



HEXAPOD HERALD

Summer 2019

Students Conduct Sapelo Island Survey

By Michele Hatcher

It was one of the hottest weeks in May on record.

But the impending heat and humidity did not dampen the spirits of the Lund Club members embarking on the annual field trip to Sapelo Island to conduct a diversity survey of Odonata, nets in hand as they combed the island for four days for insects.

“For me, the Sapelo Island trip provides an irreplaceable opportunity to reground myself in fieldwork after long periods of writing and computational analysis.

When working in a lab environment, it’s easy to lose track of how amazing the insects we study are and there is no place better than Sapelo to remind us of that fact,” said Sam Arsenault, PhD student and returning field trip student, about the yearly trek to the Georgia island.

Despite the scorching temperatures during their stay, the group added about 50 new odonate observations, including the first records of two species for the island, said Dr. Joe McHugh, who led the group for the third time in four years. The Dragons and Damsels of Sapelo Project



Jamal Hunter

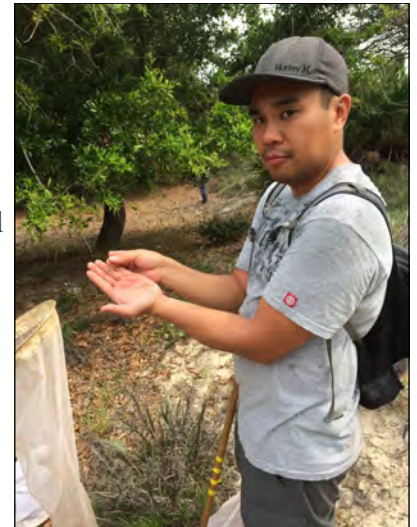
was started by the H.O. Lund Entomology Club at the University of Georgia. The goal of the project is to foster a better understanding of the diversity and biology of Odonata on Sapelo Island in McIntosh County, Georgia. The hope is that the project will encourage others to better appreciate these fascinating insects. The project is visible online through iNaturalist at <https://www.inaturalist.org/projects/dragons-and-damsels-of-sapelo>.

This year’s memorable trip was partially supported by the UGA Department of Entomology, an Eterna grant from the CAES Alumni Foundation and a donation from alumnus Erich Tilgner.

It may be hot, but the timing for students is perfect. “As soon as the spring semester winds down, especially after Lund Week, I

think many of us look forward to the survey trip on Sapelo Island. The trip is a great avenue for fellow graduate students to bond while geeking over bugs,” said Clesson Higashi, PhD student. “Each trip brings a new crew, new bugs and new stories to share. Sapelo never disappoints,” he said.

Photos by Dr. Joe McHugh



Clesson Higashi



Gabriela Cardona-Rivera and Nia Myers

From the desk of S. Kristine Braman ...

From the research fields across Georgia to the halls at home base here in Athens, what a busy summer we have had here in the Entomology Department at UGA! Hope you enjoy the shots of field work in action throughout the newsletter. One particular highlight for me was to see the first ever **Georgia Pollinator Census** successfully conducted. A project conceived of and developed by **Becky Griffin** MPPPM, CES State School and Community Garden Coordinator and Pollinator Health Associate, that has been three years in the planning. Numerous partners led by Becky and facilitated by the Center for Urban Agriculture realized an astonishing 4,000 + participants in this citizen science project, including former President and Mrs. Jimmy



Carter. We look forward to the days ahead and distilling all this baseline data.

The **Dragons and Damsels of Sapelo** project moved further ahead this summer and is featured in this issue. I hope you will check that web site out. I am very appreciative of **Dr. Joe**

McHugh's leadership and all the student and Lund Club contributions to this project. We are also most appreciative of **Jena Johnson** and our students' efforts to update our insect zoo. The re-



cent **Insect Zoo Open House** was a wonderful opportunity for everyone to see what is going on at the zoo and what is available for classroom and outreach.



