# Gul-Oct 2023 Mewsletter

UF/IFAS Entomology and Nematology Department

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#### Letter from the Chair



Dear Friends in Entomology & Nematology,

I have just recently passed month #5 here in Gainesville, and I am excited to finally experience some more mild weather. I've been having a great time continuing to get to know everyone and get a deeper understanding of all our unit's strengths. I've also been making some progress getting out to REC locations: so far I've been to MREC, CREC, FMEL, IRREC, and soon GCREC. I'm continually amazed by the people, facilities, and programs in our department and look forward to visiting the remaining six RECs in the near future. If you didn't know, Entomology and

Nematology has faculty based at 11 of the 12 IFAS Centers (the Range Cattle REC in Ona being the only outlier). Our department has by far more faculty at more centers than any other IFAS unit, and there isn't even a close second.

The ESA meeting in National Harbor outside DC is just around the corner! The department will be well represented at all levels, from undergrads (thanks Rebecca and Jen for driving the vans) to grad students to faculty. Several of our faculty will be recognized with national awards and honors (more on them in the next newsletter). Join us for a joint mixer with UGA and NCSU on Monday evening of the meeting in the Gaylord National Resort and Convention Center (room Maryland B)! I want to highlight that our faculty continue to play major leadership roles in the society: Dr. Andrea Lucky will rotate into the president's chair for the Systematics, Evolution, and Biodiversity Section (SysEB), while Dr. Daniel Swale, currently serving as president of the Physiology, Biochemistry and Toxicology (PBT) section, will move to past president. Additionally, Dr. Amanda Hodges serves as past president for the Southeastern Branch, and Dr. Faith Oi and myself serve on the ESA Governing Board.

As the last newsletter of 2023, I also want to give a big Thank You to the two faculty that are departing our program in December. Dr. Peter DiGennaro (Assistant Professor, molecular nematology) will be transitioning to the University of Wisconsin-Madison, and Dr. Michael Scharf (Sapp Professor, urban entomology) will be leaving UF to pursue new endeavors. Both have been valued teacher-scholars in our unit and I wish them all the best in their respective transitions.

As always, if you see me around or are passing by Gainesville, please do not hesitate to stop by and chat. Go UFBugs and Worms!

#### **Dr. Andrew Short**

Professor and Department Chair

#### Please welcome our



## Stephanie Stout

Academic Assistant II

Introducing Stephanie, our new Academic Assistant II. She holds a degree in Communications from Florida Gulf Coast University and has recently joined Gator Nation in Gainesville. Stephanie is a Gators fan, eager to contribute to our UF community through her role in the Entomology and Nematology Department. Her duties include assisting Elena, our Academic Advisor II, with graduate student registration and offering support in our front office. Stephanie looks forward to becoming a valuable resource for both students and faculty.



Tim Reside, an IT Professional II, delivers comprehensive computer and communications support to IFAS Entomology and Nematology. His expertise encompasses software support, hardware diagnostics, telecommunications, and distance education program assistance for faculty, staff, and department administration. As the departmental Systems Administrator, Tim, a Software Engineering graduate, brings prior experience from UFIT to his role here.

## Ohristina Salerno

Postdoctoral Laboratory Supervisor

Christina Salerno joined The Miller lab in October of 2023 as a postdoctoral laboratory supervisor. She will be investigating the biomechanics of animal weapons in dynamic environments. Christina completed a Ph.D. in marine biology at the University of North Carolina Wilmington where she explored the patterns, causes, and consequences of personality in a keystone salt marsh grazer, *Littoraria irrorata*. Christina is passionate about animal behavior and is excited to be a Gator!







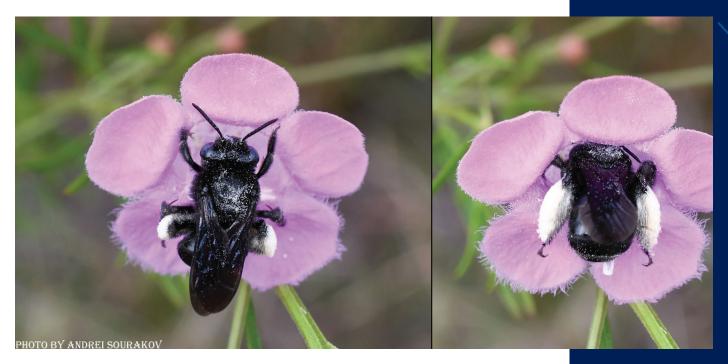
#### Insect ID LAB

The Entomology and Nematology
Department has a large collection
of insect images available for use
in your extension, teaching, and research
work. The collection is available online
and currently includes about 16,000
images. Starting from the departmental
homepage, go to 'About Us', then
'Resources'. About halfway down is a link
for the 'Entomology and Nematology
Insect Photography Database'. You'll need
to login with your Gatorlink credentials.

