



## Entomology Stridulations

Spring 2021 Newsletter

### Department Announcements

**From the Chair, *Dr. Jamie Strange***

As we wrap up spring semester and the school year, the Department of Entomology is looking forward to a summer of field work and the return to campus next fall. I am hopeful that the best metaphor for 2021 will be the emergence of Brood X cicadas as we try to get back to our old patterns. Last year we were hunkering down as COVID-19 was spreading like murder hornets across the Northwest, or maybe like spotted lanternfly across a vineyard, either way the metaphor is not that great and kind of depressing. But cicadas remind us that even after a long time hidden away it is possible to come out of our holes, climb to high places, and make some noise. If you scroll down to the awards, you will see that our undergrads, grad students, post docs, and

researcher scientists already made noise by winning a number of awards at the CFAES Annual Research Paper Competition.

Our students continue to emerge from our department and climb to success. Vashti Tatman (BS '21) was named a CFAES Distinguished Senior. Tae-Young Lee, Dr. Katie Turo, and Adrian Pekarck won our entomology awards for teaching, research, and service, respectively. Caitlin Peffers (MS '21), Dr. Denisha Parker (PhD '21) and Dr. Katie Turo (PhD '21) defended their thesis and dissertations in Entomology this spring as did Emily Walker (MS '21) in the Environmental Science Graduate Program. Five students advised by Entomology faculty graduated from the Master's in Plant Health Management Program. Like cicadas we offer our stridulations to all the successful graduates that emerged this year.

Our emergence from Thorne Hall and move into the Wooster Science Building is nearly complete and we look forward to showing our new home off to visitors soon. Once COVID -19 subsides to the point where we can safely host guests, we will plan a proper celebration so keep an eye out for that. The WSB and the new Bug Zoo are attracting a lot of attention for the department and we can't wait to have you visit us soon and see what the buzz is all about.

I want to end with a Brood X level stridulation for Dr. Celeste Welty. Celeste has been a true asset to the department for over 30 years and she is retiring on June 30th. Her dedicated service to the department, our students, and the growers of Ohio will be missed, and we wish her the best as she migrates to new adventures.

I wish everyone a productive and safe summer. Go get those vaccines so that we can gather together in the future and celebrate the successes we are sure to have, and in the meantime, keep climbing higher and singing loudly.

**Wooster Entomology's New Location**, *Dr. Andy Michel, Associate Chair*  
Entomology@Wooster moved operations from the nearly-century-old Thorne Hall to the new Wooster Science Building in the heart of the CFAES Wooster campus. We are mostly unpacked, and our laboratories are fully functional enabling us to continue our important research and extension activities. Our live insect collection has made the move to their new home at the United Titanium Bug Zoo Wooster in the first-floor lobby. Surely, the coffee and snacks from the brand-new CFAES café on the first floor helped us all recover from the move and unpacking. Thank you to all faculty, students and staff for their efforts to make our move as smooth as possible. A special

thank you to Jim Hacker and Erin Parker for helping everyone with the complicated logistics. Come see us soon in our new building!



## Featured Researchers

**Dr. Kelley Tilmon**  
Associate Professor



*Kelley Tilmon on the back porch of Down House, by Darwin's iconic pillar*

**Dr. Sarah Short** Assistant  
Professor



[Dr. Kelley Tilmon's program](#) focuses on integrated pest management of insects in field crops such as corn and soybean. She is a State Extension Specialist for Field Crop Entomology, and works on a diversity of topics including the efficacy of host plant resistance, biological control, and chemical management. One current project involves the biology and management of Asiatic garden beetle, an emerging pest of corn in northern Ohio. Kelley is the Extension State Specialist for field crop entomology and provides pest management support and education for farmers, crop consultants, and county extension educators. Her lab has one Research Associate, Amy Raudenbush, and two graduate students, Adrian Pekarcik and Kyle Akred. Kelley teaches two graduate level courses on insect ecology, and scientific presentation skills.

