

SPRING 2026

BUGGED

Department of Entomology Newsletter



Department of Entomology
MICHIGAN STATE UNIVERSITY



Photo by Bill Ravlin

From the Chair

BY HANNAH BURRACK

Spring is time to celebrate at MSU Entomology! This month we will honor award winners in the department and beyond, celebrate our graduates, and look ahead to the summer.

Recognizing excellence: MSU Entomology students, faculty, and staff have received honors at MSU and beyond! In February, the College of Agriculture & Natural Resources Alumni Association recognized Dr. Megan Fritz with the Outstanding Up and Coming Alumni Award and Dr. Ned Walker, one of Megan's graduate mentors, with the Distinguished Faculty Award. This spring, the Entomological Society of America's North Central Branch honored Dr. Zsofia Szendrei, Dr. Max Helmberger and Dr. Therese Poland, and graduate student Jen Roedel received the MSU Graduate Student Award for Community Engagement Scholarship. In May, Steve Van Timmeren will receive the Excellence in Research Performance and Support Award and Dr. Eric Benbow will receive the Research Career Award at the CANR Faculty & Staff Awards Reception. We celebrate our department awards on April 30th. I hope to see many of you there!

Exciting transitions: A total of 11 graduate students (6 M.S. and 5 Ph.D.) graduated during the 2025-2026 academic year, and 6 undergraduate majors and 3 minors received or will receive their degrees. I'm excited to get closer to my goal of shaking the hands of at least 5 undergraduate graduates at spring commencement. With at least 13 new majors planning to join us this fall, I'll be there soon!

Maintaining connection: In these frequently changing times, I want to share how much I value our connections with alumni and friends. Thank you for your support and engagement; it means the world to MSU Entomology.



Hannah J. Burrack
Chairperson

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Graduating Students

Undergraduate Students:

Majors

Fall Semester:

- Dylan Minor

Spring Semester:

- JJ Bird
- Charlotte Caldon (Lyman Briggs)
- Griffin Goss
- Cooper Krueger

Summer Semester:

- Patrick McCrackin
- Bella Balabuszko Reay

Minors

Fall Semester:

- Paige Topping

Spring Semester:

- Lorenzo Uccelli Arias

Summer Semester:

- Carson Binotto (Lyman Briggs)

Congratulations to our Entomology graduates from the 2025–26 academic year. We applaud their accomplishments and wish them continued success in their academic and professional journeys!

Graduate Students:

Fall semester:

