

ENTOMOLOGY & NEMATATOLOGY *Department*

Summer 2025 Newsletter

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Chair's Letter

Dear Friends in Entomology and Nematology,

Happy Summer and welcome to the new format for the Entomology and Nematology Department Newsletter. The communications committee has been working hard to introduce this newsletter with an emphasis on keeping our alumni, stakeholders, and friends updated on the latest happenings in the #1 ranked Entomology department in the world.

The department is a hive of activity year-round, and 2025 is shaping up to be no exception. In February, the department held its first in-person statewide faculty retreat in 7 years, with more than 50 of our faculty gathering for two days of visioning about the future of UF Entomology and Nematology. The department also learned early this year that we will receive strategic funding from UF to hire new faculty at the planned UF-Jacksonville Campus next year. A task force has been formed to plan for this expansion.

2025 is also a banner year for faculty awards and recognition for their excellent work, a number of which will be featured here and in future editions of this newsletter.

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!

Andrew Short
Professor and Chair



2024 BY THE NUMBERS!



75
Faculty in the
Department



\$13.6 M
in Research
Expenditures



158
Undergraduate Students
(89 Majors, 69 Minors)



39
Faculty Based
at 11 RECs



112
Graduate Students
(69 Ph.D., 43 MS)



438
Enrolled in
Beekeeping I

Faculty Retreat



In February 2025, Entomology and Nematology faculty gathered at the UF/IFAS Plant Science and Education Unit in Citra for a 2-day strategic retreat, the first in-person gathering of faculty statewide since before COVID.

Premier Faculty and Staff Awards



Dr. Dan Hahn

Dr. Daniel A. Hahn, Associate Chair and Professor was elected as a **2025 Fellow of the American Association for the Advancement of Science (AAAS) in the Biological Sciences** section. Hahn is internationally renowned for his work on nutritional ecology and insect seasonality, on traits that predict the impact of climate change on insect populations, and is the leading authority on insect diapause. He has advanced both fundamental understanding of insect physiological systems, and practical applications for sterile insect technique to reduce the risk of invasive species introductions.



Dr. Bryony Bonning

Dr. Bryony C. Bonning, Davies, Fischer and Eckes Eminent Scholar, Professor, and Director of the NSF Center for Arthropod Management Technologies (CAMTech) was inducted as a **Fellow of the National Academy of Inventors in June 2024**. Bonning's work on agricultural biotechnology has focused on developing novel, environmentally benign alternatives to chemical pesticides, alongside educating and mentoring students, and promoting innovation within academia. Through her leadership of CAMTech, Bonning has provided an inter-institutional culture of scientific and technological achievement of relevance to industry, which is immediately accessible for use by the industry partners of the center.



Janice Shott

Ms. Janice Shott, Research Administrator II, was awarded the **University of Florida Superior Accomplishment Award for Individual Employee Performance in Finance, Research and Compliance**. Janice works with members of the faculty to navigate the often complex requirements for grant submissions, facilitating the process with her calm, positive demeanor and can-do attitude. Janice is the first from the department on record to have received this top University of Florida honor.

Did you know?



Yoosook Lee, Al Handler, Daniel Perez-Ramos, Eric Caragata, Bryony Bonning, Kirsten Pelz-Stelinski, Valerie Nguyen, and Bianca Burini

In May 2024, Dr. Yoosook Lee co-chaired the second **Gordon Research Conference on Genetic Biocontrol** held in Barcelona, Spain, along with Dr. Omar Akbari (UC, San Diego). The goal of Gordon Research Conferences is to bring together scientists working at the forefront of research in a particular area for in-depth discussion of the most recent

advances in the field, and to stimulate new research directions. The department was well represented at this meeting, with Drs. Bryony Bonning, Bianca Burini, Eric Caragata and Kirsten Pelz-Stelinski presenting cutting-edge research related to genetic biocontrol.