[Tilmon Research Lab Page](#)

[Dr. Sarah Short's program](#) is broadly focused on understanding pathogen infection in arthropods and how arthropods transmit infectious disease. She studies how insects interact with harmful and helpful microbes and the ecological and evolutionary forces shaping insect immune defense. As a vector biologist, she is also interested in finding ways to use this information to prevent the spread of vector-borne diseases. Her primary study system is *Aedes aegypti*, the mosquito vector of dengue and Zika viruses. Her lab has one research assistant, Dr. Noha Meghawry, one postdoctoral researcher, Dr. Luis Martinez Villegas, and three graduate students, Dom Magistrado, Brendan Kelly, and James Radl. Sarah also teaches a course on vector biology for undergraduate and graduate students.

[Short Research Lab Site](#)

## Outreach Highlights

Denise Ellsworth, [Native Pollinator Education](#)

**Spring Semester Highlights:** 450 OSU volunteers and other clientele participated in a 5-week phenology study group from March to May 2021. Participants took part in lectures, readings, and journal activities to learn about the science of phenology as it relates to insect and plant development. The [OSU GDD \(Growing Degree Day\) Calendar](#) was emphasized, as was an OSU Phenology project on iNaturalist to record phenological observations throughout the study group. Nearly 5,000 observations were collected through that project, encompassing over 860 species of wildflowers, birds, insects, and other organisms. Lectures focused on the science of phenology, amphibian phenology, phenology and horticulture, bee phenology and climate change.

Participants deepened their observation skills and understanding of phenological events as they unfold across the state through the growing season.

**[The Welcome Spring!](#)** Authors Speaker Series consisted of daily webinars with nationally recognized authors from March 22nd to 26th. Average daily webinar attendance was 1,200 participants. Presenters included author/biologists Doug Tallamy, Heather Holm, Bryan Danforth, Olivia Carril and Mary Gardiner. All webinars were recorded and posted on YouTube, with an average of 500 views since the event.

**[Bee Short Course for Community Scientists](#)** Free, monthly webinars to build skills of community scientists interested in wild bee conservation on the third Friday of the month, May - November.

### **Jeni Ruisch, Columbus [Bug Zoo](#) and [Insectary](#)**

Spring of 2021 will hopefully have been the tail end of COVID-era outreach. Many of the bug boxes we did took place over Zoom, reaching hundreds of students this spring through digital video presentation. While a welcome addition to regular classroom learning, we can't wait to get back out in the world with people, bugs in hand.

Longtime Living Insect and Arthropod Collection Curator George Keeney retired after 35-years heading the Biological Sciences Greenhouse Facility Insectary. Ruisch, a mentee of Keeney for over a decade, has taken up the position and the Columbus Entomology live collection and the insectary live collection have now merged and contain over 150 various species. We have everything from tiny *Tribolium confusium*, the confused flour beetle; to many isopod colonies (roly poly bugs!); and our exotic animals like scorpions and millipeds. The evolution of the space has already begun!

This summer, we are planning to return to in-person outreach as much as possible, such as summer camps and classroom visits outdoors, and hoping for the best.

### **Jeni Filbrun, United Titanium [Bug Zoo](#)**

The great migration to the United Titanium Bug Zoo in the new Wooster Science Building is well underway. Our first resident was our giant bird eating Tarantula. She is now on display in her new exhibit filled with vines, ferns, and special hiding places. Check out her display along the front of the lobby and

see how happy she is in her new habitat. I bet you will see the smile on her cephalothorax and a twinkle in her eyes!