If you prefer to take your own photos, we have some equipment that may help. Our Leica setup features a 20MP camera mounted on either a dissecting or compound microscope. The LAS X software has focus stacking capability to ensure that your subject is in sharp focus. This is a departmental resource, so talk to Lyle Buss (LJBuss@ufl.edu) if you'd like to try it out!



Andrei Sourakov (McGuire Center for Lepidoptera and Biodiversity) recently took some photos of a two-spotted longhorn bee, *Melissodes bimaculatus*, visiting flowers of beach false foxglove (*Agalinis fasciculata*) in San Felasco.



#### Faculty and Staff News

Dr. Christine Miller delivered several hour-long seminars on her research while she was away on sabbatical at the University of Cambridge during the 2022-2023 academic year: University College London, UK. Centre for Biodiversity and Environmental Research (CBER), 2023. University of East Anglia, UK. Department of Biology, 2023. Institute of Functional Genomics – Lyon, France, 2023. University of Plymouth, UK. School of Biological and Marine Sciences, 2023 University of Cambridge, UK. Behavior, Ecology, and Evolution Seminar Series, 2022. She also served as an External Examiner for two viva examinations (Ph.D. and MPhil) at the University of Cambridge.

Catch <u>Dr. Ted Burgess'</u> expert insights on <u>fly control</u> in his recent interview with MarthaStewart.com. Discover effective strategies that maintain ecosystem balance.

<u>DeLuca Preserve</u> encompasses 27,000 acres that have been generously gifted to UF for the purposes of conservation, outdoor education, and research. The property features a diverse landscape, comprising cattle ranchlands, citrus groves, wetlands, and forests. This year, it was announced that <u>Dr. Phil Hahn</u> was granted the prestigious DeLuca Jumpstart Award to support his research.

Under the umbrella of this award, Dr. Phil Hahn's Plant-Herbivore Interaction Lab recently undertook a visit to DeLuca Preserve in southern Florida. Their research focus during this visit was the study of grasshopper communities within the preserve.



Toni Jordan-Millet sweep netting for grasshoppers at DeLuca Preserve with a cow looking on (credit: Phil Hahn).

Dr. Akito Kawahara has been appointed as the new director of the prestigious McGuire Center for Lepidoptera & Biodiversity at the Florida Museum of Natural History.

Under Dr. Kawahara's leadership, the McGuire Center is set to expand its global influence and further solidify its reputation as an esteemed institution. We are excited to witness the promising future that lies ahead for the center. You can read more here.

In unrelated news, the Kawahara Lab, in collaboration with many entomologists, has published a significant study on the phylogeny of Lepidoptera in Nature Ecology & Evolution.

Dr. Akito Kawahara discussed this remarkable achievement on an episode of NPR's All Things Considered.

Additionally, several current and former



graduate students from the Entomology and Nematology Department are <u>co-authors on this study.</u>

Dr. Chouvenc's lab has updated the Florida termite distribution map, adding more than 500 data points for 2023. This update was made possible through the diligent monitoring efforts of numerous pest management companies that regularly submit samples for identification. The UF termite team remains well-informed about the current status of invasive termite species throughout the state.

In 2023, we observed the Asian subterranean termite (*Coptotermes gestroi*) extending its range beyond Southeastern Florida, where it had been confined for the past two decades. Thanks to the assistance of boats and other infested materials, the species' presence has been confirmed in five new, separate locations north of Lake Okeechobee but south of Orlando. The distribution of all termite species can be accessed at here.





## 2023 FLORIDA ENTOMOLOGY SOCIETY



#### **Annual Achievement in Research**



Silvana Paula-Moraes

#### **Annual Achievement in Extension**



Lauren Diepenbrock

#### **Outstanding Collaborative Team**



Lauren Diepenbrock



Lukasz Stelinski



Lance Osborne



Nicole Quinn

#### **Industry Partner**



Rebecca Baldwin

## Postdoc Appreciation!



## A Special Shoutout to Our Postdocs!

Our recent Postdoc Appreciation Day in the Department was a heartwarming success. Dr. Bonning's lab, with their remarkable efforts in organizing the event (from the idea to logistics), and the Entomology and Nematology department providing pizza, brought us all together to celebrate a group of individuals who are true unsung heroes in our field.

