

Bugged

MSU DEPARTMENT
OF ENTOMOLOGY

MICHIGAN STATE
UNIVERSITY

Photo by Bill Ravlin, MSU Entomology

FROM THE CHAIR

We probably should have titled this edition of *Bugged* "Metamorphosis!" After a somewhat protracted period, it looks like this will be my last *Bugged* column. January 1, 2022, Dr. Hannah Burrack will assume the chair position and the next chapter of MSU Entomology will be penned. At that point, I will step into a regular faculty position and work to define "the next big thing." That's a tall order, given it will be difficult to beat being the MSU Entomology chairperson!

Another significant change is Dr. Matt Grieshop will become the director of the Center for Organic Production and Research at California Polytechnic Institute, San Luis Obispo. He and his family will move in January. We wish them all the best in their new adventure.

On a solemn note, 2021 was very difficult with the passing of Drs. Fred Stehr, Roger Hoopingarner and Larry Gut. The loss of these stellar entomologists and close friends has been felt by all.

The College of Agriculture and Natural Resources is also going through a molt with Dean Ron Hendrick leaving the college to become provost at Texas Tech University. Dr. Kelly Millenbah assumed the role of interim dean and is doing a great job steering

the college to its next big thing. Anyone interested in being a dean?

On the pandemic front, by most accounts, things have gone as well as can be expected with vaccinations, masks, adjustments in courses, and research and extension programs. We've all become proficient at using Zoom and quite frankly, it has become a standard part of the way we do business. It's clearly not the same as being there in person, but it's added another level of efficiency that is welcome in multiple settings. We'll see what the new year brings.

Your generosity has a huge impact on our people and programs. We greatly thank all of you who have created endowments and funds for MSU Entomology including: Roger Hoopingarner, Jay and Jean McPherson, Rich Merritt, Larry Olsen, Gordon Guyer, and Mark and Kathy Scriber. Of special note are the Roger and Barbara Hoopingarner Endowed Graduate Fellowship in Entomology and, more recently, the Roger Hoopingarner Endowed Professorship in Apiculture/Entomology.

In addition, 2021 ushered in several new contributions including Gary Parsons creating two funds with one going to Bug

House operations and a second going to the A. J. Cook Collection. You can read more about Gary in this edition of *Bugged*.

Last, but clearly not least, I'm pleased to announce three brand new contributions to the Department of Entomology courtesy of the Jordan, Mary Ellen and Stephen Tatter family including: The Tatter Family Endowment for Excellence in Entomology (\$2M); The Tatter Family Fund for Excellence in Entomology (\$350K); and The Tatter Family Fund for Diversity and Inclusion in Entomology (\$350K). These gifts were created in the spirit of Mary Ellen's husband Jordan who was an MSU Entomology graduate student with Gordon Guyer in 1960. A huge thanks to the Tatter family.

What an amazing way to end the year and an amazing way to end my tenure as MSU Department of Entomology chairperson. Thanks to all!!



Bill Ravlin,
Chairperson

RESEARCH & PROJECTS

Peter White has joined MSU science education expert **David Stroupe** in bringing their **MothEd** program to more classrooms nationwide, through a four-year, \$2.4 million grant from the National Science Foundation. Building on their previous research, they will partner with teachers to co-develop free digital learning materials and resources for educators to launch more moth investigations—and excitement about science—around the country. White's previous work



with students and teachers led to the development of an inexpensive simple moth trap that can be made for \$2 and used by virtually anyone, compared to \$150 high-tech models.

There are nearly 11,000 species of moths in North America, but they are understudied by scientists of all ages—including kids. “This project could allow us to gather data and monitor moth diversity and abundance in different parts of the country,” White said. “And it’s fun, it’s getting out there and catching things and learning things about the ecosystem around them. You can’t do that as easily with birds or mammals.”

Read more about this work in the College of Education’s story, [Capturing moths, and kids’ curiosity about science](#).



