



## Classrooms empty but education continues

*By Michele Hatcher*

Quiet hallways, dark, silent classrooms. It is not how it should be in the spring on the fourth floor of the Biological Sciences Building of the University of Georgia. The obvious evidence of learning is missing.

An unexpected visitor came calling, its name Covid 19, and this invisible and unwelcome intruder turned the process of educating future scientists into a true and sudden challenge. Two weeks faculty were told. Two weeks to get your traditional hands-on, in-person classes transitioned to an effective online platform.

Two weeks? No problem. Entomology faculty and teaching assistants got to business, worked together and with talented IT support were ready to go in April when UGA went live and fully online for students who were now receiving their education “virtually” for the remainder of the semester while sheltering at home.

The evidence of learning is more subtle but it is thriving throughout the country through thousands of screens.

Dr. Kerry Oliver teaches General Entomology and his primary objective for the remainder of the semester is “to meet student needs in these strange times and survive the transition with integrity.”

A class of primarily in-person lectures, Oliver retained his detailed PowerPoints but added recorded Kaltura videos of his PowerPoint lectures to create asynchronous content to be viewed anytime by students.

“Instead of in-class questions and discussions, I use the discussion board on eLC,” he explained. However, this platform is not without its shortcomings. “The biggest challenge is that you cannot see where students are struggling so I am unable to make real-time course corrections to better meet students needs,” he said. “I let them know constantly to get in touch if struggling with anything or for any reason.”

But perhaps the biggest challenge faced has been the transition for the laboratory classes to the on-line platform. Clesson Higashi, PhD student and teaching assistant for general entomology lab, has been forced to make adjustments to the normal lab schedule including cancelling a class collection trip.

“Having to make changes in the middle of the semester has been troublesome for insect collections. Under normal circumstances, students would curate a physical insect collection to be turned in by the end of the semester, however, because of several reasons, we have changed their collection requirement to a virtual one,” Higashi said, explaining the changes.

The changes were required since students no longer have access to materials needed to curate their collections, no face-to-face help with identification and restrictions coming to campus. Students will now curate a collection based on photographs of their insects and organize them on PowerPoint.

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## From the desk of S. Kristine Braman ...

We hold our annual Faculty Retreat each year the first two days of Spring Break week. A four year rotating location scheme (Tifton Campus, Griffin Campus, Athens Campus, location offsite ) had us gathered at the Rock Eagle 4-H Center (<https://georgia4h.org/4-h-centers/rock-eagle-4-h-centers/>). The facility located north of Eatonton, Georgia, adjacent to the Oconee



National Forest boasts nearly 1,500 acres of forested land, including a 110 acre lake and is a natural meeting site away from everyday life.

We appreciated being able to conduct the regular business of reviews and faculty votes in a setting also conducive to brainstorming and refining our collective vision for the Department of Entomology at the University of Georgia. The onsite staff took exceptionally good care of us. Little did we know at the time that we would be returning to all

the challenges of COVID-19 for our students, staff and faculty and the broader community. The department's response has reinforced my appreciation for our work "family" as everyone pulled together to move all instruction to the online format and adjust to a remote

work mandate in a remarkably short



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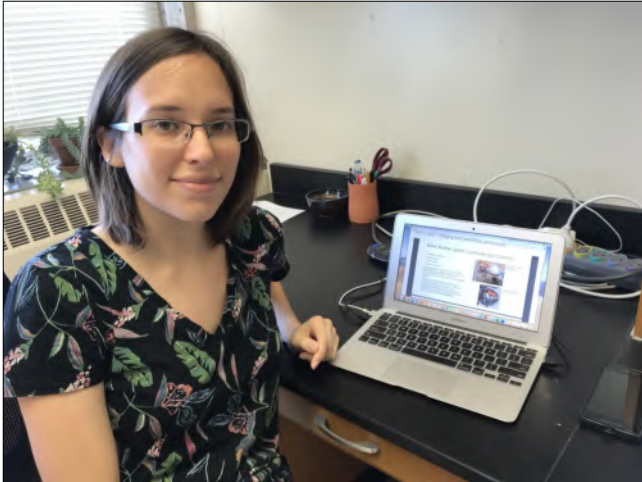
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period of time. We are a creative, collaborative and resilient team and I have been proud of your efforts and accomplishments. I have been labeled an 'eternal optimist' and I must admit its justified. As such, I anticipate that we will come back much more IT savvy with new ideas to develop and improve all aspects of our work addressing our tripartite mission. Yes, there will be challenges ahead that we will meet as we do what we do best as stated in our UGA motto "to teach, to serve, and to

inquire into the nature of things" as we continue to serve our state and the broader community.



