurately identify and effectively manage fruit fly pests using new innovative technologies and help small farmers utilize these environmentally friendly technologies to effectively manage quarantine pests while minimizing the use of broad-spectrum insecticides. The goal is to increase marketable yield leading to higher profits for small farmers in local and export markets and ultimately improve quality of life of small farmers living in far flung rural areas in Egypt. The research project will help farmers effectively use pheromone traps and educate them to use more reduced-risk insecticides instead of the broad-spectrum insecticides that are toxic to beneficial insects, humans and other non-target organisms.

Additional faculty grants awarded

Michael R. Strand and **Mark R. Brown** awarded **\$1,875,000** from National Institutes of Health for Endocrinology of mosquito reproduction. Start-End dates: June 12, 2019 – June 12, 2020.

Michael R. Strand awarded **\$1,875,000** from National Institutes of Health for Role of the gut microbiome in mosquito development. Start-End dates: Sep 1, 2019 – Aug 31, 2024.

Yanzhuo Zhang awarded **\$90,000** from the USDA Forest Service for the Hemlock Woolly Adelgid Predator Rearing Lab for 2019-2020.

Michael Toews, Aparba Barman, Phillip Roberts, Rajagopalbab Srinivasan awarded **\$115,144** (amount to UGA from \$324,521 total grant collaboration) from USDA-NIFA-CPPM for epidemiology and management of cotton leafroller dwarf virus, an emerging insect-transmitted virus in the southern US. Start-End dates: Jan 1, 2020 – Dec 31, 2021.



Entomology Department Head **Kris Braman** and Professor **Will Hudson** were recognized for **30 years of service** to the University of Georgia at the College's recent Holiday Lunch and Awards Ceremony. Thank you for your years of teaching, research and service. And many more!

UGA Entomology Position Announcement Assistant Professor — Entomology Education

For more information:

<https://www.ugajobsearch.com/postings/133699>

GRANT COLLABORATION IN ACTION



Dr. Angelita Acebes checks a potted pecan tree for ambrosia beetle infestation. The trees are prepared under artificially flooded conditions for research purposes.

Research entomologists in the University of Georgia College of Agricultural and Environmental Sciences (CAES) are using three grants to study ambrosia beetles in an effort to prevent future attacks and preserve more fruit and nut trees.

The first grant, \$10,000 funded through Southern Integrated Pest Management Center, supported the work of a team of entomologists, plant pathologists and UGA Cooperative Extension specialists at CAES who are working with growers to help identify different ways to combat the issues presented by ambrosia beetles.

Shimat Joseph, an entomologist on the UGA Griffin campus, says the goal was to allow researchers to identify their specific research and Extension priorities. The grant allowed the group to understand and collate both basic biology/ecology and practical management information on ambrosia beetles, and assess the knowledge gaps guided by the feedback from growers and stakeholders.

“The funding help us come together as a group so that we can prioritize needs and pursue a larger grant to conduct the needed research in a collaborative manner,” said Joseph.

The second grant, valued at \$10,000 from Georgia Farm

Bureau, will fund the survey and monitoring of wood-boring ambrosia beetles in tree nurseries, tree fruit and pecan orchards. The goal of the research is to determine which species of ambrosia beetles are attacking different types of trees in Georgia.

Brett Blaauw, UGA Extension specialist in fruit entomology, will study the beetles throughout the season in fruit orchards to determine which species are common in Georgia and to determine whether they pose a threat to trees.

While the researchers began working on this project this year, most of the research will be conducted next year. The third grant, \$73,000 from the Georgia Department of Agriculture, will fund projects aimed at improving monitoring tools and finding management strategies for ambrosia beetles in tree nurseries and tree fruit and pecan orchards. This grant will allow UGA research entomologists to trap ambrosia beetles in nursery and orchard systems.

“Part of our project is contingent on the growers and the attacks that they will be reporting to us,” said **Angelita Acebes-Doria**, an entomologist on the UGA Tifton campus. “Whenever we receive reports of growers having problems with ambrosia beetles we want to know to what extent the trees are being attacked and to verify the ambrosia beetle species responsible for the attacks.”