Marisol Quintanilla will be the global nematode expert on a new **Feed the Future Innovation Lab** for Current and Emerging Threats to Crops. The grant, based at Penn State, has been awarded up to \$39 million over five years to focus on Integrated Pest Management (IPM) research to support development. The team will focus its efforts in West Africa, East/Southern Africa, South/Southeast Asia and Central America.

REMEMBERING PROFESSOR EMERITI Stehr and Hoopingarner

With sadness, we note the Department lost two professor emeriti to death this fall. Stehr and Hoopingarner were known in their respective fields around the world and were generous with their time and support of our students and the Department.

Frederick W. Stehr passed away on October 28, 2021. Stehr was a specialist in systematics with a focus on Lepidoptera and immature insects in general. He also made important contributions to the biological control of agricultural insect pests, especially the cereal leaf beetle and alfalfa weevil. He is perhaps best known for authoring the two-volume “Immature Insects.” Long-awaited, this treatise became the primary means for identifying immature insects and continues to be the only comprehensive reference in the world.

Stehr served various roles within the Department during his career. As advisor of Entomology’s graduate student programs, he championed student excellence and success and participated in virtually all exams. He also served as director of the 1.5 million-specimen, A. J. Cook Arthropod Research Collection, one of the most important arthropod collections in the country.

Roger A. Hoopingarner died on November 6, 2021. He specialized in apiculture for nearly 60 years and was one of the discipline’s foremost



Fred Stehr

Roger Hoopingarner

researchers. In retirement, he spoke and consulted at beekeeping associations and universities throughout the world on biology and management of honey bees.

One of his most noteworthy accomplishments was developing a research program around creating parasite-resistant bees, which would enable them to fend off the parasite-borne diseases that can easily decimate a bee population.

In his later years, he created the [Roger and Barbara Hoopingarner Endowed Graduate Fellowship](#) in Entomology to fund graduate assistants and, most recently, the Roger Hoopingarner Endowed Professorship in Apiculture and Entomology.

Gift supports arthropod collection and the Bug House

Gary Parsons has invested a lot of heart and soul over the past 22 years as collection manager for the [Albert J. Cook Arthropod Research Collection](#). When he interviewed at Michigan State University, he noted some of the collection drawers needed to be fumigated to stop insect and other specimens from deteriorating and helped make that happen before returning home to Oregon.

He happily accepted the job offer at MSU and has dedicated his career to securing and growing the Collection. His efforts also included partnering with then Bug House manager Barb Stinnett to bring insect specimen drawers—duplicates from the collection—and live specimens into its outreach. Tarantulas, blue death-feigning beetles and Madagascar hissing cockroaches are just a few of the creatures that now live at the Bug House and thrill hundreds of visitors each year.

Fast forward to 2021 and Parsons is preparing to retire January 1. During retirement, he plans to join expert volunteers who diligently help curate the Collection and enable its meager budget to cover expenses. Recently, Parsons received a financial gift from his mother and in reflecting how best to use it, he realized improving the Collection's space would support something he is passionate about and would improve working conditions for all volunteers.



Parsons helps a student with a tarantula.

Collection director [Anthony Cognato](#) secured more space when he arrived in 2006, allowing the collection to expand at that time, however, several private collections are expected to be donated in the near future, including over 300 drawers of Lepidoptera (butterflies and moths). This year, the underutilized library section of the facility is being converted to house more specimens with cabinets and drawers funded with Parsons' gift.

"This is the first step in a multi-year plan to get the storage needed for the growing collection," Parsons said. "We've packed as much as we can in the space we have, but further donations will be needed before too long."



Parsons also has made a smaller contribution to the Bug House, which he views as a place where children and students can be inspired by insects to respect and appreciate them. Again, Parsons found a way to support where his passion led him at MSU. When the pandemic began in spring 2020, Parsons packed up the live specimens and took them home with him to ensure their safety until longer term plans could be made.