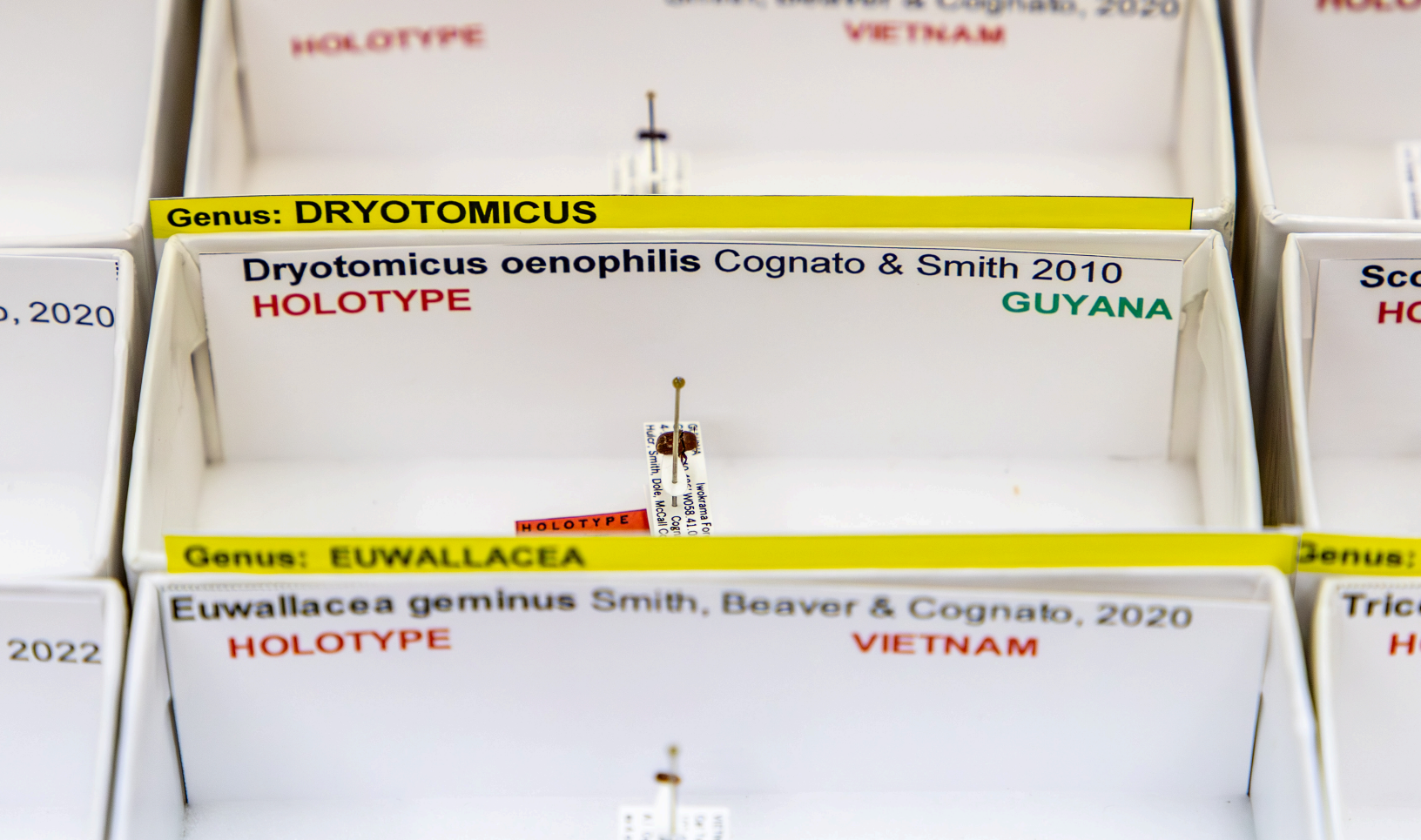
- Paige Payter

Spring Semester:

- Martín Brubaker
- Nate Howder
- Kevin Postma
- Ray Rantz
- Jennifer Roedel
- Shatrughan Shiva
- Mikaela Shutter-Trexell
- Kelly Waters

Summer Semester:

- Jenna Byrne
- DeShae Dillard



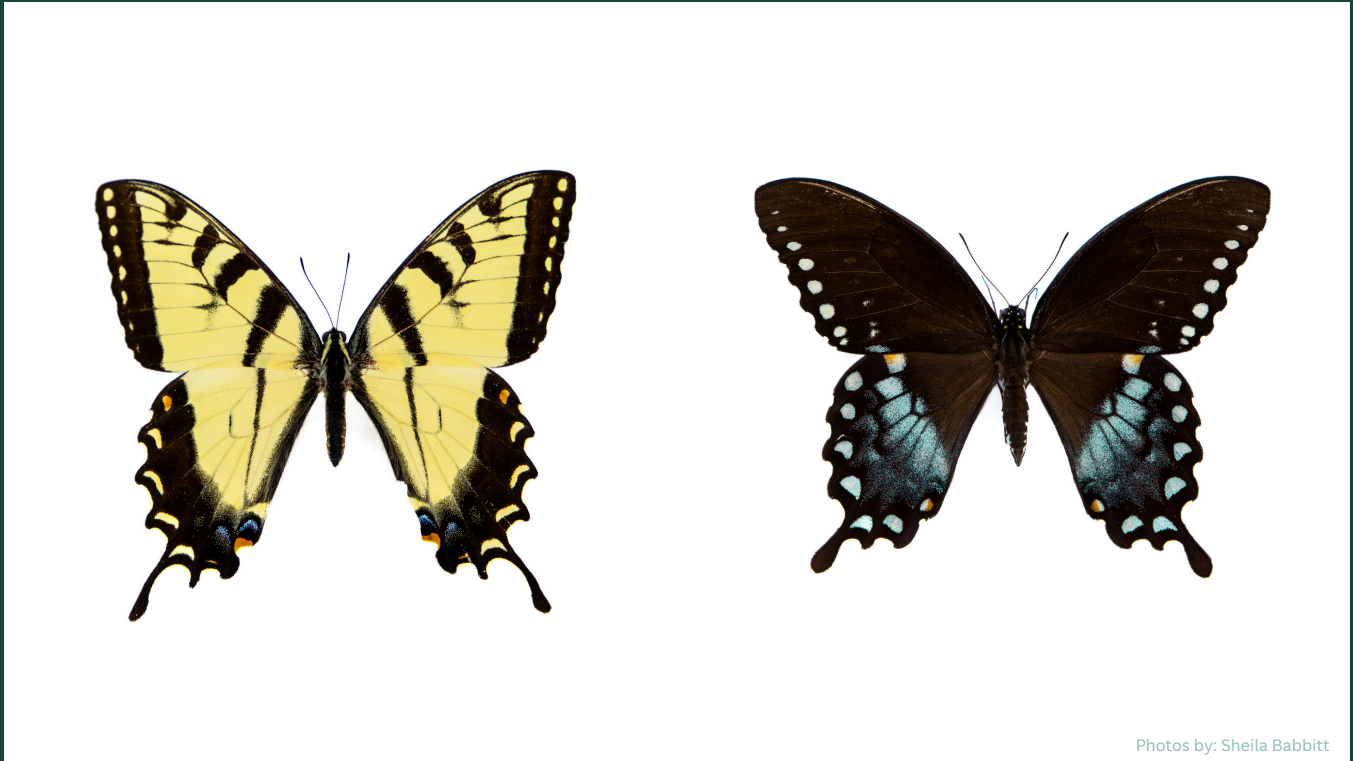
Etymology in Entomology

BY ANTHONY COGNATO & SHEILA BABBITT

When someone says, “Ewww, a daddy longlegs!”, what type of animal do you think of first? A spider (*Pholcus spp.*), a fly (*Tipula spp.*), or a harvestman (*Leiobunum spp.*)? The animal could be any one of those because, depending on your age or where you live, names are used differently.

Sometimes one name is applied to multiple different species, or multiple names are applied to one species. This can cause confusion in biological experimentation and observation. Referring to a species as “Daddy longlegs” does not allow for the repetition of an experiment due to the ambiguity of the name, and repeatability of experiments or verification of observation, in part, defines science.

To solve this problem Carl Linnaeus (1707–1778) devised a naming system to apply to animals and plants. Just like many people who use two names, a first and surname, Linnaeus created a binomial system, where a generic name is followed by a specific name. This combination provides a system of unique species names.



Papilio glaucus

Papilio troilus

Take swallowtail butterflies described by Linnaeus, for example. The genus *Papilio* includes more than 500 species, but *Papilio glaucus* is mostly yellow and feeds on the leaves of many different tree species, while *Papilio troilus* is an iridescent black and green butterfly that feeds mainly on plants in the laurel family. Although both are swallowtails, their scientific names are uniquely tied to each species and allow scientists to clearly distinguish between them during research and observation.

When a species is discovered, it is described and named. A unique species name is always given and if the species does not belong to a known genus, then a new genus name is also given. Rules for naming species were established over 100 years ago.

Traditionally, names are Greek, Latin or Latinized words, but the use of modern languages is becoming more common. Names originate from three common themes: 1. a descriptor of something striking about the animal's appearance or biology, 2. a place, or 3. a person or thing (real or fictional).

Creation of names ranges from the dull to the imaginative, for example, *Musca domestica* Linnaeus (literally meaning "house fly") and *Musca crassirostris* Stein (literally meaning fat-snouted fly). However, given that over a million species names have been used, contemporary authors are more creative in the need to compose unique names.