Alumni Highlight: Dr. Iris Strzyzewski

Dr. Iris Strzyzewski graduated from the UF North Florida Research and Education Center (NFREC-Quincy) where she completed her MS (2017) with Dr. Joe Funderburk and her PhD (2023) with Dr. Xavier Martini. Her research on integrated pest management of western flower thrips in Florida fruit and vegetable systems focused on conservation biological control. She also served as a biological scientist for Drs. Funderburk, Martini, and Esquivel. Iris' excellence led to several awards, including the Emerging Scholar Honorable Mention from the UF Association for Academic Women and the Distinguished Service Award from the NFREC.

Dr. Strzyzewski is now the Research Manager for the greenhouses at the Living with the Land attraction at EPCOT at Walt Disney World Resort. She screens new plants and growing systems, implements IPM programs for the > 150 different food crops grown at The Land, and continually searches for ways to showcase the most appropriate and impactful

methodologies for sustainable agriculture. The Land has hosted > 950 interns over > 75 semesters, many of whom have pursued graduate degrees related to agriculture. The internship is a wonderful opportunity for new graduates to gain hands-on experience in greenhouse management, hydroponic cultivation, integrated pest management and more.



Ameya Gondhalekar appointed to Sapp Endowed Professorship

We are pleased to welcome Dr. Ameya Gondhalekar, who joined our department in March 2025 as the Margie B. and Dempsey R. Sapp Endowed Professor in Structural Pest Control and Urban Entomology. A UF Entomology Ph.D. graduate (2011), Dr. Gondhalekar returns to Gainesville after more than a decade at Purdue University, where he built a nationally recognized and well-funded research program in urban pest management.

Dr. Gondhalekar's work focuses on urban insect toxicology, physiology, and integrated pest management. His research aims to improve control strategies for key indoor pests—such as cockroaches, ants, bed bugs, and filth flies—that impact both public health and industry. Combining applied and fundamental research, Dr. Gondhalekar brings a clear vision for addressing persistent pest challenges in real-world settings. His return builds momentum for the future of structural pest control in Florida and beyond.

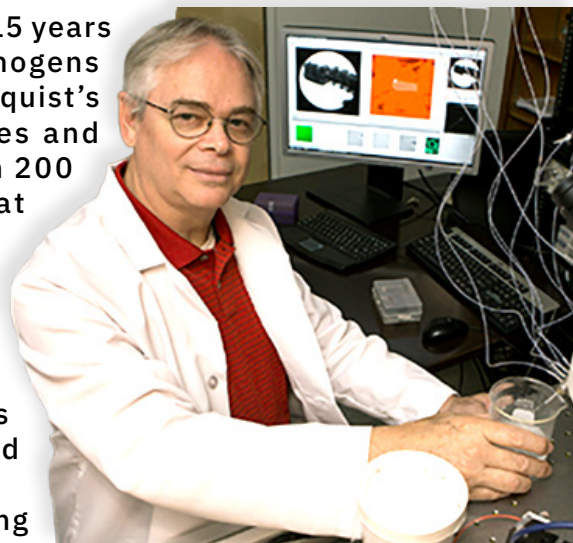


Bloomquist Retires from UF

Dr. Jeffrey Bloomquist retired in December 2024 after 15 years of service with our department and the UF Emerging Pathogens Institute. A world-renowned insect toxicologist, Dr. Bloomquist's research transformed our understanding of insecticides and repellents. His work led to multiple patents, more than 200 peer-reviewed publications, and novel compounds that advanced repellent chemistry for the first time in decades.

Among his many contributions, Dr. Bloomquist developed “molecular rulers” to probe mosquito AChE structure, identified critical differences from human AChE, and pioneered new carbamate insecticides. He also revealed that pyrethroid acids repel mosquitoes through mechanisms independent of sodium channels—challenging long-held assumptions.

From mentoring dozens of successful students to leading major NIH-funded collaborations, Dr. Bloomquist's legacy is one of innovation, leadership, and impact. We thank him for his many contributions and wish him well in retirement.



Pereira Retires from UF

Dr. Roberto M. Pereira retired in January 2025 after a distinguished career advancing urban entomology research at UF. His work focused on protecting people and public spaces from pests such as ants, cockroaches, bed bugs, flies, and mosquitoes. Through innovative studies in insect pathology and microbial control, Dr. Pereira explored how naturally occurring pathogens can be harnessed to manage invasive ant species and other structural pests.