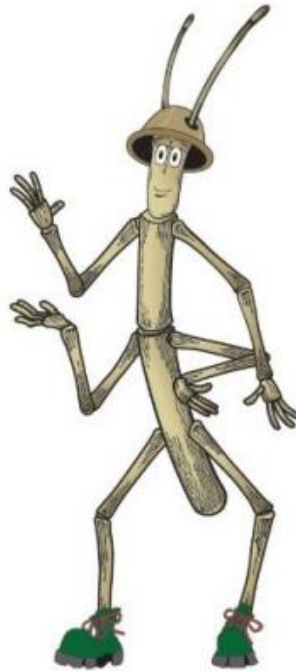
As we gear up for organizing and creating new displays, designing new signage, creating graphics and planning for visitors, I would encourage you to stop in and see all the exciting progress! Please subscribe to the website <https://u.osu.edu/bugzoo/> for alerts and updates for the open house that will occur once safety protocol allows.

## **EGSA Virtual Outreach Committee introduces “Flashy the Firefly” and a newly digitized version of “Twig”**

Illustrations by Grace Sward, Ph.D. student



**United Titanium Bug Zoo  
Featured Arthropod**



**Columbus Bug Zoo  
Featured Arthropod**



**[Curly hair Tarantula Brachypelma albopilosum](#)**

- *Habitat/Range:* Tropical scrublands in Honduras, Nicaragua and northeast Costa Rica
- *Diet:* Carnivorous predator (Live insects, small rodents)
- *Lifespan:* 10 years for females less for males, can reach 5" across
- *Fun Facts:* Docile and rarely bite, when threatened specialized legs throw irritating hairs to ward off predators!

**[Brachypelma albopilosum](#)**



**[Giant Vinegaroon Mastigoproctus giganteus](#)** photo credit: S. Upperman

- *Habitat/Range:* southern US and Mexico
- *Diet:* Carnivorous predator arachnid eats insects and slugs, a great natural garden protector
- *Fun Facts:* Front legs are antenniform legs, used as sensory extremities. Can shoot a poof of acetic acid from their tail as a defense to ward off predators. Vinegar is mainly comprised of acetic acid, source of their common moniker. Easy to keep in captivity and docile to handle, popular in pet trade.

**[Mastigoproctus giganteus](#)**

## Awards and Honors

**[CFAES Annual Research Poster Competition](#)**

Entomology Research Staff, Postdoctoral Scholars, Graduate and Undergraduate Students advised by Entomology Faculty presented 15 Posters, and 9 placed in the Poster Competition:

*Master's Students*

- First place (tied): **Dylan Ricke**, Entomology, R. Johnson, Advisor
- First place (tied): **Emily Walker**, Entomology, R. Johnson, Advisor

*Ph.D. Students*

- First place: **Lydia Fyie**, Entomology, *M. Gardiner* and *M. Meuti*, Advisors

#### *Postdoctoral Scholars*

- Second place: **Carlos Esquivel**, Entomology, *L. Cañas*, Advisor

#### *Research Scientists*

- First place: **Erick Martinez Rodriguez**, Entomology, *L. Cañas*, Advisor

#### *Undergraduate Students*

- Third place (tied): **Valerie Anderson**, *C. Ranger* and *L. Canas*, Advisors
- Third place (tied): **Christiana Arkorful-Bondzie**, *M. Meuti*, Advisor
- Second place: **Joseph Urso**, *M. Meuti*, Advisor
- First place: **Olivia Blanco**, *M. Meuti*, Advisor

### **Faculty Honors**

- **Reed Johnson**, Grant Awarded: Effects on honey bees of bloom time application of spray adjuvants and adjuvant-fungicide combinations. Almond Board of California. August 2021 – July 2023. \$190,888
- **Megan Meuti**, Grant Awarded: Determining the relative contributions of mosquito biting behavior and seasonal responses in West Nile virus transmission. CFAES Internal Grant Program. March 2021 – February 2023. \$50,000 Co-I: Pomeroy, Laura
- **Abdelhadi Sabraoui**, Visiting Fulbright Scholar from Morocco, Michel Lab, Feb-May 2021