Over the years, researchers associated with the A.J. Cook Arthropod Research Collection (ARC) have described new species and deposited specimens that represent the species name in the collection. These "holotype" specimens have great scientific value because they

represent the concept of the described species. If there is ever any doubt of the species' validity, then the holotype specimen must be examined. The ARC holds 256 holotypes with a variety of scientific names that reflects the species' attributes and the authors' personalities. Below are few examples:

1) *Dryotomicus oenophilis* Cognato & Smith

Literally: "Wine loving tree-cutter," the species was named this because specimens were collected in traps baited with ethanol.



2) *Arixyleborus phiaoacensis* Smith, Beaver, & Cognato

Literally: "The exceptional wood-glutton from Phia Oac," the name refers to Phia Oac National Park in Vietnam. The genus belongs to xyleborine beetles that bore into trees and is notable for its exceptionally beautiful body sculpturing.



3) *Sesia spartani* Eichlin & Taft

Literally: "Spartans' clearwing moth," the species was named in honor of the MSU Spartans and reflects discovering researcher Taft's academic home.



One could make a study out of species names, their meanings and the authors' motivations. The names often reflect current culture and the values of the authors. Indeed, hundreds of species are named for pop stars, heroes, heroines and villains of reality and fiction. These names may seem flippanant, but no matter the pop star, the scientific species name is an important tool that allows scientists to effectively communicate among current and future researchers and the public.



Photo by: Bill Ravlin

Where Art Meets Science: MSU Entomology Collaborates on Broad Museum Darkness Exhibit

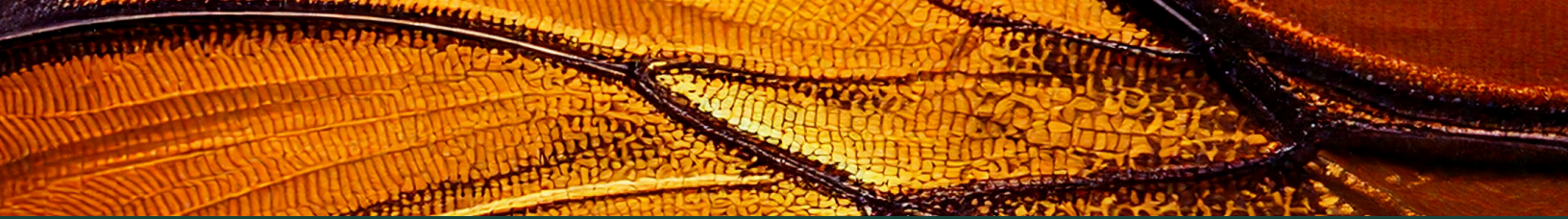
What happens to life when the lights never go out? That question sits at the heart of Darkness, a new exhibition at MSU's Eli and Edythe Broad Art Museum created by Chicago-based artist Jan Tichy in collaboration with four MSU labs and campus partners.

The exhibit was developed through a campus-wide collaboration, with MSU entomologists playing a key role. Amanda Lorenz, director of the Bug House, helped bring insects into the spotlight for the exhibit, which explores biology's relationship to light and its absence. Over the course of nearly nine months, Tichy visited the Bug House, joined Bug Club

activities and worked with Lorenz and other department members to develop ideas for public engagement through insects.

The collaboration was a natural fit, with the exhibit aligning closely with the Bug House's mission to provide a welcoming environment for learning about insects. "I love that the Bug House can be a space for interdisciplinary innovation, and I hope this work encourages people to think more about light, darkness and the insects that quietly support our ecosystems every day," Lorenz said.

As part of the project, the Bug House led arthropod sampling and identification on the museum grounds throughout spring and summer of 2025 using backlighting, a method that uses light at night to attract insects for observation and collection. The effort also relied on support from Academic Specialist Max Helmberger, who assisted



with insect sampling and public blacklighting events. Specimens collected at the events were then photographed for the exhibit, and a selection were later cast in resin for museum visitors to view up close in the educational portion of the exhibit.