To our dedicated postdocs: Your work often happens behind the scenes, but it is never unnoticed. You're the driving force behind countless discoveries, and your passion for the tiny wonders of our natural world is truly inspiring.

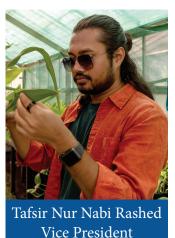
We thank you for organizing this event and providing us with a delicious opportunity to come together.

Let's continue to cherish and support our postdocs, who are the backbone of our department. Your contributions are immeasurable, and we are forever grateful for your dedication.

#### **ENTOMOLOGY NEMATOLOGY STUDENT ORGANIZATION**

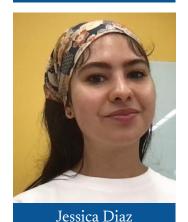
Introducing the new leadership for the Entomology Nematology Student Organization, or ENSO for short! We are excited to witness the initiatives, projects, and activities these emerging professionals have in the pipeline.











Fundraising Chair







**ENSO's Travel Fund Awards** 

ENSO recently awarded fall travel grants totaling \$1,750. These funds were disbursed to the awardees as follows.

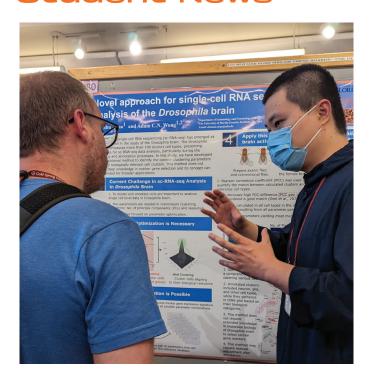
#### \$500 Recipients

Carolina Tieppo Camarozano Wendy Paola Villamarin Romero

#### \$250 Recipients Sankara Ganesh

Vashti Tatman Victoria Adeleye Naga Mani Kanchupati

#### Student News



Graduate student Dianshu Zhao, accompanied by **Dr. Adam Wong**, visited the Cold Spring Harbor Laboratory (CSHL), a prestigious private, non-profit institution renowned for its cutting-edge research programs in the fields of cancer, neuroscience, plant biology, genomics, and quantitative biology. During their visit, they had the opportunity to present and discuss their research findings on brain transcriptional network analysis.

Jake Herschberger presented his research on herbivores and pollinators at the Ecological Society of America meeting in Portland, Oregon.

Dr. Sang-Bin Lee, Ph.D., was showcased in Entomology Today as the distinguished Early Career Professional in the field. Hailing from the University of Florida's Fort Lauderdale Research and Education Center, Dr. Sang-Bin Lee received his Ph.D. in Entomology and Nematology at UF. He remains actively engaged in both regional and national entomological and behavioral societies, accumulating a collection of fellowships, awards, and grants. For more insights, delve into his journey through the following link.



Zahra Torkaman was honored to receive the \$3,000 Hoy Small Research and Travel Grant in Entomology, supported by the Dr. Marjorie A. Hoy Graduate Research Endowment for Arthropod Research. Her research centers on integrated pest management for chili thrips on citrus within protective screen environments.

Sangwoo Seok received ESA MUVE Student Travel Award for the 2023 Entomology meeting in National Harbor, MD. Sangwoo Seok received Minigrant, Travel grant, and Scholarship from Florida Entomological Society. Sangwoo Seok is selected as one of the six international students selected as the CALS International Student Outstanding Achievement Award Winners. This will be recognized at the UFIC International Student Award Ceremony on Tuesday, November 14, 2023, at the Touchdown Terrace. In addition, he is one of the two CALS nominees for the Alec Courtelis Award. This award will support his travel to attend the ESA meeting this November presenting his research on invasive Aedes mosquitoes.

Sydney Bennett, an undergraduate research assistant in the Dr. Christine Miller's lab during Spring 2023, presented a poster titled "Effect of weapon autotomy on mating behavior and resource allocation" at the Undergraduate Research Symposium in Spring 2023 semester. Yichen Li, a M.S. student in the Miller lab presented a poster titled "Does male-male competition lead to female injury?" based on her M.S. project during The Society for Integrative & Comparative Biology (SICB) 2023 annual meeting.