If the ambrosia beetles are found to have damaged infested trees too severely, with the grower’s permission, the researchers will dissect the trees to determine the species attacking the trees and compare them to the species captured in the traps. The grant will fund materials required in the season-long trapping, including ethanol lures and bottle traps, as well as funding student research assistants.

“Without these grants we would not have been able to complete the research,” said Blaauw. “I am grateful that agencies like the Georgia Farm Bureau and Georgia Department of Agriculture have grants that help support research projects like ours.”

Ambrosia beetles are insects that burrow holes in the trunks of ornamental, fruit and nut trees that are under stress. Their attacks are normally associated with young trees that are not well established or trees subjected to flood conditions and frost damage.

Multiple beetle attacks on a young tree can have detrimental effects on the overall health of the tree and, in extreme cases, can cause tree mortality.

“The higher number of attacks on the trees, the higher the chance that the tree will die. They attack a wide variety of host plants, not just pecans,” Acebes-Doria said. “They can (also) attack nursery trees, ornamental trees, and they can attack tree fruits as well, such as peach and apple.”

By Maria Sellars, CAES News

NEW FACES IN THE DEPARTMENT

The Integrated Pest Management Program recently hired a new communications coordinator, **Emily Cabrera**, to help strengthen the outreach of the program to Extension agents throughout the state. The IPM program is a team of faculty in various fields of structural and landscape pest research, who operate throughout Georgia. IPM research focuses on finding the most sustainable management strategies for addressing insect pests, diseases and weeds using an integrated approach that incorporates cultural practices as well as the judicious use of chemical inputs in conventional and organic production.



Emily earned a Bachelor's of Science in Forest Resources from UGA and then spent several years building a diverse repertoire of agricultural experience - as a technician with the Alaska Department of Fish and Game, as an environmental consultant and then as an assistant manager on an organic produce farm before returning to UGA for her Master's in Agricultural and Environmental Education. After graduation, Emily entered her career in Extension, first as an ANR agent in Fulton county, and most recently as the GA Sustainable Agriculture Research and Education (SARE) program assistant.

Emily's based out of Athens, and IPM outreach will primarily involve writing monthly newsletters, managing social media campaigns, and performing an overhaul of the Integrated Pest Management website to become a platform for uniting the various commodity websites in one place, and improving clarity and usability. Emily is currently working hard to coordinate updates to the annual Pest Management Handbook, which will be available in the new year. The Georgia PMH is highly regarded through the southeast as a resource for pest management strategies, and Emily will be working with a team these next few years to digitize the entire handbook which will allow specialists to update information in real-time and will make the handbook an accessible tool anytime, anywhere. Big things are on the horizon for the IPM Program, and Emily's excited to help foster stronger ties between research and the incredible Extension agents who are 'boots on the ground'. If you'd like Emily to help advertise a workshop or event, or have a story you'd like to submit for the IPM newsletter, email her at ipm@uga.edu or call (706)542-5783.



Another welcome addition to the IPM Program is **Courtney Brissey**, who joined the team to manage the Integrated Pest Management Lab here on the Athens campus. Courtney is a triple dawg, who received her Bachelor's degree in Wildlife, and two Master's degrees, one in Forest Resources, and the other in Entomology - all from the University of Georgia's Warnell School of Forestry and Natural Resources. Her research focused on bark beetles associated with hemlock woolly adelgid infestations and the impacts of silviculture on bark beetle communities in longleaf pine plantations. She also conducted research on sap beetles in fruit orchards, for which she created an identification tool to aid farmers in proper identification and management strategies for controlling sap beetles.

It was through this process of building real-world tools that Courtney understood the importance of outreach in supporting Georgia agriculture. After graduation, Courtney pursued a career in Extension, as the Cobb county ANR agent, to fulfill this desire for bridging the gap between research and the public.

In her current role as lab coordinator, Courtney ensures all lab functions are in constant order for efficiency and meeting deadlines. Currently, Courtney is working on several large research in coordination with team members across the U.S. looking at integrated management solutions for minimizing the impact SWD has on agricultural crop production. She is also working with Dr. Sial to begin working on her PhD in early 2021. "Returning to the Entomology Department is a dream come true. I am thrilled to be a part of such a productive lab, working on research that will have a positive impact on the blueberry farmers here in Georgia."