He has been partnering with academic advisor Amanda Lorenz in updating the Bug House and its outreach in her role as its new manager. If you'd like to join Parsons in supporting either the Bug House or the arthropod collection, visit: <https://www.canr.msu.edu/ent/giving/>

Thank you!

Thanks to the generosity and creativity of our students, alumni, staff, faculty and their families, there are many opportunities to give to the Department. **To see a complete list and contribute online**, go to: <https://www.canr.msu.edu/ent/giving/>

Gifts may also be mailed to: University Development, Michigan State University, 300 Spartan Way, East Lansing, MI 48824-1005. Please make your check payable to "Michigan State University" and be sure to identify the name of the fund you wish to support on the memo line of your check. Together, we make an impact—thank you!



Eric Benbow has been named a **Global Scholar** through the MSU College of Agriculture and Natural Resources International Programs Office. The scholar program's goal is to enhance engagement of early and mid-career faculty members in international programs. One of his key areas of research is on black soldier fly as an alternative protein source for livestock feed and aquaculture. Within the Global Scholars Program, Benbow plans to explore the viability of this method with countries around the world.

The Entomological Society of America's 2021 annual meeting was held in Denver and offered virtually this fall. Congratulations to these winners in the 10-minute paper category:

- **Zinan Wang** presented in person and was awarded first place in the PBT: Physiology, Morphology and Ecology section.
- **Charlotte Schuttler** presented virtually and received first place in the P-IE: Biocontrol section.

MSU Entomology also won through a mixed-university debate team led by MSU's **Kayleigh Hauri** along with teammates **Natalie Constancio** (MSU), John Ternest (University of Florida), Jacob

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Tree fruit entomologist Gut valued mentoring and global interests

Professor Larry J. Gut passed away on September 6, 2021, in Wenatchee, Wash., where he recently moved with his wife Kathleen Gut to retire near family and friends. Gut was the tree fruit entomologist at MSU for 24 years. During that time, he established an international reputation for world class research and extension, responding to the pest challenges of tree fruit growers in Michigan and across the globe. He was an invited keynote speaker at national and international conferences, in demand for his ability to blend the theoretical basis of insect pest management with the need to integrate new discoveries into practical orchard management programs for growers.

Gut's research projects included collaborations in Washington State, and in Italy, Australia, New Zealand and Rwanda. He often brought his student and postdoctoral research colleagues into these collaborations, either by hosting international visitors here in Michigan or bringing his students to international conferences or research trips.

As a professor of tree fruit entomology, Larry valued mentoring and encouraging his students as an important part of his research and extension appointment. He believed that these experiences helped to make his students more aware of the full international reach of MSU programs and helped to build their professional skills and networks.

Memorial opportunity

To honor Larry's memory and to continue his vision of connecting MSU Entomology to other regions of the country and the world, MSU's Department of Entomology is raising funds to establish the Larry Gut Memorial Endowed Scholarship Fund. With a goal of raising a minimum of \$50,000, this fund will support undergraduate and graduate students in the department. Funded activities will include attending national and international conferences to present research or travel to visit researchers in other parts of the world to learn new techniques, facilitate international collaboration and to develop life-long personal and professional networks.

The Larry Gut Memorial Endowed Scholarship Fund will honor Larry's love of scientific exchange and build new research collaborations, continuing his legacy as a professor who supported his students.

The goal is to establish an endowment that will continue in perpetuity to provide scholarships from the accrued interest. If you are interested in donating, please visit <https://givingto.msu.edu/gift/?sid=12779>



Larry Gut in Rwanda with former graduate student Joseph Bigirimana.

I grew up loving nature and the outdoors. My grandfather, a member of the Michigan Mycological Society, knew all the scientific names of the mushrooms and expected me to know them, too. In high school, I wasn't sure what I wanted to do—maybe go to medical school—but definitely something in science with a doctorate.

When I was in high school, my dad, an attorney, had a medical malpractice case involving a suspected infected brown recluse spider bite. He took me along to MSU where he deposed Professor Richard Snyder. Along with hearing Snyder share his expertise, we walked around the Natural Sciences building, which impressed me and helped me choose MSU. Later at new student orientation, I considered majoring in engineering, but realized it didn't excite me.