2023

#### FLORIDA ENTOMOLOGY SOCIETY

Congratulations to the student awardees at the 104th Annual Meeting of the Florida Entomological Society, held under the leadership of President Scott Croxton and Dr. Muhammad Haseeb, Chair of the Student Awards Committee. Your achievements are truly commendable!

#### Scholarship awardees:

Sara Salgado

Sangwoo Seok

#### Mini-grant awardees:

Allan Bushuulwa

Carolina Camarozano

Giselle Arismendi

Jean Palacois

Jessica Griesheimer

Kaitlin Gazdick

Mohamed Ali

Sangwoo Seok

Sara Astudillo

#### Travel grant awardees:

Allan Bushuulwa

Carolina Camarozano

Giselle Arismendi

Jean Oalacois

Jessica Griesheimer

Kaitlin Gazdick

Mohamed Ali

Sangwoo Seok

Sara Astudillo

#### MS oral talks competition:

Kaitlin Gasdick

Arden Lambert

Jessica Diaz

#### Ph.D. Oral talks competition:

Allan Bushuulwa

Carolina Camarozano

#### Poster (MS and Ph.D.):

Kaitlin Gasdick

Arden Lambert



#### Friends of IPM

We are delighted to announce that three graduates were nominated for the Southern IPM's prestigious IPM Friends Student Award. These exceptional graduates have demonstrated outstanding potential to make a significant impact on the development, extension, and implementation of IPM in the Southern United States. In a competitive field, their work and dedication have truly stood out.







#### **Research Awards and Honors**

This past spring, five outstanding students in the Entomology and Nematology graduate program were honored with prestigious awards and honors, acknowledging their exceptional contributions to research and science communication. We extend our deepest gratitude to our generous donors whose endowed support makes these accolades possible. Join us in offering our heartfelt congratulations to each of our remarkable awardees!











Congratulations!



Emily Vu serves as the Chair of the Students and Postdoctoral Affairs Committee within the Society for Invertebrate Pathology (SIP). Her involvement with SIP spans two years, during which she has actively contributed to the society. The SIP conferences, held at the end of July and beginning of August, are renowned for their exceptional networking opportunities with industry experts and their commitment to maintaining a friendly and inclusive atmosphere. Based on her valuable experiences, Emily enthusiastically recommends considering student membership registration and attending next year's conference, scheduled to be hosted in Vienna, Austria. For more information, please visit the **SIP** website.

The College of Agricultural and Life Sciences hosted an event, 'CALS Loves You: A Brunch,' to welcome new students. Ally and Rebecca were in attendance to give a warm Gator welcome to the incoming students.



## EDUCATION & OUTREACH:





Happiness, Javier, Connor, Noor, Zahra, Yuanchun, Maryam, Chiara, Rejoice, Sankara, Emilie, Pol

The CEEPS (CREC Educational Engagement in Plant Science) is a student and postdoc organization that aims to educate the lay audience to sciences. Students and postdocs from different departments and labs at the Citrus Education and Research Center came together to teach 4th graders about soil sciences, entomology and plant pathology at the Lake Alfred Elementary School. It was an amazing day for everybody. Kids had fun learning about micro-organisms and invertebrates while volunteers were impressed by the enthusiasm and bright minds of the kids!!

On June 19, 2023 afternoon, the UF/IFAS Florida Medical **Entomology Laboratory** conducted a STEM education outreach program at Imagine School - South Vero Beach summer program. We had 6 tables with different activities: pupae picking contest, mosquito life stage, biocontrol using copepods, ticks, blooded mosquito dissection, and coloring. Total 65 K-12 students participated in this event. This event was led by Dr. Chelsea Smartt and 10 other Faculty, students, and staff volunteered and assisted the program.

- Dr. Bianca Kojin
- · Dr. Cynthia Lord
- · Dr. Yoosook Lee
- Vivian Peterson
- Xiaodi Wang
- Yasmin Ortiz
- Dr. Sangwoo Seok
- Sara Ortiz
- Simon Casas





#### Dr. Tolulope Agunbiade,

hailing from vibrant Sub-Saharan Africa, embarked on a transformative journey shaped by multiple encounters with malaria, sparking an unwavering mission to unravel the mysteries of arthropodborne diseases. In her captivating IDS2935 course, "Bite Me? Insects as Disease Vectors," she

emboldens students to immerse themselves in this critical field.