Elmer Gray wins CAES technical support staff award



Elmer Gray was selected the winner of the 2019 Staff Award for Excellence in the Technical Support category. He was honored at the annual Athens Campus Holiday Luncheon held earlier this month. Gray also received his 20 year service award at the event.

Gray maintains the world's only black fly colony through the operation of the UGA Black Fly Rearing and Bioassay Laboratory where he conducts a variety of research related to black fly biology and control. His duties include assisting and collaborating with faculty, students and industry on research associated with the laboratory and public health. He also serves as the Public Health Extension Entomologist for Georgia, focusing on mosquito control training, education and outreach.

Gray earned his Bachelor of Science in Zoology and Master of Agriculture specializing in Medical and Veterinary Entomology from Clemson University where he also was awarded the Outstanding Classified Employee award in 1997 while employed there. **CONGRATULATIONS ELMER!**

Graduation Snapshots!



Honey Bee car tag sales supports bee programs

By Michele Hatcher

The bees in Georgia are all abuzz.

Cars have been spotted around the state with paintings of bees on their backside. That's right. "Save the Honey Bee" license plate tags can now be purchased in Georgia and that is good news for the bees here in this state.

It was no easy task. But bees know a lot about hard work.

"The idea of the honey bee tag had been tossed around for over a decade among members of the Georgia Beekeepers Association (GBA), but due to the cost and amount of work it would require, the idea was tabled numerous times," explained Jennifer Berry, apiculture research professional and lab manager for the UGA Honey Bee Program.

Finally, a group of enthusiastic members of the GBA decided it was time for Georgia to have a tag dedicated to the "beloved honey bee," Berry said. So the real work began because to get a new license plate in Georgia requires legislative action which can take years.

A couple of GBA members quickly learned the ins and outs of getting a license tag issued including learning legal and legislative processes and understanding laws and procedures. Then, the GBA board had to commit to cover the \$25,000 specialty tag manufacturing fee which was a new state requirement due to dozens of specialty tags not selling well. It was a gamble but the GBA rolled the dice.

The breakeven point for the GBA is selling 1000 tags and this must be done within two years. Only then will the group be reimbursed the \$25,000 (\$25/tag). Once the 1,000 tags are sold, the GBA receives \$22 per tag sold. Tags began selling in June 2019 and to date have sold an astonishing 820 tags. Another unexpected statistic is that 71% of tags sold so far were not purchased from GBA members.

"This is amazing and due to the diligence and hard work of so many folks, social media and the marketing campaign that is still going on today," Berry said, giving credit to the many people working to make this plate a success.

"Another cool tidbit is that no one had ever gotten a license tag bill passed through the state legislature as fast as the GBA did," Berry said, proudly. The first meeting with the Department of Revenue administration was November 17, 2017, House approved February 1, 2018, Senate approved March 21, 2018 and Governor signed into law May 3, 2018. Seems those bees have taught their people a lot about efficient teamwork.

According to the bill signed into law, the funds raised by the sale of this special license plate *shall be dispersed to the GBA and used to increase public awareness of the importance of the conservation of the honey bee. Funds are to be used to support association programs, including but not limited to the training and education of both new and experienced beekeepers, prison beekeeper programs, grants to beekeeping related nonprofit corporations, beekeeping research facilities in this state and projects that encourage public support for the license plate and the activities it funds.*

To purchase a tag, please go to the GBA website www.gabeekeeping.com and follow the instructions.

The official state insect has rallied its humans to get the nitty gritty hard work done and they are just 120 beautiful tags away from the magic number. Now it's up to rest of Georgia to do their part to "Save the Honey Bee."

It's a pretty sweet deal.



Jennifer Berry proudly showing off her BEE052 GA license

Georgia Outdoors films at Insect Zoo



Sharon Collins talks to Nia Myers (above) about her interest in entomology. Below, Jena Johnson and Nia Myers assist the GPB crew with filming insects. Below right, Allison Johnson discusses the different insects housed in the UGA Insect Zoo.

Lights! Camera! . . . And Action!

Sharon Collins, host of Georgia Outdoors, recently filmed in our Insect Zoo and UGA graduate students Nia Myers and Allison Johnson and our insects were the stars of the day. The Georgia Public Broadcasting show is putting together a story about insect decline and interviewed our students and Dr. Joe McHugh about the topic and insects in general and why our students enjoy studying them. The program is slated for airing at the end of January. So stayed tuned . . .