Photographed above is one of the insects collected during this work, a bicolored crown wasp. The image was created by Bill Ravlin, professor emeritus, using a detailed 12-image composite. Tichy and Ravlin also worked with Sarah Smith, curator and collection manager of the A.J. Cook Arthropod Research Collection, to create high-resolution macro photography featured in a companion planetarium show at Abrams Planetarium on campus.

Students also played a major role behind the scenes, including recent MSU entomology graduate Dylan Minor, who spearheaded insect sampling and identification, as well as August Duckworth and Araya Pore. Many Bug Club members also participated in the public blacklighting events, with entomology Ph.D. student Junkai Wang providing key equipment and expertise for the events.



Left to right: Amanda Lorenz, Jan Tichy, Dylan Minor

In addition to working with the Department of Entomology, Tichy also collaborated with the Department of Animal Science, the Department of Psychology and the Department of Horticulture. “The collaborations with four MSU labs around the theme of darkness and its influence on human life is not about illustrating research, but about inspiring new perspectives and sharing our different audiences,” Tichy said.

Darkness is on view through July 26, 2026. Related programs at Abrams Planetarium will feature narratives and visuals from each collaborating group and further explore how light shapes the behavior, rhythms and survival of living things. The exhibit was also recently featured in a [New York Times arts special](#).



This summer, check out more work by Bill Ravlin, professor and chairperson emeritus, in his insect photography exhibit at the Kalamazoo Nature Center. *Bug’s Eye View: A Celebration of Arthropod Art* includes Ravlin’s section, *Entomophilia: For the Love of Insects*, and will be on display May 11 through July 31.



Tatter Fellowship Announcement



Shelley Linder Spotts

The Michigan State University Department of Entomology has named Shelley Linder Spotts the first recipient of the Tatter Family Entomology Graduate Fellowship, a competitive award that supports outstanding graduate students pursuing advanced training in entomology at MSU.

Linder Spotts will be advised by Marianna Szűcs, associate professor of entomology, and will focus her research on improving the reliability of beneficial insects used in greenhouse biological control. Her work addresses a major challenge for growers by using evolutionary approaches to strengthen traits such as establishment and performance, helping biological control become a more practical and effective pest management tool.

Linder Spotts will be joining MSU entomology after three years of professional experience with Koppert Biological Systems, a commercial producer of biological control agents serving greenhouse growers. “I am most excited to blend the evolutionary focus of my Masters’ work with the perspective I have gained working in industry,” Linder Spotts said.

Szűcs said she is especially excited to mentor Linder Spotts because of her ability to connect basic science with real-world applications. “Shelley is already thinking at the interface of theory and application, which has long been the focus of my lab’s research and is exactly where we need more innovation in biological control,” Szűcs said. She added that Linder Spotts’ industry experience will help the lab think creatively about applied solutions.

The Tatter Family Entomology Graduate Fellowship provides a fully funded graduate research assistantship, including a \$35,000 annual salary for the 2026–27 academic year, health benefits, tuition and \$5,000 in research and travel support. The fellowship is awarded for one year and may be renewed for a second year based on progress.

The fellowship is supported by the Tatter Family Endowment for Excellence in Entomology, established in honor of Jordan Tatter, a 1960 MSU entomology graduate. The endowment reflects the Tatter family’s long-standing commitment to entomology, agriculture, natural resources and to supporting the next generation of scientists.

Through the Tatter fellowship, MSU continues to invest in graduate researchers whose work strengthens sustainable agriculture and advances practical, science-based solutions for growers.

Research News

Long-term study highlights key drivers of potato beetle trends

A 16-year study led by MSU entomologist Abigail L. Cohen, with Zsafia Szendrei, found heat is the strongest driver of Colorado potato beetle abundance, with precipitation and air and soil moisture also influencing outbreaks. The findings suggest extreme heat boosts populations more than extreme cold suppresses them, prompting the team to develop forecasting tools to help growers better anticipate beetle pressure.