Watch the exciting promo video, attached to this blurb, for a sneak peek into the fascinating world of her course. From interviewing brilliant minds at the USDA Center for Medical, Agricultural, and Veterinary Entomology to exploring the secrets of arthropod vectors and the diseases they transmit, as well as innovative management strategies, this class promises a thrilling adventure into the realm of disease prevention.



The Mosquito BEACONS working group participated in the 3rd Annual NOLA BugFest in New Orleans, LA. The BEACONS group collaborated with the NOLA Mosquito, Termite & Rodent Control (MTRC) Board in providing an in-person mosquito identification course on invasive mosquitoes and integrated pest management.

For the BugFest, our exhibit featured a termite nest, an aluminum cast of a fire ant nest, termite-damaged wood, yellow jacket honeycombs and nest entrances, live honeybees, beekeeping tools, insect collections, educational posters on *Aedes aegypti* mosquitoes, children's books on mosquitoes, the American Entomologist magazine, and a 'Build-a-Mosquito' station for hands-on experiences.

Master's student and Co-Program Director of the Mosquito BEACONS, Dan Killingsworth, Ph.D student Valerie Nguyen, and Assistant Professor and Program Director of the Mosquito BEACONS, Dr. Yoosook Lee, participated in this one-day event. The Mosquito BEACONS group also participated in the Advanced Mosquito Identification Course hosted by the NOLA MTRC Board on September 11th-12th, 2023.

Dr. Lindsay Campbell (Co-PD) and her student Amely Bauer conducted a hands-on course on QGIS. Mr. Michael Riles and Dr. Bryan Giordano covered invasive mosquito bionomics and identification. Mr. Dan Killingsworth

presented the Operational Integrated Pest Management lecture. This workshop will be replicated with slight modifications in Dallas, TX, on October 23-24 2023, with added content on Endangered Species and EPA topics by Dan Killingsworth.

This is an ongoing effort by the Mosquito BEACONS working group to improve knowledge on mosquito control and public health professionals, enhancing surveillance and control of invasive species in the southern US. This project is funded by the Southern IPM Center.

Drs. Lee and Campbell also received a related USDA Applied Research and Development grant to evaluate various lure combinations with the commonly used CDC light trap for mosquito surveillance, aiming to see if new lure combinations could improve the biodiversity of mosquito catches, including invasive mosquitoes. This low-cost method has the potential to enhance invasive mosquito detection capabilities in the broader southern region.



James Boothroyd and Yichen Li, graduate students in the Miller lab, actively engaged in an outreach event at the Insect Encounter Education Destination. They showcased the ongoing research conducted at the Miller lab by presenting a live leaf-footed cactus bug along with a diverse collection of insect specimens from the Coreidae family. In addition, they discussed their individual research projects and provided valuable assistance in engaging the public with live arthropods. This outreach event highlighted the educational contributions of the UF/IFAS Entomology and Nematology department.

The Outreach team recently took part in CALS TailGator, an engaging event designed for the public and UF students. TailGator provides a fantastic opportunity for visitors to explore various clubs and engage in a fun and educational atmosphere. This event is especially well-suited for younger students interested in discovering the diverse range of majors offered by CALS. We were thrilled with the great turnout!



#### Volunteer for the Student **Outreach Program!**

Are you passionate about education and outreach? Do you want to make a positive impact in the community? Join our Student Outreach Program led by our Outreach Coordinator, Vashti!

If you're interested in becoming a volunteer, please don't hesitate to reach out to Vashti via email. We'd love to have you on board!

## The Honey Bee Lab

In July, the Honey Bee Lab invited veterinarians from across Florida to participate in a hands-on workshop in the bee yard. This event was a part of an ongoing collaborative grant between honey bee faculty at Michigan State University, Texas A&M, the University of Minnesota, and the University of Florida. The goal of this work is to train US veterinarians in honey bee health. As of 2017, beekeepers cannot use certain honey bee antibiotics without a prescription (or veterinary feed directive) from a veterinarian. These antibiotics



are very important tools for beekeepers in the control of highly contagious 'foulbrood' bacteria. Because most vets in the US are not trained in honey bee health, this leaves few who are able to help beekeepers control these devastating diseases. In order to bridge the gap between beekeepers and vets, this first workshop was intended to help veterinary practitioners get more comfortable with honey bees. Eleven veterinarians and two students from UF's vet school donned bee suits, learned how to light a smoker, handled hive frames, and monitored hives for honey bee pests. In addition to the hands-on work, the group had a great discussion of ways to encourage more collaboration between the apiculture and veterinary industries. Next year, this same cohort (and others) will return to the lab to practice diagnosing honey bee brood diseases in the field and lab.