Throughout his time in the department, Dr. Pereira was a trusted expert and collaborator whose research addressed real-world challenges in urban pest management. His contributions have improved pest control strategies that benefit both human health and the pest control industry.



Opportunities to Contribute to the

ENTOMOLOGY & NEMATOLOGY *Department*

The Entomology and Nematology Department benefits from endowments and scholarships to help support and build the stature of both the department and its members. For example, this past year alone we provided more than \$30,000 to support student:

- Travel awards scholarships
- Professional development
- Workshops

We invite you to contribute to this endeavor! There are two funds you may wish to consider contributing to:

1. [Entomology and Nematology Fund: For support of faculty and students in the Department](#)
2. [Graduate Student Opportunity Fund: For support of Entomology and Nematology graduate student professional development, academic travel, and research.](#)

For more information about these funds or other giving opportunities, please contact:

[Dr. Andrew Short](#)
andrew.short@ufl.edu

HELP OUR STUDENTS TAKE FLIGHT



WE'D LOVE TO CATCH UP!

We have plenty more to share with our alumni and friends!

Our seminar schedule along with recordings of past seminars, research and awards news can be found on our:

Website

- [entnemdept.ufl.edu /Seminar](http://entnemdept.ufl.edu/Seminar)

Facebook

- facebook.com/UFEntNem

Instagram

- instagram.com/ufifas_entnem

KEEP CONNECTED!

Please let us know if you have news to share with Entomology and Nematology alumni and friends.

Items could include:

- Honors
- Awards
- Career changes
- Personal notes

Please direct information to:
1881 Natural Area Drive
Gainesville, FL 32611
Email: EntNemNL@ifas.ufl.edu

EVEN BETTER

stop by Steinmetz Hall to say hello.

Department coffee hours are held Fridays from 9:30 to 10:30 am during the spring and fall semesters.



2024 Through an Extension Lens

Adam G. Dale, Associate Professor & Associate Department Chair for Extension

A Florida blueberry grower recently gave me a golf cart tour of their farm, showing me their stink bug trap crop, pollinator conservation plantings, and describing other IFAS recommended practices being implemented. That is what our 34 Extension specialists love to hear, and what we strive to achieve.

Our department has at least one Extension specialist at 11 UF IFAS locations across the state. A 2024 survey showed that we serve at least 50 independent clientele groups, addressing their problems and priorities by translating research into applications.

Several well-established Extension programs serve our clientele across the state, including Bee College, Pest Management University, Fume School, and many others. Our diagnostic labs provide critical diagnoses of insect and mite pests, phytoplasmas, and nematodes. Last year, the Insect ID Lab and Nematode Assay Lab identified and diagnosed 1,412 and 4,526 samples, respectively, from across Florida, the U.S., and globe.

2024 was a year of reflection and growth for our Extension programs. We recently collected information to better understand faculty programs and identify priorities. At our strategic planning retreat, this not only painted a clearer picture of our department-wide Extension identity, but also identified opportunities to improve upon our faculty's strengths to more efficiently meet the needs of our clientele. The action items from that meeting will help us achieve those priorities.

As part of this renewed momentum, we recently hired the department's first Extension Program Assistant in over 15 years, who is already playing a key role coordinating events, evaluating programs, and helping specialists. I am excited to see these plans develop and to watch their outcomes for our faculty and diverse stakeholders across the state in the months and years to come.



2024 Extension Highlights



644

Educational
Materials Created



5,630

Field Consultations



41,505

In Person
Participants Reached

Dedicated to Driving Change



720

Jobs Created



250

Trainees, New Leadership
Roles or Professional
Opportunities



1,677

Producers Implementing
Recommended Practices
on Nearly 400k Acres

Going the Distance: Online Entomology Soars Worldwide

Enrollment in the Entomology and Nematology Department’s Distance Education Program has skyrocketed, with over 400 students currently engaged in online courses!

Our flexible, fully online offerings attract a diverse, global audience. Non-thesis master’s specializations and graduate certificates include Medical Entomology, Landscape Pest Management, Urban Pest Management, and Beekeeping (launched in 2024). Undergraduate students can pursue Pest Control Technology—which meets Florida’s academic requirements to become a licensed pest control operator—or Beekeeping.

