

FALL 2024

BUGGED

Department of Entomology Newsletter



Department of Entomology
MICHIGAN STATE UNIVERSITY



Photo by Bill Ravlin

From the Chair

BY HANNAH BURRACK

FALL CONNECTIONS Fall is a season for Entomologists to connect. Our faculty, students, and staff engaged in field research return to the lab and office to process samples and review data, our department members connect with friends and colleagues at scientific meetings, and extension specialists gear up for opportunities to share their results and recommendations with external stakeholders.

CELEBRATING OUR FALL GRADUATES We look forward to celebrating our MSU Entomology graduates at Fall 2024 Commencement on December 14th. Undergraduate students include Winter Krajci, who is set to complete the Entomology major, and Laura Pennock and Olivia Schassburger, who will earn minors in Entomology. Advance degree graduates include Dr. Haosu Cong (PhD, Chung Laboratory) and Mr. Andrew Jones (MS, Wilson Laboratory).

NATIONAL EXCELLENCE MSU Entomology Department students and faculty received several awards at November's Entomological Society of America Annual Meeting! Look inside for more information on our award winners.

MSU ENTOMOLOGY IS GROWING As we look forward to 2025, MSU Entomology is excited to welcome Dr. Andrea Glassmire who will begin as an Assistant Professor in January. Dr. Glassmire joins us most recently from her position as a post-doctoral scholar at Louisiana State University where her work focuses on interactions between plants, microbes, and herbivores in wetland systems. Dr. Glassmire has strong connections with MSU Entomology. She completed a USDA NIFA postdoctoral fellowship under the direction of Dr. Will Wetzel, and we are looking forward to welcoming her back!

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We are also looking forward to welcoming more new faculty members in the near future. This fall semester, we concluded interviews for our new Assistant Professor of AgInformatics, and we will be bringing candidates for our Assistant Professor of Medical and Veterinary Entomology to campus in early 2025.

I am also pleased to introduce Sheila Babbitt to the MSU Entomology community. Sheila joined MSU Entomology in October and is supporting communication & outreach efforts for the department as well the Emerald Ash Borer Network, a collaborative program between Dr. Deb McCullough's Forest Entomology Lab and the USDA Forest Service, and the College of Agriculture and Natural Resources International Programs. Sheila joins us most recently from University of Michigan, and we are thrilled to have her on board!

TOGETHER, WE CELEBRATE As we look to the end of the year and beyond, MSU Entomology is so thankful for the support our alumni and friends provide to our department. If you are interested in supporting Entomology at MSU and participating in our 2024-2025 Academic Year support theme, Embracing Diversity, you can find more information inside. Please also save the date and plan to join us April 24, 2025 to celebrate our Entomology Department award winners and recognize those who make our awards possible.

Happy fall!



Hannah J. Burrack
Chairperson

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Photo by Bill Ravlin



Entomology 2024

MSU Entomology showcased excellence at the annual meeting of the Entomological Society of America in Phoenix, AZ! Congratulations to our students and faculty who received awards and recognition this year. Your achievements highlight the talent and dedication within our department —well done!

ACHIEVEMENT AWARDS

Dr. Deb McCullough received the national Award for Excellence in Integrated Pest Management

Winter Kracji received the Plant-Insect Ecosystems Section Undergraduate Student Achievement Award

STUDENT COMPETITION AWARDS

Ignatius Andika was awarded second place in the P-IE Section: IPM Horticulture presentations.

Ray Rantz was awarded second place in the P-IE Section: IPM General and Field Crops presentations.

River Mathieu was awarded first place in the P-IE Section: Ecology and Toxicology presentations.

Zhuo Chen was awarded first place in the PBT Section: Physiology presentations.

Jordy Hernandez was awarded first place in the SysEB: Ecology, Evolution, and Systematics posters.

Chris Brown was awarded second place in the P-IE and FIT: Biodiversity and Conservation posters.

MSU Entomology Faculty Member Works to Develop Yeast-Based Biopesticides for Spotted-Wing Drosophila Management

Dr. Julianna Wilson, Assistant Professor of Tree Fruit Entomology, has been awarded a USDA NIFA Crop Protection and Pest Management (CPPM) Applied Research and Development (ARDP) applied research grant focused on the invasive spotted-wing drosophila (SWD), which impacts cherry and berry crops. The project will explore the use of RNA interference technology combined with yeast to develop species-specific biopesticides targeting SWD. This method aims to reduce reliance on traditional insecticides, potentially decreasing environmental impacts and production costs for farmers. Preliminary findings have identified key RNAi targets, positioning this research to contribute to pest management strategies in North America and other regions. Read more about Wilson's project [here](#).