I am very pleased to welcome our new faculty, staff and students to UGA Entomology. The **Bill Snyder lab** is up and running. Great to have you all on board **Bill, Lucas, Amanda, Michael and Joseph. Emily Cabrera** joins our department as a communications specialist working with our IPM programs under Ash Sibal's direction. She will be coordinating and communicating many aspects of our interdisciplinary IPM programs and we look forward to the leadership and creativity that she brings to the position. Sometimes we are privileged to welcome back former members of our department. **Courtney Brissey** who earned her MS in the McHugh lab in 2017 will assume a new role in our department as a Research Professional in the blueberry entomology lab. Welcome home Courtney!



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BILL SNYDER LAB



Dr. Bill Snyder, Joseph Taylor — PhD student, Dr. Michael Crossley — Post Doctoral Associate, Lucas Michelotti — Lab Manager, Dr. Amanda Meier — Post Doctoral Associate

It's a long haul from Washington State University to UGA but Dr. Bill Snyder packed up his lab and his family and headed east to Athens where he now makes his home base for his comprehensive agroecology research. Out west, Snyder focused on the value of on-farm biodiversity for natural pest control. Intensified, modern farming methods often lead to very large fields of single crops because of the efficiency of production at that scale. However, removing natural habitats and simplifying the range of plant species grown can make it difficult for beneficial pollinators, predatory insects, soil bacteria and other helpful species to survive. As part of his research efforts, Bill looks for ways to return beneficial biodiversity to farms to restore valuable "ecosystem services," while maintaining farm productivity and profitability. Snyder and his research group are looking forward to the wide diversity of soils, climates and cropping systems in the southeastern U. S. The lab is particularly excited about a few research directions including a new interest in the ecology of food safety on the farm. In the Pacific Northwest, they found that dung beetles and antagonistic soil microbes effectively suppress pathogenic *E. coli* that otherwise can contaminate fresh produce. Recent work is beginning to suggest that wild songbirds, sometimes viewed as vectors of human pathogens best excluded from farms, instead eat many pest insects while posing few food-safety risks. Snyder is planning to pursue similar food safety work in the Southeast, alongside research looking at how beneficial bacteria and fungi in the soil allow crop plants to protect themselves against plant-feeding insects and attract predatory insects to their defense. So Bill, Joseph, Michael, Lucas and Amanda -- The UGA Entomology family is thrilled to say "Welcome Home!"

Great Georgia Pollinator Census

Becky Griffin has been planning the first Great Georgia Pollinator Census for over three years. And the buzz around the state is it was a phenomenal success!

“It was an honor to lead the project and so very exciting to see Georgians from across the state get excited to count insects,” Griffin said about the culmination of her project.

Citizen scientists from across the state sat still for just 15 minutes and counted the number of bees, wasps, flies, butterflies/moths, and other insects seen on a particular plant selected by them personally. This voluntary count was conducted during the days of August 23-24.

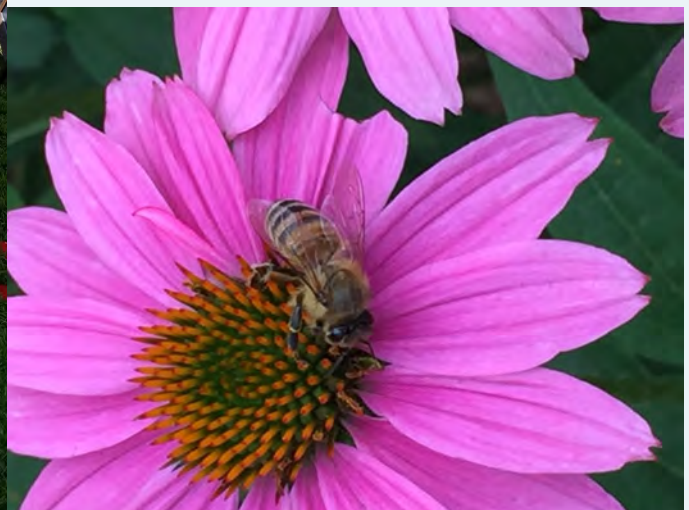
The purpose of the inaugural pollinator census was to create sustainable pollinator habitats, to increase the entomological literacy of Georgians



and to capture a snapshot of our pollinator populations.

And Griffin is pretty sure she will get a great snapshot from the more than 4,000 census reports that have been uploaded.