Serving students across 45 U.S. states and six continents, the program allows place-bound students and working professionals to continue their studies at a pace that fits their lives.

Recent innovations to support the professional development of online students includes virtual exchange opportunities, a Professional Development course, TA-training modules tailored to this cohort, and a dedicated online support hub that increases access to resources and encourages student interaction.

This growth is also reflected in our team. We’re pleased to welcome Dr. Tae Lee as Urban Entomology Certificate Coordinator, and Ms. Staci White as Administrative Assistant supporting pre-admissions and student registration. A new Beekeeping Certificate Coordinator will also be hired in the near future.

With engaging content, dedicated support, and global reach, our program is shaping the future of entomology—one distance learner at a time.

Our Distance Education Program Reaches Learners Across 45 U.S. States and 6 Continents!

Countries/Territories	
Australia	Bahamas
Belize	Brazil
Canada	Cayman Islands
China	Costa Rica
Germany	Greece
Guam	Guatemala
Israel	Jordan
Kenya	Liberia
Puerto Rico	Saint Vincent and the Grenadines
South Africa	South Korea
Trinidad and Tobago	United Kingdom

Distance Education Opportunities

Explore online Master’s Degree and Graduate Certificate opportunities in Urban Entomology, Beekeeping, Medical Entomology and Landscape Pest Management.



General Entomology



Urban Pest Management



Beekeeping



Medical Entomology



Landscape Pest Management

Dr. Phil Hahn Leads Global Herbivory Study



Herbivory is one of Earth's most crucial interactions between living organisms. Insect herbivores influence ecological systems, evolution, and impact agriculture. Foundational questions in ecology and evolutionary biology explore how plant-herbivore interactions change across environmental gradients, such as latitude, or across different habitat types. Interest has recently grown in understanding the causes and consequences of this variability.

Dr. Phil Hahn, Assistant Professor of Insect Ecology, helped to coordinate a global effort to quantify variability in herbivory through the Herbivory Variability Network ([Herbvar](#)). This initiative synthesized data on insect herbivory on 503 plant species from six continents, with data contributed by 192 ecologists from over 30 countries. The findings, [published in the prestigious journal Science](#), revealed that patterns of plant-to-plant variability in herbivory could be predicted by fundamental ecological characteristics, including latitude, plant size, and biome.

For example, Herbvar results provide the largest and most robust confirmation of the oft cited pattern that the strength of herbivory increases towards the equator. In other words, herbivory was more variable in seasonal climates towards the poles and less variable in tropical locations. This global study opens the door to an emerging sub-field of ecology – variance-explicit ecology – by demonstrating that variance should not be treated as mere noise in ecological data. Instead, variability can inform causes of evolutionary patterns, consequences of ecological interactions, and even pest management strategies in agroecosystems.

Building on the results of this paper, Dr. Hahn and the Herbvar steering committee met high in the Rocky Mountains in summer 2024 to move into Phase II, which will expand the scope of data synthesis and develop new [protocols for data collection](#). Phil Hahn [organized a session](#) on variability in species interactions later that summer at the Ecological Society of America's annual meeting in California that brought together speakers studying the causes and consequences of variability in a range of interactions, including competition, herbivory, predation, and disease. These meetings are part of a broader networking initiative, funded by a National Science Foundation Research Coordination Network award, to embrace higher statistical moments in the ecology and evolution of species interactions and moments in the ecology and evolution of species interactions.

Big Picture, Quick Facts

Coordinated by Dr. Phil Hahn, Herbvar is a landmark global study advancing our understanding of insect herbivory and highlighting UF's leadership in ecological research.



30+ Countries
analyzed for insect herbivory patterns



192
ECOLOGISTS
contributed data and expertise



503 PLANT SPECIES
analyzed for insect herbivory patterns



Phase 2
Expanding data and building future protocols

Dancing Spiders Inspire Wonder



Dr. Lisa Taylor’s lab worked with the Florida Museum of Natural History to create an exhibit featuring giant colorful photographs, hand-painted 3D-printed models based on micro-CT scans, lab setups showcasing their experiments, and BBC footage of their research from David Attenborough’s ‘Life in Color’. The physical exhibit is now available online [here](#).