New study finds bees swim, use dark areas to survive

New research from Michigan State University shows honeybees can propel themselves across the surface of water and swim directionally toward darker areas, a behavior that likely helps them locate shorelines and escape drowning. The movement is driven by continued wing motion that creates a hydrofoil-like effect, pushing bees forward even when their wings are wet. The study also found that exposure to a common insecticide disrupted this behavior.



MSU Study Reveals Key Insights into Invasive Scale Insect Behavior in Mississippi River Delta

An MSU study led by entomologist Andrea Glassmire found that an invasive scale insect concentrates on the lower stems of wetland grasses in Louisiana's Mississippi River Delta, where plant defenses are lower. The research shows that plant chemistry plays a key role in where insects settle and helps explain how the pest spreads so effectively. The findings could inform more targeted management strategies to protect vulnerable wetland ecosystems.



[New study shows rapid hormonal rise in honey bees due to heat shock is mitigated by social conditions](#)

New research from MSU shows that heat triggers a sharp hormonal spike in honey bees only when they are isolated. Bees exposed to 40°C alone showed increased juvenile hormone levels, while bees kept in groups remained stable, highlighting the protective role of social conditions. The study also found that a pheromone produced by forager bees helps suppress this stress response, suggesting colonies may be more resilient to rising temperatures than previously thought.



[MSU research bolsters Michigan blueberry industry](#)

Michigan State University research and Extension partnerships are helping strengthen Michigan's \$529 million blueberry industry through variety development, pest and disease management and decision-support tools. Growers credit MSU programs such as Project GREEN and Enviroweather with delivering timely, applied research that supports long-term productivity and sustainability.



[Rethinking Insect Collecting in K-12 Science Education](#)

A newly published paper by Peter White, Chris Brown and collaborators examines insect collecting in K-12 science education amid growing ethical and conservation concerns. The authors highlight its educational value and propose an ethical framework to help educators balance hands-on learning with environmental stewardship.





Other News

MSU Pesticide Safety Education Program launches new self-paced Pest Management courses

MSU's Pesticide Safety Education Program has launched two new self-paced online courses focused on fruit pest management and vegetable pest management. The courses help pesticide applicators strengthen crop-specific skills while earning RUP recertification credits and offer a flexible, online option for continuing education.



MSU Bug Club Sees Record Attendance and Attends ESA Conference in Portland

MSU Bug Club saw record attendance in 2025, highlighting growing student interest in entomology across majors. Club leaders also represented MSU Entomology at the Entomological Society of America annual conference in Portland, Oregon, where they hosted a table and connected with entomologists from around the country.



MSU Entomology Students Recognized by NSF Graduate Research Program

MSU Entomology welcomed two new Ph.D. students this fall, both of whom earned recognition for their research proposals. Ph.D. student Kristin Leutgeb and former undergraduate research assistant Eva S. Conley were selected for National Science Foundation Graduate Research Fellowships and Ph.D. student Amelia McGinnis received an honorable mention.



Undergrad to Post-Doc: Meet Anne Johnson

Q: What originally brought you to MSU and how did you choose entomology as an undergrad?

A: I always loved insects and knew I wanted to be an entomologist as soon as I found out it was an option, including dressing up as an entomologist for a “what you want to be when you grow up” play in elementary school! Given this interest at a young age, I actually first connected with MSU as a kid when I participated in the Insect World Science Camp, first as a camper and then later as a junior counselor. It was a lot of fun and definitely made Michigan State my first choice when it came time to apply to college!

Q: In your current postdoc, what questions or problems are you working on?

A: We are looking at how the environment of the United States affects parasitoids of emerald ash borer. The effects of winter on diapause and potential alternative hosts are the main factors we are focusing on right now.

Q: Was there a particular moment, class, or mentor that sparked your interest in insects or forest entomology?