## 16th annual Honey Bee College

On August 18th and 19th, the Fort Lauderdale Research and Education Center and Florida Atlantic University in Davie, FL hosted the UF/IFAS 2023 Summer Bee College Extension program. Staff and faculty from the Honey Bee Research and Extension Lab (HBREL), along with sixteen of the most placid colonies of honey bees from our managed hives, traveled to present 39 different sessions to South Florida residents. From "Plants for Bees" and "Intro to Queen Rearing" to "CSI: Honey Bee" and "How to Light a Smoker", there were interactive classes and education for everyone. With 170 attendees (the youngest was ten), many had never kept bees or were "new-bees" to apiculture in general. Many survey respondents agreed it was a "great event", "very educational and hands on", and even "the most fun I've had all summer!"

Each summer, the UF/IFAS HBREL takes Bee College "on the road" – Summer 2024 will be in Panama City!

## Congratulations to all for a very successful program!"



## 4-91 Development Program

In August, the Honey Bee Research and Extension Lab hosted two groups of 4-H Youth Development Program attendees as part of their larger state-wide annual gathering, 4-H University. This year's theme for the youth was "The Best Place to Bee", so naturally, many paid a visit to the Lab for a Beginning Beekeeping encounter. While their favorite activity was learning how to light a smoker, many of the senior-aged attendees enjoyed learning about honey bee health, pests, and diseases as well. A dedicated group of twelve even lent their hands to larger service by completing a hive-refurbishment project, renovating and repainting dozens of boxes to get the equipment back to functional status and use in research projects. Thanks to 4-H for their time and efforts!"



## **Publications**

- **J. Allar, R. Mallinger, C. Liu, Z. Grabau, G. Maltais-Landry. 2023.** Different cover crops have a limited impact on marketable yields and biogeochemical cycling but secondary effects on pollinators and plant-parasitic nematodes in Florida organic vegetable systems. Frontiers in Sustainable Food Systems 7: DI 10.3389/fsufs.2023.1148866
- **D.R. Seal, O. Liburd, J. Li, A.F. Seal, R. Dakshina. 2023.** Seasonal Abundance of Various Hymenopteran Parasitoids of Leafminers in Beans and Comparative Abundance in Bean, Tomato, and Squash. Agriculture -Basel. 7: DI 10.3389/fsufs.2023.1148866
- **C.B. Ivey, N.C. Leppla, A.C. Hodges, J.E. Eger. 2023.** Quality control applications for recovering an inbred colony of *Bagrada hilaris* (Hemiptera: Pentatomidae). Journal of Insect Science. 23: DI 10.1093/jisesa/iead057
- **B.M. Mach, W.L. Long, J.C. Daniels, A.G. Dale. 2023.** Aphid infestations reduce monarch butterfly colonization, herbivory, and growth on ornamental milkweed. Plos One: DI 10.1371/journal.pone.0288407
- **R.A. Khan, D.R. Seal, S.A. Zhang, O.E. Liburd, J. Colee. 2023.** Integrated Effect of Plastic Mulches and Biorational Insecticides in Managing Tomato Chlorotic Spot Virus (TCSV) and Its Vector Thrips in Tomatoes. Insects. 14: DI 10.3390/insects14090740
- **S. Zlotnik, C.W. Miller. 2023.** Adult presence does not ameliorate juvenile feeding challenges in a leaf-footed bug. Royal Society Open Science. 10: DI <u>10.1098/rsos.221291</u>
- **A. Mullins, N.Y. Su. 2023.** Nitrogen fixation in different termite lineages and diets. Annals of the Entomological Society of America. DI 10.1093/aesa/saad027
- **N.Y. Su, A. Mullins. 2023.** A comparison between above-ground bait stations and experimental caulk baits for elimination of field colonies of the Asian subterranean termite, *Coptotermes gestroi* (Blattodea: Rhinotermitidae). Journal of Economic Entomology. DI 10.1093/jee/toad157
- **E.P. Caragata. 2023.** Susceptibility of Wolbachia mosquito control to temperature shifts. Nature Climate Change. 13: DI <u>10.1038/s41558-023-01752-y</u>
- **H.X. Bui, J.A. Desaeger. 2023.** Efficacy of five nematicides against root-knot nematode when applied via single and double drip tapes in a Florida sandy soil. Pest Management Science. DI <u>10.1002/ps.7649</u>

Click **here** to view the full list of publications.