The lab collaborated with Veritasium on the documentary ‘[What Jumping Spiders Teach Us About Color](#)’, featuring lab members and collaborators explaining how they study color vision and what they have learned (UF work starts at 18:42).

As of March 2025, it has been viewed nearly 4 million times. Another version, ‘[Spider Vision: Decoding Color](#),’ is available on Curiosity Stream.

The lab also has a traveling exhibit to share the spider love, featuring live, touchable spiders, kid-friendly microscopes, spider dance videos, and coloring activities. It has appeared at local events like Pints and Predators and the Florida Bat Festival, allowing visitors to see these tiny creatures up close—and maybe even develop an appreciation for their charm.

Nematode Puts Guava & Dragon Fruit at Risk

Meloidogyne enterolobii, the “guava” root-knot nematode, is an aggressive pest threatening agriculture in Florida and beyond. Unlike other root-knot nematode species, it can bypass resistance in crops like tomato, sweet potato, and pepper, making it a growing concern. First found in a Florida nursery in 2004, it now affects over 80% of surveyed guava fields in Miami-Dade County. This pest forms a damaging disease complex with the fungus *Neocosmospora falciformis*, leading to guava decline and 20–80% yield losses. With nearly 700 acres of guava grown in Florida—the nation’s largest production—this poses a serious threat.

Now detected in the state’s expanding dragon fruit industry, *M. enterolobii* highlights the urgent need for sustainable solutions. Dr.

Abolfazl Hajihassani at UF/IFAS Fort Lauderdale REC is leading efforts to identify resistant guava and dragon fruit varieties and evaluate biocontrol agents and bionematicides. His work is critical in safeguarding Florida’s tropical fruit industries and highlights UF/IFAS’s leadership in tackling emerging plant health challenges.



Meloidogyne enterolobii

More Than a Million

External awards from government, industry, and non-profits allow us to achieve our research, teaching, and extension goals. In partnership with our excellent research administrators, the department secured >\$13.5 million in contracts and grants in 2024. Four faculty members were awarded five grants in excess of \$1 million.

Nathan Burkett-Cadena, Florida Medical Entomology Laboratory, for his grant from the Centers for Disease Control and Prevention: “STEP Strengthening Training, Evaluation, and Partnerships to support vector-borne disease capacity in the Southeastern USA.”



Dr. Nathan Burkett-Cadena



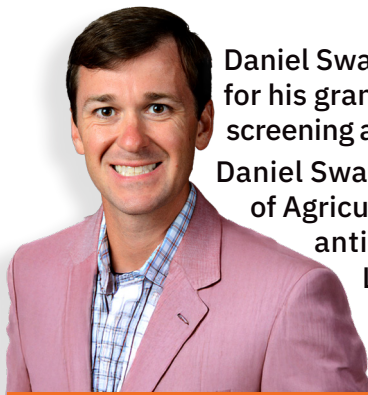
Xavier Martini, North Florida Research and Education Center, for his grant from the US Department of Agriculture’s National Institute of Food and Agriculture: “Integrative management of whiteflies for organic cucurbit production in the US Southeastern region.”

Dr. Xavier Martini

Andrew Mongue, Gainesville campus, for his grant from the National Science Foundation: “Phylogenetics of bagworm moths: a model system for studying the evolutionary genetics of sexual dimorphism.”



Dr. Andrew Mongue



Daniel Swale, Gainesville campus and Emerging Pathogens Institute, for his grant from a non-profit organization: “High-throughput in vivo mosquitocide screening assays.”

Daniel Swale, Emerging Pathogens Institute, for his grant from the US Department of Agriculture’s National Institute of Food and Agriculture: “Development of novel antifeedant insecticides to prevent horizontal transmission of *Candidatus Liberibacter asiaticus* by the Asian Citrus Psyllid, *Diaphorina citri*.”

Dr. Daniel Swale



In February 2025, Entomology and Nematology faculty gathered at the UF/IFAS Plant Science and Education Unit in Citra for a 2-day strategic retreat, the first in-person gathering of faculty statewide since before COVID.



UF/IFAS Entomology and Nematology Department

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