“It is wonderful to hear participants say they never realized the numbers and diversity of insects in their gardens. And, seeing photos of school children getting excited about bees and wasps was wonderful,” she said.



Suiter Center for Urban Agriculture Chair

By Sharon Dowdy

Dr. Dan Suiter, UGA entomology professor, has been selected as the Chair of the UGA Center for Urban Agriculture Faculty Advisory Committee.

Suiter's appointment will enhance the programming aspect of the center, according to Laura Perry Johnson, associate dean for UGA Cooperative Extension in the College of Agricultural and Environmental Sciences. Suiter will work closely with center Director Sheldon Hammond, who will continue to oversee the business and personnel administration functions of the center.

Based on the UGA Griffin campus, the Center for Urban Agriculture supports UGA Extension's urban programs by providing county agent training programs, tools and resources; communicating the latest research-based urban agriculture advice through newsletters, articles, alerts, publications, videos and social media; organizing new initiatives; collaborating on interdisciplinary projects and research; advancing and updating current program training materials; and administering multiyear programs and projects.

"Our state continues to have population growth and most of that is in the nine largest counties in Georgia. Issues and problems associated with this urban growth come in many forms and across many disciplines and departments," Perry Johnson said. "Dan will work to build diverse teams around urban issues and coordinate programming efforts related to urban programs and projects."



From the Field . . .



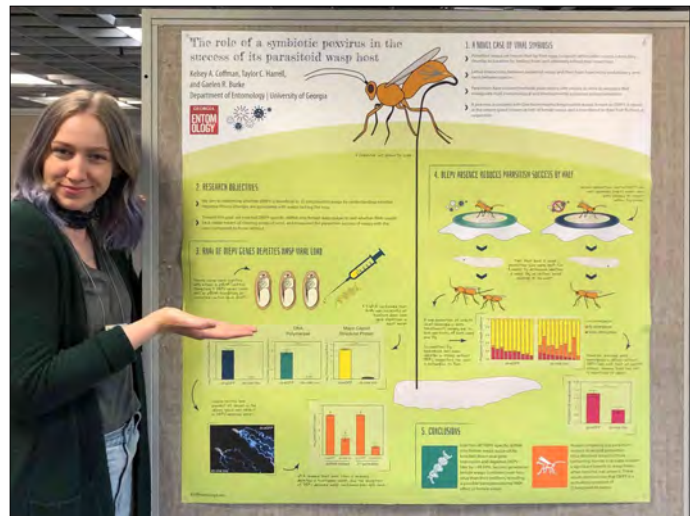
Johnson wins Osmun Scholarship



The \$3000 Osmun Scholarship was awarded to Allison Johnson, second year Ph.D. student in the Household and Structural Entomology Research program at UGA. Allison's dissertation involves examining 4,500 samples of termites collected from each of the 159 counties in Georgia and identifying all collections to species using published taxonomic keys, genetic sequence data and Geographic Information Systems (GIS) technology on the 1,100 collection locales. The results will provide information on the utility of identifying termite species using morphological characters compared to genetic markers, evolution of subterranean termites in the southeastern USA and distribution of termites across a broad geographic area associated with land use patterns. This will provide baseline data needed to develop verified IPM approaches for termites rather than relying on a zero-tolerance action threshold.

Coffman wins Best Poster Award at Conference

Kelsey Coffman recently won a Best Poster Award at the 2019 Gordon Research Conference on Animal-Microbe Symbioses in West Dover, Vermont. Kelsey's poster titled, "The role of a symbiotic poxvirus in the success of its parasitoid wasp host" was selected from over 150 posters presented at the conference. She also received a cash prize of \$500. Dustin Dial also presented a poster at the conference titled, "Differential division of labor in the ancient symbionts of sap-sucking insects (Sternorrhyncha: Adelgidae)." Both Kelsey and Dustin are PhD students in Dr. Gaelen Burke's lab. Kelsey felt honored to be recognized by such an impressive and welcoming community of scientists.



"The conference was a fantastic opportunity for me to present my work and hear about inspiring new research in the field of animal-microbe symbioses. It was also a small and intimate meeting, so the number of connections I made was far greater than other conferences I've been to in the past," Kelsey said of her conference experience.