Sarah Smith Leads Southeast Asia Workshops on Bark and Ambrosia Beetles

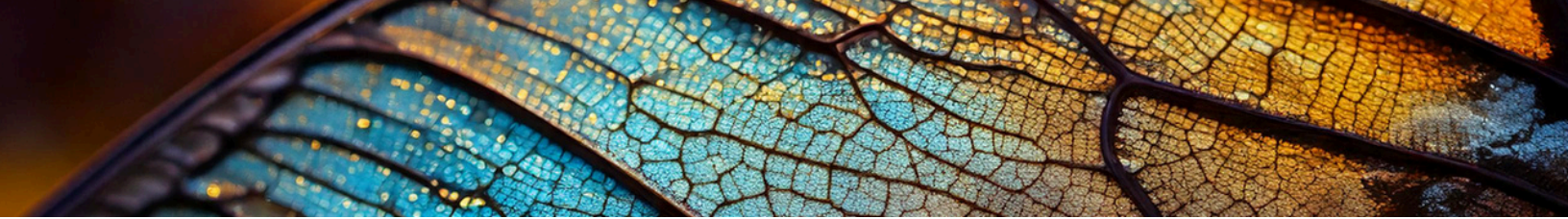
In October, Sarah Smith traveled to Southeast Asia to lead three workshops focused on bark and ambrosia beetles. Bark & Ambrosia Beetle Academy in Malang, Indonesia, attracted 30 students from various countries, where Smith co-instructed sessions on beetle collection, identification, and ecology. Following the academy, she led mini-workshops in Laos and Cambodia, engaging 25 participants in hands-on training about beetle morphology and identification techniques. This initiative was made possible through a collaboration with Dr. Jiri Hulcr from the University of Florida and Dr. Simon Lawson from the University of the Sunshine Coast (Australia).



MSU Entomology Alumnus Describes New Parasitoid Wasp Species That Attacks Adult Flies

MSU Entomology alumnus and current professor and curator of the Insect Museum at the University of Wyoming, Dr. Scott Shaw (B.S. 1978), is part of a team who recently published an article in *Nature*, titled “*Drosophila* are hosts to the first described parasitoid wasp of adult flies.” This represents the first discovery of any wasp parasitizing the adult stages of any Diptera and also appears to be the first time that any insect has been described and named for the first time in the pages of *Nature*.

In addition to describing this new species, *Syntretus perlmani*, the team also described the wasp’s life cycle and rearing methods. Particularly noteworthy, this newly described species has been widely reared from flies collected in baited traps throughout the southeast. Videos of *S. perlmani* in action are available via [Mississippi State University](#), where lead author of the study, Matthew Ballinger, is based, and on [Dr. Ballinger’s X profile](#).



North Central Region SARE Program Supports Three MSU Entomology Students with 2024 Graduate Student Grants

MSU Entomology graduate students were exceptionally well represented among the 22 recipients of the 2024 North Central Region Sustainable Agriculture Research and Education (NCR-SARE) Program Graduate Student Grants. In fact, all three grants awarded to students from MSU were to Entomology Ph.D. students DeShae Dillard, Cindy Fiser and Rekha Bhandari, and half of the Entomology support projects were from MSU with other Entomology grants going to students at University of Wisconsin, the Ohio State University, Purdue University and University of Illinois.

Congratulations to all our NCR-SARE awardees!



DeShae Dillard, a Ph.D. student co-advised by Doug Landis and Hannah Burrack, is evaluating the effect of sustainable agricultural intensification practices on fly biodiversity and the ecosystem services provided by this highly diverse and abundant group in partnership with the [Long-Term Agroecosystem Research site](#) and the Kellogg Biological Station. His NCR-SARE grant, “Harnessing Diptera Diversity as a Bioindicator for Carbon and Nitrogen Loss During Litter Decomposition,” additionally focused on the role of flies and other macroinvertebrates in litter breakdown and nutrient cycling.

Cindy Fiser, a Ph.D. student working under the direction of Doug Landis, will focus on engaging communities in her project, “Barriers to Adoption of Prairie Strips: Farmer Perspectives.” Prairie strips are a conservation tool to enhance ecosystem services and arthropod biodiversity in agroecosystems, yet adoption in Michigan remains low. Through community engaged research, this project will partner with Conservation Districts, farmers and landowners to host focus groups on the barriers or opportunities to adoption of prairie strips. Cindy hopes to further the role of conservation in agriculture and foster new partnerships between researchers and the public.



Rekha Bhandari, a Ph.D. student working with Rufus Isaacs, is studying the relationship between vinegar flies (*Drosophila* species) and fruit rots in Michigan grown grapes. Her NCR-SARE grant entitled “Interactive Effects of Leaf Pulling and Nontoxic Chemical Interventions on Rot Management in North Central Region Vineyards” will assess cultural control tactics for grape diseases.