SNAPSHOTS



Undergraduate Student Spotlight



Kelly Tims

When I entered UGA as a freshman, entomology was the last thing on my mind. I came in wanting to do something in the sciences that would help people and of course, thought medical school was my only option. Fortunately, someone back home recommended I take Dr. Guillebeau's First Year Odyssey Seminar (FYOS)- and the rest is history! I quickly started taking more entomology courses as electives and was enthralled with the interesting systems and helpful faculty. Our department has been such an encouragement to me these past four years and has renewed my love for learning and the sciences. By the end of sophomore year, I was fully invested in entomology and added it as a double major.

Between then and now I have had some amazing experiences. I have helped in three Insectivals, volunteered in the community with the Entomology Service Learning class, and traveled to Ecuador with the Entomology Study Abroad program. The service learning class especially piqued my interest in outreach

and teaching; it is so fun to see little kids hold bugs for the first time and ask the most interesting questions, all while their parents squirm in the background. These kids may be future scientists, or even entomologists, thanks to some hands-on learning from the Bug Zoo! The Ecuador trip too, was an incredible experience that allowed me to learn about entomology and other cultures on the global scale. Not only did we learn a lot on that trip and have fun, but I've also made some really good friends because of that class. We still frequently talk about that trip and discuss fun bug stories together. Here you can see me in the forests of Ecuador on one of our late night-lighting adventures. My junior year of college, I began working for the Burke lab, and this experience has also greatly shaped my college memories and future plans. In the fall of that year, I did rearing for the lab and worked to take care of our fly and parasitoid wasp colonies.

Knowledge of our wasps' life cycle came in handy when, in the spring, I began undergraduate research in the Burke Lab with funding from CURO and CAES. My project focused on the function of a specific gene within the wasp and its role in viral regulation. I am currently working as an undergraduate researcher in the lab and am still loving it and learning so much! Lab meetings and collaborating with lab mates have become one of my favorite college memories. In fact, I love working at the Burke Lab so much that I plan on pursuing a PhD here after I graduate in the spring! This fall, as a senior, I am busy applying for graduate school, writing a GRFP proposal, and finishing up classes. Outside of the entomology world, I serve as president of RUF, my campus ministry, and as an Ambassador for the College of Agricultural and Environmental Sciences. I enjoy hiking, reading, going thrifting with my roommates, and cheering on the Dawgs in my spare time.

I am graduating with degrees in Entomology and Biological Science in spring 2020 and will always cherish my time as an undergrad at UGA, but look forward to all that life as a graduate student has to offer. Thank you for reading along and for cheering me on as a student in our department!



Dilani Patel

During elementary and middle school, science lab experiments were my favorite times. During high school, my environmental science class introduced and made me interested in animal research. In high school, I participated in summer genetics-based research programs at the University of Alabama at Birmingham (UAB) and realized that I wanted to pursue research. During my sophomore year at UAB, I joined Dr. Danial Warner's herpetology lab as a student worker. I worked on the husbandry and morphological data collection with brown and green anole lizards. During my junior year, I joined Dr. Thane Wibbels sea turtle research lab. For my senior project, I worked on a project about salinity acclimation in captivity on the morphology and growth of endangered salt-marsh diamondback terrapin hatchlings. During the summer before senior year, I participated in a summer research internship called BEE-Inspired at Georgia Tech. Even though the program was about honeybees, I did a dominance behavioral research project on African elephants in captivity at the Atlanta Zoo. Although I did not do research about honeybees, this program sparked my interest in entomology-based research through the beekeeping experiences and my interest in agricultural outreach through the service learning events at local Atlanta community farms.

Currently, I am a PhD student in Dr. Ashfaq Ahmad Sial's blueberry lab and Dr. Brett Blaauw's peach lab. My project is focused on the population distribution and the biological control of brown marmorated stink bugs (*Halyomorpha halys*) also known as BMSB. I monitor this invasive stinkbug and native stinkbug populations using pheromone-baited pyramid traps and sticky card traps throughout the growing and harvest seasons. I monitor apple orchards and vineyards in North Georgia counties and blueberry and local vegetable farms around Athens. I also monitor the diversity and attack rates of BMSB parasitoids and predators on natural-laid and sentinel egg masses in different crop systems and different farming practices throughout the growing and harvest seasons. As a result of being part of these two labs, I have been able to work with a variety of different fruit pests using different monitoring techniques in apple, wine grape, peach, and blueberry systems. I would like to work for the government or universities as a research entomologist in integrated pest management and biological control.