PhD Student Spotlight



Nia Myers

As a child, I was always fascinated by insects. I remember at one point I would only check out insect books from the library. However, I didn't know much about the field of entomology until midway through my undergraduate career at Valdosta State University, when I started working in a mosquito lab. I worked under Dr. Mark Blackmore, who conducted a mosquito surveillance program with state and local governments to monitor mosquito populations that vector arthropod-borne viruses, such as West Nile Virus and Eastern Equine Encephalitis. Through this experience and taking Dr. Blackmore's medical/veterinary entomology class, I decided that the bug life was the one for me!

Currently, I am a second-year PhD student in Dr. Kevin Vogel's lab, studying mosquito endocrinology. My project is focused on characterizing the function of a peptide hormone and its G-protein coupled receptor, which are likely involved in regulating reproduction in female mosquitoes. In my research, I use molecular and proteomic techniques, along with bioassays to determine where and when the peptide and its receptor are expressed, how the peptide interacts with its receptor, and how this peptide is involved in regulating mosquito reproduction. By using these techniques to localize the activity of this peptide hormone and its receptor, we can better understand its function and possibly help develop new mosquito control strategies. After graduating, I would like to work for the government as a research entomologist in public health or epidemiology.

Outside of academics, I have had a lot of fun with planning and attending outreach events with the UGA H.O. Lund Entomology Club and will serve as the president for the 2019-2020 academic year. I especially enjoy the outreach events with children because of their excitement to learn about insects. Maybe it's nostalgia, but I think it is so important for them to know that there are a lot of amazing careers in the field of entomology that they can pursue. Additional hobbies of mine are trying new restaurants in Athens with my husband, fishing, hiking while (obviously) foraging for insects, attempting at DIY crafting projects on Pinterest, hanging out with my friends in the department, and playing with my two kitties, Milo and Skai!



Emilee Poole

In fourth grade, I got a little plastic microscope in a science kit for Christmas, and by 7th grade, I was telling people I wanted to be an environmental scientist. I stuck with environmental science and finished my undergraduate degree at the UGA campus in Griffin. While on campus, I desperately needed a summer job. Dr. Wayne Gardner (aka Mr. Wayne) found some openings on campus, and it was possible for me to split my time between Dr. David Buntin in entomology and Dr. Bodie Pennisi and her PhD student in horticulture. I ended up loving the work I did with both departments. After two field seasons I had maintained my own research project looking at commercially-available insect nesting boxes and helped with projects investigating Hessian fly occurrence and damage in wheat, corn earworm in Bt corn, sugarcane aphids on sorghum, and pheromone trapping of brown marmorated stink bugs at the research farms. I also assisted with projects focusing on pollinator abundance and diversity on native mountain mint, and numerous projects relating to lantana's growth response to



soil amendments, fertilizers, irrigation schedules, microbial soil additives, and biodegradable plant pots.

As graduation was approaching, I knew I was interested in pursuing a career in research, so I reached out to Dr. Darold Batzer, since I was enjoying wetland research I was helping with as a volunteer. Shortly after I met with Dr. Batzer and Dr. Mike Ulyshen with the Forest Service, I moved to Athens and started my work in the Ulyshen lab in 2017.

I'm currently investigating the insects associated with sugarberry mortality in the southeast, and we're now heavily focusing on an aphid from Asia that has been long overlooked as a potential cause of mortality. If the aphid is not the primary factor, we hope we will be able to identify its role in the declining tree health and determine a way to prevent additional tree loss. I have thoroughly enjoyed learning about forest health issues and hope to pursue a PhD after I complete my degree.

When I'm not working on campus or out at my sugarberry trees, I enjoy dancing with a company at DanceFX, hiking with my dog Freckles, and working with a princess and character company for events and volunteer work with kids.

Undergraduate Student Highlight

Sierra Hale

I've loved insects for as long as I can remember; when I was little, I'd spend countless hours outside looking for and playing with them. I have always had the desire to be an entomologist. In elementary school, I was keen on picking entomology for an "Ology fair" I participated in, and later on in high school I made an insect collection for a project in one of my classes. Despite my long-term and constant love for entomology, I chose ecology as my major when I applied to UGA.