### **Graduate Student Honors**

#### *Entomology Department Graduate Student Awards*

- **Tae-Young Lee** Susan W. Fisher Teaching Award for excellence in teaching. *L. Phelan*, Advisor
- **Katie Turo** Lowell R. (“Skip”) Nault Research Award for best graduate student paper in past 12 months. *M. Gardiner*, Advisor
- **Adrian Pekarcik** David J. Horn Service Award for outstanding service. *K. Tilmon*, Advisor

#### *CFAES Graduate Student Advisory Committee Leaders*

- 2020-2021: **Adrian Pekarcik**, CFAES GSAC Wooster Vice-Chair, and Grad Student rep, CFAES Council of Councils. *K. Tilmon*, Advisor



- 2021-2022: **Caralee Shepard**, GSAC Treasurer. *M. Gardiner*, Advisor; **Michelle Pham**, Diversity, Equity, and Inclusion Action Council GSAC representative, ESGP. *M. Gardiner*, Advisor

### Undergraduate Student Honors

- **Vashti B. Tatman** [CFAES Distinguished Senior Award](#), most prestigious undergraduate award in CFAES, recognizing top 25 graduating seniors from each CFAES academic unit
- **Joseph Urso** 3rd place, Insects and Animal Sciences category, [Denman Undergraduate Research Forum](#). *M. Meuti*, Advisor

## Spring 2021 Graduate Student Defenses

### Master of Science, Entomology

- **Caitlin Peffers** “Investigating Seasonal Responses in *Culex pipiens* Mosquitos” *M. Meuti*, Advisor

### Doctor of Philosophy, Entomology

- **Denisha Parker** “Drivers of Predator Insect Distributions Within a Legacy City” *M. Gardiner*, Advisor
- **Katie Turo** “Conserving Urban Pollinators: Local and Landscape Drivers of Urban Bee Biodiversity, Fitness, and Trophic Interaction” *M. Gardiner*, Advisor

### Master in Plant Health Management (MPHM)

- **Rachel Bienemann** “Susceptibility of Natural Enemies to Insecticides in Controlled Environments” *L. Cañas*, Advisor
- **Nora Durham** “Integrated Pest Management of Western Flower Thrips (*Frankliniella occidentalis*) in Hydroponic Strawberries” *L. Canas*, C. Kubota, Advisors (will graduate in Summer 2021)
- **Michael Rizzi** “Managing Pest Insects in Ohio for Gardeners and Homeowners” *L. Cañas*, Advisor
- **Brenna Scheiderer** “Surveying Oleander Aphids on Milkweed” *C. Welty*, Advisor
- **Renato Zardo** “Natugro line for leafy greens” *Luis Canas*, Advisor

[Master of Science, Environmental Studies Graduate Program \(ESGP\)](#)

- **Emily Walker** “Assessment of toxicity of almond insecticide-fungicide-adjuvant treatments applied on adult honey bees at field relevant concentrations” *R. Johnson*, Advisor

## Spring 2021 Publications

### Research Publications

Entomology department

members [published more than](#)

[20 peer-reviewed journal](#)

[articles](#) during Spring 2021

semester!



**CFAES** OHIO STATE UNIVERSITY EXTENSION

### SOYBEAN GALL MIDGE

A new pest of soybean in the Midwestern region resulting in significant injury

Soybean gall midge has been reported in five states (Nebraska, South Dakota, Iowa, Minnesota, and Missouri), and is expanding in distribution. This card provides information on scouting for early-detection of this pest.

The larvae (maggots) are white turning orange as they mature. Multiple larvae infest the stem at the base of the plant.

The adults are small flies (1/4 inch long) with banded legs and are extremely difficult to spot in the field. Scouting efforts should focus on larvae only.