A: My interest in forest insects stems from a very young age as well, as I grew up interacting most often with the insects and other arthropods found in the woods in our backyard growing up. Invasive insects held a particular fascination for me after emerald ash borer came through our area when I was a kid, as it was incredible to realize that something so small could cause such a huge change in the landscape. It's absolutely incredible to be able to research these insects now!



Anne Johnson

Q: Did you work with any faculty or labs as an undergrad? How did those experiences shape your interests or career direction?

A: As an undergrad, I worked with quite a few of the faculty in the entomology department. I took pretty much all of the entomology classes that were available, for which all of the instructors were fantastic and definitely helped me solidify which areas of entomology I was interested in.

Outside of class, I worked in Rufus Isaacs' lab, which is where I really got interested in some of the integrated pest management tactics that could be used to control invasive insects with fewer impacts on beneficial species we want to conserve. My first paper I was ever an author on coming out of this lab was based on work around how altering humidity through mulching or changes in irrigation could potentially act as a cultural control for spotted wing drosophila. In my final year of undergrad the lab started working on spotted wing drosophila parasitoids, which really got me interested in biological control and has

continued to be a feature in a lot of the research I do.

I also really enjoyed working with Amanda Lorenz as part of the Bug Club in undergrad, and really enjoyed the outreach work I was able to do in the Bug House. This actually inspired me to volunteer as the Entomology Department Outreach Coordinator while I was at Penn State, where I got to continue doing outreach work by taking care of their Insect Zoo and organizing outreach events, which was definitely a lot easier based on the experiences I had gained here! It's fantastic to be able to come back here and help out with Bug House events again.

Another notable faculty member who I worked with was Deb McCullough. I was in the Honors College as an undergrad, and as part of that students were able to make a course into an Honors Option by doing additional work. I did this for Diseases and Insects of Forest and Shade Trees, which Dr. McCullough teaches, and through this was able to help produce my first Extension publication and the first for the University on spotted lanternfly. This helped me learn a lot of the background information for this invasive insect and become familiar with the research on it that existed at that time, which helped inspire the direction of my Ph.D. thesis. It also helped me learn how to communicate to different audiences, which has been very useful as I have done further Extension work in my career.

Q: How did your experiences at MSU prepare you for graduate school and eventually a postdoc position?

A: Being an entomology undergrad at MSU prepared me really well for graduate school and even the work I'm doing as a postdoc now. I went straight into a Ph.D. program,

but didn't feel at all behind people who had done master's degrees first as I already had experience in the basics of entomology and research experience from my time at MSU. I even had more experience in entomology than some of my fellow grad students who hadn't had the opportunity to do a degree in it before. Having the chance to be in a lab environment so early in my career and look into different areas of entomology definitely helped me discover what I was most interested in and what research I wanted to do now and in the future.

Q: Do you have a favorite memory or defining moment from your time in the department?

A: So many! I loved any time I was in the Bug House, especially Bug Club meetings. Beepalooza was also a lot of fun to help out with, as the gardens here are beautiful and it was fantastic to be able to spend a day enjoying them and sharing what I loved about insects with people. I also really enjoyed going with friends to find winter stoneflies when they emerged from the river, and it was great to see them again only a few weeks after I returned as a postdoc!

Q: What made you want to continue your career within MSU Entomology?

A: I had a fantastic time at MSU as an undergrad, and love living in Michigan. It also was amazing to finally have a chance to work on my favorite pest management tactic (biological control) for the invasive insect that first drew me to forest entomology as a kid.



Dan Stanley

Hometown: Northville, MI

Major or Minor: Major

Expected Graduation: 2027

What inspired you to choose entomology as your area of study?

I have always loved the natural sciences, but it took me a while to land on entomology as my area of study. My dad influenced my decision a lot, since he is a plant ecologist who studied at MSU and would bring my brothers and me to a lot of gardens and state parks when I was younger. He taught me about the natural world which piqued my interest in plant and insect sciences, and made me want to learn more.

Are there any specific projects, research, or extracurricular activities you're involved in related to entomology?