After I graduated high school in 2016, the summer went by and the first class I ever set foot in at UGA was the ENTO 2010 class, taught by Dr. Karl Espelie. After taking it, I knew I had no choice but to change my major to the subject that I had loved for my entire life. Even though I wasn't sure what I wanted to do with it, I knew it was the right decision for me.

In order to discover what I wanted to do career-wise, I thought it would be beneficial for me to try to get various types of jobs within the entomology department here. My first job here was working for the Georgia Museum of Natural History with Dr. Joe McHugh and Rick Hoebeke, where I helped catalog and organize the museum specimens. I really enjoyed working there, and I learned lots of useful skills and techniques. My next job was working with Dr. All and Dean Kemp in the greenhouses, where we tested and measured crop resistance to various pests. While working with them, I decided to add a crop science minor to my degree because I really enjoyed the work we were doing. This ultimately caused me to want to find a career in agriculture, where I would ideally be working with and researching crop-insect interactions.

Currently, I am working in the Fire Ant Genetics and Social Biology Lab with Dr. Kenneth Ross. I have worked here for about a year and a half now, and I love it. Towards the end of summer 2018, Dr. Ross asked me to stay in the lab to pursue my master's degree through the Double Dawgs program, and of course I happily accepted. I will be graduating with my undergraduate degree in

entomology (with a minor in crop science) this fall (2019) and then will start my full-time graduate work in the spring. I'm thrilled to have this opportunity and I can't wait to see where it takes me!

Aside from entomology, I love animals, painting, drawing, running, hiking, kayaking, etc. I have trained one guide dog who went on to becoming an EDC (explosives detection canine) and she is currently working in Chicago. Now, I have my own dog named Luna, who I love to play and run with. I love painting nature scenes and animals, as well as drawing them. Just like when I was younger, I love being outside and exploring the world around me and seeing the amazing things it has to offer.

I am really thankful for all of the opportunities I have had during my time here at UGA, as well as for my family for being endlessly supportive of me. I know that once it's my time to leave UGA, I will be prepared to be successful in my future endeavors.



SNAPSHOTS



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Or Call 706-542-2816.

The hum of bees is the voice of the garden.— Elizabeth Lawrence



Carissa Gilliland and Kelsey Coffman collect insects during the Lund Club Sapelo Field Trip this summer.

Student Research and Outreach Awards Announced

Two masters students and two PhD students were honored with awards for outstanding achievement in research and in outreach activities. The awards were presented by Dr. Mark Brown at the Lund Club welcome back party held each year at the home of Dr. Robert Matthews. Winners of the Ross Award for Outstanding Achievement in Research were Emilee Poole, Masters; and Ruby Harrison, PhD. Winners of the Sparks Award for Outstanding Achievement in Outreach were Alan Bosworth, Masters; and Conor Fair, PhD. (*Conor Fair and Alan Bosworth pictured below*)



You will be missed



We were greatly saddened by the loss of our friend and colleague, Marianne Shockley, this summer. Her many contributions during her career were recognized by the Governing Board of the Entomological Society of America.

Robert Peterson, President of ESA, articulated very well what we all felt:

“I wanted to let you know that the Gov-

erning Board late last month approved the donation by ESA to the Chrysalis Fund in honor of Dr. Marianne Shockley. The name ‘Chrysalis Fund’ is the new way that our entomological community will support outreach and education as the Entomological Foundation continues to wind down. The name of the fund was chosen to highlight its purpose, which is to grow our profession and encourage the next generation of entomologists.

As you know, Marianne was an extraordinary individual who devoted so much time to entomology education, outreach, and advocacy — especially through the Entomological Foundation and ESA’s Education and Outreach Committee. So, we felt it was appropriate to recognize her in this way,”

Very much appreciated and how appropriate to recognize “Mariposa” as she was known to her family and friends.

You will be missed.

Calendar Reminders

September 2 — Labor Day — UGA Holiday

September 28 — Insectivall, Botanical Gardens

November 12 — D.W. Brooks Lecture and Awards, UGA Georgia Center

November 17-20 — ESA St. Louis



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Entomology students share a sweeping view from Sapelo Island