I really enjoy participating in outreach programs like Insectival and Tarantula-5k. It was through these outreach events that got me interested in eating insects, Lund Club, and educational outreach to children. Outside of work, I like to read comic books and collecting insect-themed items.



Ben Aigner

My first memories of insects are watching carpenter ants attempt to crawl through antlion pits in my back yard as a child, on the Eastern Shore of Virginia, where I grew up. Curious to what resided in these inverted cone-shaped depressions in the sand, I remember digging up antlion larvae and being fascinated by the traps these creatures had created to capture their prey. Approaching my graduation from high school I had few plans for what I wanted to do with the next phase of my life, but had always had an aptitude for science, particularly biology. My oldest brother, John, at the time was working at the Virginia Tech Agricultural Research Extension Center in Painter, Virginia with the entomology department and encouraged me to apply for a job. That summer, I began working with Dr. Tom Kuhar as a field research assistant helping with treatment efficacy trials as well as trapping and monitoring of a number of vegetable insect pests. Through the mentorship of my brother and Dr. Kuhar, I grew fond of applied entomology and have remained in the field for many years.

As I completed my associate's degree at the local Eastern Shore of Virginia Community College, I continued to work with Dr. Kuhar's lab. I then transferred to Virginia Tech to study for a B.A. in geography with some biology courses interspersed in my coursework. After graduating and trying my hand at a desk job, I quickly found myself yearning to be in the field again, counting insects and assessing crops for insect injury. Again, I received a phone call from my brother telling me that an opportunity for a master's degree in entomology had become available, encouraged me to apply and, again, I received the job! This time, under the direction of Dr. Ames Herbert, Dr. Carlyle Brewster and Dr. Kuhar, I began a research project studying sampling methods and field migration patterns of brown marmorated stink bugs in mid-Atlantic soybean systems.

At the International Congress of Entomology in Orlando in 2016, I crossed paths with Dr. Mark Abney who shared a challenging but very interesting research project that fit my set of skills



quite well. After touring the entomology department at UGA in Athens and Tifton and strong consideration, I decided that I would pursue a PhD with Dr. Abney. My current research project goals are to determine the driving factors of peanut burrower bug distribution, create a model to predict risk, and study the developmental biology and chemical ecology of the pest to help provide management solutions for Georgia peanut farmers.

In the future I would like to work in industry, agricultural consulting, or government. I have recently been acquiring some teaching experience and would also be open to academia if the right opportunity presented itself. In other words, I am open to a variety of career paths and can see myself finding enjoyment in any of the aforementioned areas.

I come from a large family with four older sisters and two older brothers, most of them with children of their own (five nieces and four nephews). I love spending time with my family, my cat Mau-Mau, and traveling to see new places with Grace, my best friend and partner in life. In my free time, I enjoy riding my bike, skateboarding, and hiking to stay active. Also, being an avid foodie I love to cook, eat delicious food, and have been trying pick up an old hobby again in playing piano.



Bethany Harris on Butterfly Wings

Bethany Harris, MS - Entomology '15, PhD – Horticulture, '18, has found the perfect job using both her entomology and horticulture education from CAES. As assistant director of education at Callaway, Harris works out in the field, overseeing the butterfly center and edu-

ational gardens, managing more than 200 volunteers and teaching workshops for the public.

“My degrees exposed me to working with pollinators and butterflies, so this job is a perfect fit for me,” said Harris. “In addition to the butterfly center, we have an outdoor butterfly garden and my research at UGA centered around native pollinators and butterflies.”

Harris said she hopes to reestablish an insect zoo at Callaway Gardens and she’s working with her UGA colleagues in the Department of Entomology to make that a reality. She also plans to establish a honey bee colony at Callaway with the help of a volunteer beekeeper.