Teaching Assistant Ruby Harrison shows a slide she uses for her medical entomology online lab

Ruby Harrison, PhD student and teaching assistant for Medical Entomology who teaches the lab portion, had to give the second half of the course a major overhaul. Students in her lab would be required to identify insects down to the genus or species level, which is very difficult and often requires a compound microscope — not something most students have at home

“I rewrote the syllabus with weekly assignments that went more in-depth into vector arthropod life history, life cycles, and phylogeny/evolutionary relationships. I also gave my students an additional extra credit opportunity – a project to create a public health, CDC-style fact sheet or pamphlet on a vector arthropod endemic to Georgia,” Harrison said.

The efforts of the faculty and teaching assistants have not gone unnoticed by students.

Emma Grace Crumbley, Junior entomology and applied biotechnology major, is a student in both general entomology and medical entomology classes and the corresponding labs. Initially, she was a bit overwhelmed wondering how she would get everything done.

“The Entomology professors and the TA’s have been so great, so accommodating, throughout this whole process. They have been responsive and helpful,” she said.

“But I can’t wait to get back in the class,” she added.

And faculty would agree with you Emma Grace.

Dr. Nancy Hinkle is one of three faculty who share teaching responsibilities for Medical Entomology and she is doing her part uploading PowerPoints, responding to students, and giving tests.

“I particularly miss the feedback of student expressions; part of the joy of lecturing is seeing a face light up when they get the point,” Hinkle said about missing the students.

“And, of course, I won’t deny the gratification when they laugh at one of my jokes!”

## NEW FACE IN THE DEPARTMENT



**Gabrielle LaTora** holds a B.S. in biology from Virginia Commonwealth University and a M.S. in entomology and nematology from University of Florida. At UF, Gabrielle worked with Oscar Liburd in the Small Fruit and Vegetable Integrated Pest Management Lab. Her thesis research evaluated innovative management strategies for spotted-wing drosophila, an invasive pest of berry crops. She graduated in December 2019. Gabrielle has also worked in restaurants and on farms, where she discovered an interest in diversified farming systems. As an intern at Archbold Biological Station in Venus, FL, she helped digitize the station’s unique and historic insect collection.

This year, Gabrielle and her partner Jakrit moved to Atlanta, where he is pursuing a career in film and TV production. Gabrielle is continuing to work in agricultural entomology as a research professional in the University of Georgia Department of Entomology. **Working with Babu Srinivasan on the Griffin campus**, Gabrielle will facilitate research with crop viruses and their insect vectors. She hopes to become an agent in the UGA Extension system, where she can translate new science and develop IPM solutions with Georgia growers.

Gabrielle is an enthusiastic birder, home chef, and enjoyer of Jean-Claude Van Damme movies. She is passionate about CSA (community-supported agriculture) programs and increasing access to fresh food in Atlanta communities. Welcome to UGA Entomology Gabrielle!



## Undergraduate Student Spotlight

### Parker Jamieson

When I decided to leave California to attend the University of Georgia, the first thing that was on my mind wasn't to figure out what my major should be, but rather how in the world I would manage to survive at my new home on the other side of the country. I knew that I wanted to pursue a major in the science department, but figuring out which one specifically would take some time. To help me adjust to living in the South, I was lucky enough to be a member of the Redcoat Marching Band. Being in Redcoats helped me solve two problems at once, having a welcoming family made up of 400 of my closest friends and to introduce and finalize my major as Applied Biotechnology. Choosing to pursue an Applied Biotechnology major helped surround me with supportive and welcoming faculty, such as Dr. Marianne Shockley and Devin Duggan, who both provided me with the resources to succeed and enjoy my time at the University of Georgia.



Like most optimistic freshmen, I was enthusiastic on trying to make it into a medical school, especially since I thought this was my only realistic option with a science major. It wasn't until August of 2018 where my career pathway branched off in a different direction and where I concluded that I would pursue a Ph.D. in Virology. This decision came to be when I was welcomed into the lab run by Dr. Ted Ross at the Center for Vaccines and Immunology to study H2 Influenza with Beau Reneer.



Working at the CVI allowed me to see how science in a research laboratory can help make a positive impact on human lives and how the field of Biotechnology is always evolving. This experience granted me opportunities to perform my own research under CURO, earn a student employee of the year team award, and to claim second authorships on two influenza research papers.