I have had two opportunities to work as a student research assistant. I have worked with Dr. Zach Huang and Dr. Chunqi Qian on research tracking honeybee movement, and in Dr. Rufus Isaacs' lab on the management of berry crop pests, where I am responsible for a variety of different tasks. Whenever I have time, I attend Bug Club meetings, in which I have done cool things like light trapping insects at night and sampling dishes such as Isopod Fettuccini Alfredo, Chocolate Chirp Cookies, and of course, fried cockroaches.

What do you enjoy doing outside of your studies? Do you have any hobbies or interests you're passionate about?

Whenever I have time, I like to go adventuring with my friends, traveling, and trying out international cuisines. I also love cooking new recipes on the weekends. When the weather is nice, I enjoy hanging out near Beal Garden in my hammock with a good book.

Is there a particular insect or topic in entomology that fascinates you, and what drew you to it?

I LOVE bees! I have been fascinated with bees ever since my dad taught me how to pet bumblebees when I was four. This memory really stuck with me, and sparked loads of curiosity throughout my childhood. Fun fact: Bumble queens can survive for a whole week underwater.



Martín Brubaker Salcedo

Hometown: Lowell, Michigan
Previous education: Rural Sociology and Geography;
University of Wisconsin - Madison
Advisor: Julianna Wilson
Expected Graduation: 2027

What sparked your initial interest in entomology, and how has it evolved over time?

I took an entomology taxonomy course to fulfill my biological science credits because the regular biology class was full. I knew almost nothing about insects, and the first insect I caught turned out to be a tick, which was a little embarrassing. But collecting insects for that course was a blast and spurred my love for the field. I think having a daughter has shown me how insects are a very accessible way to learn and appreciate nature. I studied sociology to better understand the world around me, and I think insects allow us to do the same.



Could you tell us a bit about your current research? What are you focusing on, and what impact do you hope it will have?

I study Woolly Apple Aphid phenology, or when and where woolly apple aphids are in the orchard. The goal of this research is to lay the foundation for why we seem to be hearing more reports about woolly apple infestations becoming a problem in orchards in Michigan. The idea is that this research can help lead to improved management of the insect to prevent damage to apple trees and save growers money.

What's your favorite part about being at MSU, whether it's related to campus life, research, or the people you work with?

I've enjoyed being on the entomology trivia team and practicing for the ent games. I used to gamble on Jeopardy, but I kept losing, so I decided to attend entomology trivia instead. I still get a lot wrong, but now I don't lose money.

Have you had any mentors or colleagues at MSU who've been influential in your academic journey?

Steve Van Timmeren in the Isaacs Small Fruit Entomology lab gave me my first job in entomology, 8 years after graduating from my undergrad. I worked for him for a couple years at Trevor Nichols Research Center before grad school and he taught me a lot about applied entomology research. One thing Steve said to me was that you don't always need a lot funding to do good entomology research, you just need a good question.

Do you have a favorite insect, and if so, what makes it stand out to you?

I really like African Dung Beetles (*Scarabaeus satyrus*). They can use the glow of the Milky Way to navigate at night, which I think is beautiful. We have a community-run observatory in my hometown, and I like to imagine the dung beetles using it to gaze at the stars.



Department of Entomology
MICHIGAN STATE UNIVERSITY



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Just as insects create the biological foundation for ecosystems, you provide the basis of support that allows our entomological work to continue. Your support provides access for students to hands-on learning, advanced training and travel to network and share their results. It empowers faculty to conduct innovative and impactful research. Your support allows us to share the wonders of insects with children of all ages. To show our appreciation for your generous support this year, we will send you the second in our series of commemorative coins featuring *Sesia spartani*, which represents our theme for this year, Embracing Diversity. Each year, when you submit your tax-deductible donation to MSU Entomology, we will send you the next coin in the series. Collect all five by committing your support over five years, and we will send you a shadow box to display your collection. Entomology is a gateway to a more inclusive community. Not only does your gift support the department, but you are changing lives in the process. Become a part of Bugs Work! [Donate today.](#)