I remembered I enjoyed talking with Professor Snyder and looked for general entomology courses I could take. I found ENT 205, "Pests, Society and Environment" taught by [George Bird](#) and as soon as I sat down in that class, I was transfixed. Bird is a great lecturer and I remember him talking about systems, showing connections and discussing integrated pest management. I was someone who marched to the beat of his own drum and entomology suited me. It was different, but a very applicable field of study. So, I met with the department's undergraduate advisors, Walt Pett and [Chris DiFonzo](#), and became an entomology major.

Pett and DiFonzo were so much fun and great mentors. I became comfortable with entomology realizing I could do something in academia within this cool science and still have the option

Mike Kates found learning to view insect pest management within a system prepared him to see his patients holistically.



of medical school someday. Entomology is unique: a niche, and yet global as insects or arthropods have interactions in just about anything you do.

My senior year, I applied to graduate school programs and medical school. Then Chris DiFonzo invited me to be a graduate student working on a grant for the Michigan soybean growers, which I accepted. Unfortunately, as happens with biology, the soybean aphid populations we were studying crashed and I didn't have enough data. I was able to finish my master's degree, but I chose to go to medical school and DiFonzo was very supportive, telling me faculty care about students and the goal is for students to feel fulfilled.

I'm now a family doctor in a hospital-owned practice that includes obstetrics in Marquette, Michigan. I think entomology is a good jumping off point if you're interested in medicine. Another Entomology alumna, Chelsea Rawe, graduated after me and she followed up her entomology studies with medical school and the Peace Corp.

I learned in my entomology classes the importance of holistic thinking. I remember Dr. Bird lecturing about systems like integrated pest management

of onion maggots. He explained the benefits of field margins where predatory wasps could reproduce and how the wasps' pupae developed in manure at a nearby dairy farm. Learning the process and how to step back and view a problem holistically is an important skill that I got from entomology.

I took my addiction medicine boards recently and hope to switch to

running a clinic focusing on opioid abuse disorder. Entomology influences my perspective of the opioid epidemic, which I view as a function of systemic factors. We had a perfect storm of governmental, pharmaceutical, economical and societal factors that created this epidemic.

It's not so different from the factors that explain how a new invasive species like soybean aphid gets established. Not only do we have a plant, soybean, that is susceptible to the insect, but we also have the aphid's overwintering plant, buckthorn, which is also an invasive species. The training I got in Entomology prepared me to view patients' health in the context of systems that underpin and create medical problems. That is why I'm interested in why someone has a substance abuse disorder and the systemic things we can do to help them.

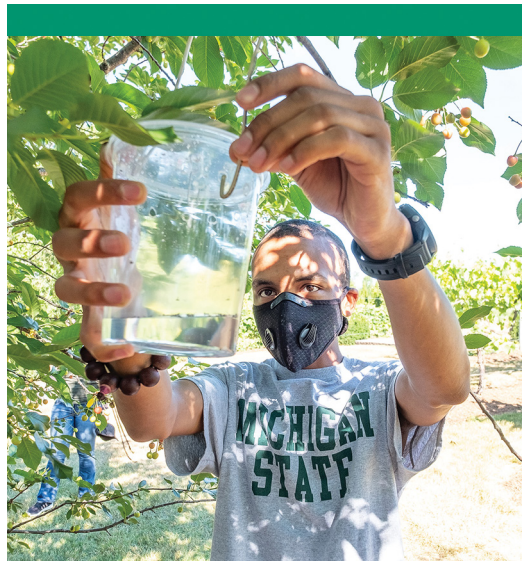
Working in an area like Marquette, I've found I have more options for deciding what I want my expertise to be and some freedom to build it. I grew up vacationing in the Upper Peninsula and still appreciate the outdoors. Biking, skiing and fishing are within 6 minutes of my house. That's really helpful, being a busy physician, and is part of why practicing medicine here works for me.