Outside of classes and research, I enjoyed sharing my love for music by contributing to the Kappa Kappa Psi music service fraternity and the Redcoat Marching Band, as well as continuing to capture the beauty of the world with my drone photography. Being a part of the College of Agricultural and Environmental Sciences department has provided me the resources to pursue my passions in the science field and equipped me with the knowledge to tackle relevant problems in any research environment. I am graduating with degrees in Applied Biotechnology and Microbiology in spring 2020. I will always treasure my time as an undergraduate at the University of Georgia with those who made a positive impact on my career outcome and personal life. Go Dawgs!

## Undergraduate Student Spotlight

### Mackenzie Goss

I am an undergraduate studying Biological Sciences and Entomology at the University of Georgia. My dream is to become a veterinarian for the U.S military and I currently plan to attend Ross University School of Veterinary Medicine in the fall. Starting from my roots, science has always been a passion of mine. So, when I came upon the decision to choose my major here at the University of Georgia, I followed my passion and chose Biological Sciences.

A requirement for all freshman undergraduates at UGA is to take a freshman odyssey class. With the intention of taking a vet-based class for this seminar, I met with my advisor and realized that most of these seminar classes were already full leaving me with the option to take an entomology seminar class. I can't say that I was entirely enthusiastic about taking this class, but I was open to the idea of experiencing something completely outside of my comfort zone. This seminar



turned out to be a fantastic opportunity and opened my heart to a whole new world. Led by Dr. Paul Guillebeau, this class flourished on his passion and guidance and drove me to double major in entomology in addition to my biological science degree. To go on field trips to the botanical gardens or just a simple walk through campus to find insects we could identify, I didn't realize that by doing so, this class would change the way I looked at these magnificent creatures. As Dr. Guillebeau would say, "These tiny little insects have tiny little

brains with tiny little thoughts," and I never knew how much these tiny little insects would hold such a big place in my heart. Entomology has followed me into my free time as one of my favorite things to do now is walk through the State Botanical Gardens or Trail Gardens of the University of Georgia to capture the beauty of these insects with my camera. Now that I am on the cusp of graduating, I look back on the times spent in my entomology classes, some with Dr. Guillebeau, and think of the joy it brought me to be a part of something so unique. My love for this field matches that of my love to help animals and I hope that one day I can inspire people the way Dr. Guillebeau inspired me.





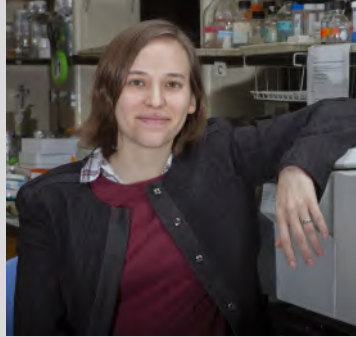
## Gurjit Singh

Being brought up in a typical middle-class family in India, I either had the option to become an engineer or a doctor. So, right from the junior year in high school I started preparing for the engineering entrance exams. Unfortunately, or may be fortunately, I failed to secure a seat in any of the major engineering institutes of India. However, the hard work did not go waste. It helped me to get into the Punjab Agricultural University, where I pursued my BS in Agriculture (Hons.). It was a completely new field for me and I struggled initially. However, things start to change in the sophomore year when I was introduced to the insect-taxonomy course. I found it really interesting, especially the insect collection part. I really enjoyed going out in the fields and woods to capture insects and trading extra specimens with fellow students. In the junior year, courses like Integrated Pest Management (IPM) and Bio-control further built my interest in the area of sustainable insect-pest control. In the final year, I worked in the Bio-control lab where I monitored insecticidal toxicity of Delfin WG and PAU Bt. (biological insecticides) towards *Helicoverpa armigera* by using leaf-dip bioassay method and estimated its  $LC_{50}$  and  $LD_{50}$  values. I also learned the rearing techniques for the mass production of egg parasitoid, *Trichogramma*. The incredible experience that I gained during this time really opened me to the vast horizons offered by this field of research.

After finishing my bachelors, I came to US to pursue Master's degree in the Turfgrass & Ornamentals entomology lab of Dr. Shimat Joseph. My research work is broadly focused on developing IPM strategies for the fall armyworm (*Spodoptera frugiperda*) pest in bermudagrass. The research objectives were designed to determine the role of food quality on the survival and biology of this pest. I have screened fourteen newly developed bermudagrass lines that were not previously tested for fall armyworm (FAW) resistance. These lines are considered as "elite lines" because they were rigorously tested for years in field for traits such as drought tolerance, rapid growth, resistance to wear and tear and so on. Moreover, the available soil potassium (K) is highly prone to leaching and soils can be deficient of potash in Georgia. Fertilizers used by turfgrass industry are usually nitrogen (N) driven as it essentially produces profound grass growth. K is known to increase fiber strength and quality in plants. The plant nutrient levels may influence grass's ability to resist FAW feeding pest. If foliar application of inorganic plant nutrients helps reduce the insect feeding under field conditions, it might be helpful in sustainable management of FAW. My other work is related to determining the role of different grass parameters like height, density, and thatch thickness on the abundance and diversity of arthropod communities in the commercial sod farms. The research experience in Dr. Joseph's lab has laid the foundation of my research career.