**Soybean gall midge is not currently reported in Ohio. If suspected, contact your local extension office or state extension specialist.\***

**WHEN TO SCOUT:**

- R1 (flowering) through R6 (full seed set)

**WHERE TO SCOUT:**

- First four rows on edges of soybean fields
- Field edges adjacent to last year's soybean fields
- Fields near dense vegetation and shrubs

**WHAT TO LOOK FOR:**

- Wilted, dead or lodged plants
- Dark lesions at base of plant
- Swollen or cracked stems
- Plants that snap easily at the soil surface
- White/orange larvae under dark lesions on stem

We would like to thank Justin McManahan, University of Nebraska-Lincoln for providing images for this card.  
\*State Specialist Dr. Kelley Tomlin, Winton, Missouri

### Extension Materials

[Soybean Gall Midge Alert](#)

[Card](#) recently published by

Raudenbush A, Tilmon KJ, 2021

## Spring 2021 Courses

### Entomology Courses

Entomology Faculty [taught](#)

[nearly 20 courses](#) to

undergraduate and graduate

students during Spring 2021

semester.



# Entomology Student Groups

## Entomology Graduate Student Association



*Adrian Pekarcik, EGSA President 2020-2021. Carol Anelli, EGSA Faculty Advisor*

EGSA hosted three guest speakers this semester:

- Dr. Chris DiFonzo, field crop entomologist, Michigan State University, enlightened us with experiences dealing with industry and federal regulations for the 2021 DeLong Seminar. DiFonzo invited by A. Pekarcik.
- Dr. Jennifer Jandt, University of Otago, New Zealand, joined us virtually to discuss what makes wasps and other Hymenopterans angry! Jandt invited by G. Sward.
- Dr. Gene Kritsky, cicada expert, Mount St. Joseph University, Cincinnati, discussed the Brood X periodical cicada emergence. Kritsky invited by Dr. Anelli.

EGSA's virtual outreach activities this month:

- Enlighten and educate audience members about the History of

## Entomology Undergraduate Student Club



*Anne Gill, Chrysalis President 2020-2021. Joe Rackowski, Chrysalis Faculty Advisor*

Chrysalis continued to hold virtual meetings during spring 2021 semester in compliance with pandemic safety protocols. We look forward to resuming in person meetings in the Autumn 2021 semester. Spring 2021 Chrysalis activities:

- February - Insect-themed movie night, featuring the film "Them!," and discussion of how the film represented insects.
- March - Insect Bingo Night featuring entomology trivia.
- April - Presentation of Mary Gardiner's book *Good Garden Bugs*. Club members learned about research being done by OSU faculty and how to encourage beneficial insects in preparation for gardening season.
- April - Chrysalis club attended an event led by graduate students in evolution and ecology and learned about the process of getting into

Insects, with a focus on the silkworm.

- Virtual BugZoo to showcase favorite Arthropods including the Madagascar hissing cockroaches.
- EGSA members use their own research in our “Follow an Entomologist” segment.
- Grace Sward and Tae Lee hosted Zoom tutorials to teach EGSA members to create animations and illustrations in Adobe Illustrator and Microsoft Powerpoint to aid in the production of dynamic virtual outreach content.

*Congratulations to Kendall King, voted EGSA's first Media Officer!* EGSA recently approved formation of a Media Officer position, responsible for running and maintaining EGSA's social media accounts, OSU website, and assist with promoting events, fundraising, and processing online payments.

**Congratulations EGSA photo contest winners!** Winners receive \$20 and their photo featured in the EGSA calendar:

- January – Iliana Moore
- February – Sarah Scott
- March – Iliana Moore
- April – Caitlin Peffers

[Entomology Graduate Student Association](#)

graduate school. Attendees learned tips for researching graduate programs and were offered one-on-one time to help compose emails to graduate professors. The event was planned in coordination with the Evolution and Ecology Club.

Chrysalis provides opportunities for interaction with other entomology students and with faculty, to discuss careers and research with scientists and to participate in service activities. The club is open to all OSU undergraduates, not just entomology majors.

**Congratulations to the newly elected Chrysalis president, Camden Dezse!**

[Chrysalis Undergraduate Club](#)





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