Entomology grad puts the ‘art’ in arthropod

During her undergraduate years, Linden Pederson (BSES – Entomology, '19) was dedicated to helping others appreciate the beauty of insects. She spent hours drawing insects or introducing the public to live insects as part of the University of Georgia Bug Dawgs Insect Zoo, but her senior project dwarfs those efforts.

In fact, it’s huge.

As her final project Pederson, who graduated from UGA in May with degrees in both entomology and scientific illustration, built a 25x scale model of a female *Megalodacne heros* beetle. She spent more than 300 hours digitally sculpting each detail of *Megalodacne heros* in ZBrush 3D modeling software using specimens from the Georgia Museum of Natural History and printing pieces of her beetle on a 3D printer.

It then took Pederson an additional 40 hours to assemble, paint and add the finishing touches to the model, which Pederson named “Athena.”

“Linden was so observant in her studies of actual specimens that her beetle model includes minute details like individual secretory pores and patches of tiny setae (hairs) on particular segments of the mouthparts,” said Joe McHugh, curator of arthropods at the Georgia Museum of Natural History. “Linden’s beetle is so good, it could be correctly identified to species and sex from halfway down the hallway.”

For those who want to test their insect ID skills, the model is now on display in a case outside of the entomology department’s administrative offices in the Biological Sciences Building on UGA’s Athens campus.

Pederson spent her post-graduation summer in an internship at the Smithsonian Institute in Washington D.C., and is now pursuing her master’s degree in medical illustration at Augusta University in Augusta, Georgia.

By Merritt Melancon



Hexapod Herald Subscriptions

Editor Michele Hatcher

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. Due to printing & mailing costs, a limited number of hard copies will be produced & mailed. Electronic subscription is preferred.

To subscribe to the Hexapod Herald, contact us



Write to Hexapod Herald,
413 Biological Sciences
Bldg, UGA Campus,
Athens, GA 30602 or



send e-mail to
entodept@uga.edu



Or Call 706-542-2816.



MAKE PLANS NOW!

To join your Southeastern and Eastern branch colleagues in Atlanta **March 29 through April 1** for the 2020 Entomological Society of America's annual branch meeting!

For more information go to:
<https://www.entsoc.org/2020-joint-eastern-southeastern-branch-meeting>

Scholarship awards

Lund and Ross families honor outstanding graduate students



Students selected for scholarships pictured above are (left to right) Clesson Higashi, Conor Fair, Kelsey Coffman, Allison Johnson, Ruby Harrison and Sam Arsenault. Not pictured is Emilee Poole and Carson Bowers.

The Department of Entomology at The University of Georgia is pleased to congratulate eight graduate students for being awarded scholarships made possible through generous donors.

H.O. Lund Scholars named are Allison Johnson, PhD student; Sam Arsenault, PhD student; Ruby Harrison, PhD student; and Clesson Higashi, PhD student.

Herbert H. Ross Memorial Scholars are Kelsey Coffman, PhD student;

Conor Fair, PhD student; Carson Bowers, Masters student; and Emilee Poole, PhD student.

These students were selected by faculty committee and the department plans to continue scholarships at the same level going forward in the future, said Dr. Kris Braman, UGA entomology department head.

"We appreciate the donors and their families for making these student scholarship enhancements possible," Braman said.

Calendar Reminders

December 13— Undergraduate Commencement 9:30 am; Graduate Commencement 2:30 pm

December 25-31— UGA Holiday for faculty, staff and students

January 1 — UGA Holiday

January 20 — UGA Holiday

March 9-10 — Faculty Retreat, Rock Eagle

March 9-13 — Spring Break. No classes. Offices open.

March 29-April 1 — SEB ESA Meeting, Atlanta, GA

May 7 — CAES Convocation, 5-7 pm, The Classic Center, Athens, GA

We don't mean to bug you but . . .



Your investment in our entomology program helps assure our continued student recruitment success. No gift is too small. Your support is just the means needed to help our students spread their wings and fly!

The Donate button to the left may be used to donate online or, if you prefer, checks may be made payable to the "UGA Foundation" and should be sent to UGA CAES Office of External Relations, 117 Four Towers, Athens, GA 30602-7072. Please indicate the program area or fund you wish to support.

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.



A Thankful and Happy UGA Entomology wishes you a joyous holiday season!