### Ruby Harrison

In my younger years, I had neither the aptitude nor the interest for science, critical thinking, or left-brain function in general. I managed passing grades in math and science, but I treated those classes as free periods for forearm-doodling in indelible ink. High school was four years of procrastination and boredom only relieved by music and art classes. When asked what my future career goals might be, I would panic and make noises about being an English major. I liked reading books, so I'd probably make a good writer, right?



The turnaround came when I went to college. My enthusiasm for education took a sharp upturn once I had total freedom to take any course I wanted. Too, university-level science was a different story from my high school days, in which the only memorable moment of sophomore science II had been when the teacher mixed Mentos and Diet Coke for us. In college, I realized I actually loved molecular biology and chemistry, and began taking a wide variety of science classes. Eventually I took an introductory entomology course and was hooked. I was fortunate that my undergrad institution, the University of Wisconsin-Madison, offered an entomology major, albeit a dwindling one. I graduated with a B.S. in entomology in 2012 as part of a proud class of three.

When I graduated, I got a great job opportunity to be a research assistant for a medical entomology lab, working under Dr. Susan Paskewitz at UW-Madison. I wasn't initially drawn to working with mosquitoes or ticks – until the research began. I got hooked once again, even though the work wasn't always smooth

going. I had a simple research goal of producing transgenic mosquitoes that proved to be a two-year-long flop. One of my colleagues told me, “experiments require the mental fortitude to fail daily but to keep trying.” My boss, Dr. Paskewitz, encouraged me to pursue graduate studies and asked what interested me. I brought up insect reproduction and neurobiology, and she suggested I look up Mark Brown and Mike Strand at UGA.

It's now been five and a half years since I came to UGA to work with Mark and Mike, and for me those years have flown by. Over the whole course of my higher education, I went from initially thinking I had no business studying science to now feeling like I belong and can actively contribute to the field. In my role as a graduate student, I often consider myself to be an entomology apprentice. The training takes years, but is excellent preparation for a lifelong career in a unique field. Following my doctoral studies, I intend to pursue a career in academia studying physiology and pathogen transmission in insect vectors of medical relevance. I love what I do, and hope to keep doing it for years to come.





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# SNAPSHOTS



You can observe a lot just by watching. — Yogi Berra



## Collaborative Research *Hawaiian Style*



**Kelsey Coffman**, PhD student in Dr. Gaelen Burke's lab, spent a few months this past year in research paradise when Burke sent her to Hawaii to conduct critical research for the lab.

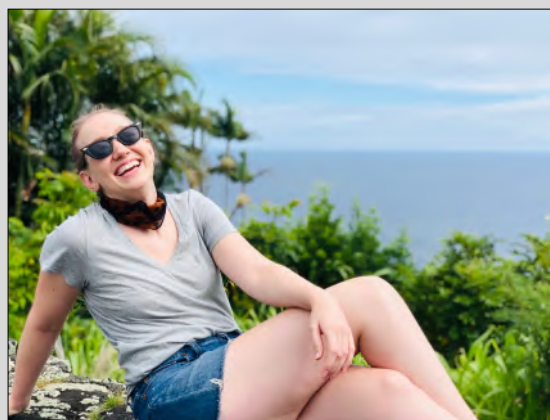
For her dissertation, Kelsey is studying a species of parasitoid wasp, *Diachasmimorpha longicaudata*, that can lay its eggs and successfully develop within several major tephritid fruit fly pest species. This is unusual for most parasitoid wasps, which are thought to

have highly specific relationships with their hosts and therefore, can only develop within very few, or even a single, host species. *D. longicaudata* is also unusual in that it maintains a heritable symbiotic relationship with a virus that female wasps carry in their reproductive system. This virus is injected into the host fly when the wasp lays her egg, and within the host, the virus enhances the survival of wasp offspring by disrupting the fly's physiology.

"My advisor, Dr. Gaelen Burke, and I were interested to know whether the symbiotic virus used by this parasitoid wasp was associated with the wasp's expanded host range. Unfortunately, our lab here at UGA currently contains just one species of fruit fly used to maintain our wasp colony.