G.W. Bird Family Foundation Celebrates Environmentally Sound Agricultural Day

On November 21, 2024, the G.W. Bird Family Foundation hosted its second annual Environmentally Sound Agricultural Day at Michigan State University, showcasing innovations in sustainable agriculture. Highlights included a symposium on sustainable rice farming led by Shekhar Bhadsavle of India's Saguna Rural Foundation and a keynote address by Dr. George A. Smith, director of MSU AgBioResearch, on Michigan's agricultural diversity and resilience. The evening concluded with a banquet honoring 2024 Environmentally Sound Agricultural Hero Award recipients Gene Garthe, Shekhar Bhadsavle, and Dr. Jason Rowntree for their contributions to sustainable farming practices.



Andrea Glassmire Joins MSU Entomology

The Michigan State University (MSU) Plant Resilience Institute (PRI) is excited to announce the hiring of Dr. Andrea Glassmire as an Assistant Professor, effective January 2025. Dr. Glassmire will hold joint appointments in the departments of Entomology and Plant Biology.





Charlie Rudolph

Hometown or state or country: Pittsburgh, PA
Major advisor: Dr. Amanda Lorenz

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

I just love bugs! Ever since I was a child, I've found them fascinating. But unfortunately, not many people shared my interest. So I decided to go to college for it, mainly to learn more about the bugs, but also to meet like-minded people.

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

I am currently the vice president of the MSU Bug Club! It's always a blast hanging out with my friends, and getting to talk about bugs while we do is even better.

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

I like lacewings. I guess I'm drawn to how competent they are as hunters in their larval stage, only to turn very clumsy once they become adults. It goes against many people's perception of metamorphosis, and I think that's beautiful.

What's something unique about your journey to MSU or studying entomology that you'd like to share?

I'm not originally from Michigan, I'm from Pittsburgh. I actually came to MSU for the express purpose of studying entomology. At first I was worried about the cost, but my niche major actually helped net me a huge scholarship. We had to write essays about what issues we predicted would crop up in our field within the next ten years. I won the contest, and the organizer commented that the unique topic of my essay helped it stand out.

What's been one of your most rewarding experiences in your studies so far?

Over the summer, I got an internship in the Vegetable Entomology lab on campus. The entomology labs are all wonderful, and it is one of the best things you can do to get an internship at one of them.

Have you had any memorable interactions with faculty, mentors, or peers who've influenced your academic journey?

In general, I love how welcoming the entomology department is. In particular, I remember how when I first started here, I was really intimidated by the grad students. When I attended my first GUESS meeting, everyone was super friendly and ready to strike up a conversation. I really appreciated that, and now I'm good friends with some of them!



Cynthia Fiser

Gaylord, Michigan
Previous education: BS in Applied Ecology and Environmental Sciences, Michigan Technological University (Class of 2017)
Major advisor: Dr. Douglas Landis

What or who inspired your interest in entomology?

As an undergraduate student, I was a research assistant in Dr. David Flaspohler's Lab and worked with [then PhD student] Dr. Colin Phifer at Michigan Tech. I was fortunate to be a part of a large, interdisciplinary research project on the effects of biofuels and land use on pollinators, predatory insects, and birds both in the Midwest and abroad. To this day, *Bombus ternarius* (orange-banded bumblebee) is still my favorite insect. My mentor, Colin, encouraged my interest in Entomology and was an advocate for my career in research science.

What are you researching?

My research examines the impact of agricultural landscapes on arthropod biodiversity and ecosystem services. I am currently working within the LTER at Kellogg Biological Station, studying how perennial prairie strips in row crop agriculture affect ground beetle (Coleoptera: Carabidae) communities and pest predation. I am also interested in the intersection of social and ecological science, or how future conservation efforts for diversity in agricultural landscapes will impact the lives of farming communities.

What is your favorite activity, class or responsibility as part of your graduate studies?

I was primarily self-taught in Entomology leading up to my graduate career, and I thoroughly enjoyed taking Insect Taxonomy with Dr. Anthony Cognato my first year. As a graduate student conducting research at the Kellogg Biological Station Long-term Ecological Research main site, I am proud that my work contributes to ongoing studies of long-term insect monitoring and sustainability in agriculture. I love having the opportunity to collaborate with other graduate students and mentor undergraduates interested in research!

What is your favorite thing about MSU?

As a student or faculty of MSU there are so many opportunities for application and partnership with extension or affiliated organizations. I am constantly finding new opportunities to study abroad, apply for research or financial assistance, collaborate with different departments on campus, etc. I chose MSU because it was a land-grant university invested in extension and building relationships with the farming community here in Michigan. These networks have greatly benefited both my research and professional career, and I hope to cultivate them for years to come.



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*Embracing
Diversity*



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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.](#)