"However, a USDA facility on the Big Island of Hawaii has several fruit fly species in culture, as well as a colony of *D. longicaudata* wasps. Dr. Burke received funding through her NSF CAREER Award to send me to conduct experiments and investigate this research question," Kelsey said of her research trip. Kelsey traveled to Hilo, Hawaii and worked in the lab of USDA-ARS Research Entomologist Dr. Scott Geib for 3 months to test some hypotheses.

Living in Hawaii was a truly unforgettable experience for Kelsey full of incredible culture that included meeting wonderful people, eating delicious food, and viewing magnificent scenery.



"While I spent most of my time in the lab during the work week, I used my weekends to explore new places throughout the island. I was very fortunate to have a rental car during my stay, so I could easily make my way around to visit pristine beaches, lush waterfalls, and active volcanoes. Simply driving along the island perimeter was one of my favorite activities due to the beautiful landscapes that changed dramatically as I ventured to different parts of the island," Kelsey said, remembering her time in Hilo.

Kelsey said the most difficult part of her trip was the hard deadline in which she had to complete all lab work. The ambitious research plan meant spending many long nights in the lab, and the pressure of finishing measurements and collecting samples before leaving was definitely stressful.

"However, the data I generated on my trip looks very promising thus far, so I'm happy to say that the hard work will eventually pay off!" Kelsey said, excited about the research outcome.

Overall, her time in Hawaii left a lasting impression on the young scientist.

"I'm very thankful for everyone that made my trip possible, especially my advisor, who has always supported my professional development and regularly encourages the use of scientific collaboration. This experience has taught me so much about the preparation and execution of a successful research trip. Plus, I'll always cherish the friendships and memories I made while I was there," she said.



## Hexapod Herald Subscriptions

*Michele Hatcher Editor*

The Hexapod Herald will be issued in **Spring, Summer** and **Fall** 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.



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Or Call 706-542-2816.

## Entomology CAES Ambassadors

New CAES Ambassadors selected for next year included students from our department.

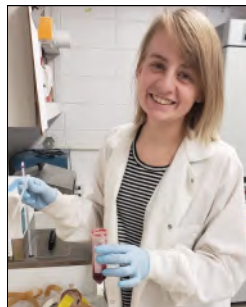
Congratulation to:  
**Aynslee Connor**  
**Taylor Pearson**  
**Douglas Vines**  
And returning  
Ambassador,  
**Kelly Tims**

## Community Outreach

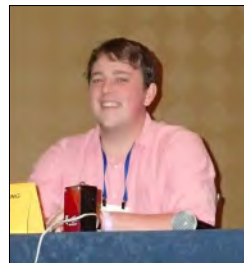


Earlier this past semester, Fawad Khan (pictured second from left), entomology PhD student judged the regional 4-H presentations in both the junior and senior entomology competitions at Rock Eagle. Fawad and Richard Evans, Bryan County ANS Extension Agent and UGA entomology graduate are shown questioning one of the 4-H presenters.

## Students receive awards and honors



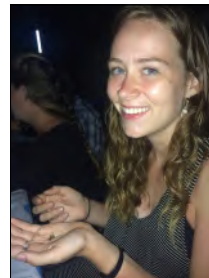
Carissa Gilliland



Nathan Spaulding



Clesson Higashi



Katherine Hagan

Four entomology graduate students recently received awards from the University of Georgia. **Carissa Gilliland**, PhD student in Kevin Vogel's lab, received the 2020 Innovative and Interdisciplinary Research Grant. The \$2000 grant will assist Carissa with her research titled "Investigating the Role of Gut Symbionts in Kissing Bugs" and will help move her project forward.

**Nathan Spaulding**, graduating M.S. student in Ash Sial's lab, was received the Outstanding Teaching Assistant award.

And, **Clesson Hagashi**, PhD student in Kerry Oliver's lab, and **Katherine Hagan**, M.S. student with Keith Delaplane were the department's nominees for the Broadus Browne Award.

## Calendar Reminders

May 7 — Online CAES Spring Convocation Ceremony; 6—6:45 pm  
[www.youtube.com/user/ugaagandenvironment](http://www.youtube.com/user/ugaagandenvironment)

May 27 — Memorial Day Holiday

June 11 — Summer online classes begin

July 5 — UGA Holiday

August 20 — Fall Semester Classes begin



## 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](mailto:external@uga.edu).



Photo by Jena Johnson

*Like our lovely Orchid Mantid above, UGA Entomology hopes you are safe and well during this Spring of 2020*