New EROF program finds success and requests support

In the summer of 2020, a handful of MSU Entomology graduate students set a goal of providing mentorship and paid research experience to undergraduate students who have limited access to these opportunities. Many of us who have the privilege to work as students and scholars recognize we got here from paid opportunities and committed mentorship during our undergraduate career, and these opportunities are often limited or excluded entirely for students who attend community colleges, have financial constraints, or belong to historically excluded communities in science. We were driven to address these inequities and to provide the same opportunities to these students, as well as diversify the community of entomological researchers within the department and in the field as a whole.

This goal was realized in summer 2021 when we had the incredible opportunity to offer world-class research experience, a paid and livable wage and health care access to five outstanding undergraduate fellows. Our first team of [Entomology Research and Outreach fellows \(EROF\)](#) included:

- **Carlisha Johnson**, a chemistry student at Lansing Community College
- **Naim Benin**, a biology student at Eastern Michigan University



- **Natasha McKay**, a student of biology and physiology at Eastern Michigan University
- **Jimmy Gray-Jones**, a data science student from Lansing Community College (recent transfer to MSU)
- **Mohammad Turanni**, a pre-med student at Henry Ford Community College

These EROF fellows were matched with mentors in the department—students, post-doctoral researchers and professors—who were committed to creating positive, novel research experiences with dedicated mentorship. These fellows were taught entomological laboratory and field research techniques, as well as career development skills like CV and resume development. They also met professional entomologists working in academia, industry,

extension and government. The 2021 EROF fellows exceeded all expectations conducting research and evolving as scientists and students over the summer. We couldn't be prouder of the resilience, persistence and passion demonstrated by these fellows and their mentors.

Our work isn't done.

We believe these opportunities should continue for the advancement of students as well as our department, by working together to become a more diverse group of entomologists and scholars. For summer 2021, we received over 70 EROF applications so we hope to offer this opportunity to many more students. However, to continue providing student salaries, health insurance and research supplies, we are humbly asking our colleagues, alumni, friends and family to donate what they can to the EROF fellowship fund, found here: <https://givingto.msu.edu/gift/?sid=12854>.

The funds you donate will directly support undergraduate students conducting entomological research at MSU during summer 2022. As many of you remember, the start of a career in science requires diligence and grit, but also financial security, mentorship and a bit of luck. We hope you consider supporting the next generation of entomologists and our Department.

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MSU's debate team members Kayleigh Hauri and Natalie Constancio.

Pecenka (Purdue) and Scott Gula (Purdue). The debate team met weekly starting in early June to discuss strategies and prepare arguments. Their assigned topic was "Compared to other solutions, like plant-based diets, insect farming is the best method to address rising human global food and nutrient supply demand." The team took a stance supporting

the statement resulting in a win in the individual debate against the Washington State University team and a first-place finish over all as the best of six teams competing.

Each team prepared a written, cited summary of their stance, and the written portions will be published in the *Journal of Insect Science*.

Featured Student

Allison Zahorec, doctoral student

Hometown: Lorain, Ohio

Previous education:
BS Zoology, Kent State University

Major professor: Doug Landis



What inspired your interest in entomology? I spent a significant portion of my childhood outside flipping over rocks and logs to look for insects and feeding honey to the ant colonies in my backyard. My parents caught on to my fondness for the six-legged and gave me lots of opportunities to further pursue my interests in insects and the natural sciences.

What is your favorite activity as part of your graduate studies?

Conducting research as part of the [Great Lakes Bioenergy Research Center](#) has been the highlight of my graduate career. The natural world is full of questions and being able to design and carry-out experiments to begin to answer some of them is incredibly fulfilling.

What are you researching? My research is focused on microarthropods, a group of tiny soil-dwelling arthropods including springtails and mites, living in bioenergy cropping systems. I am interested in seeing how the characteristics of these cropping systems impact microarthropod community structure and function, as well as the potential for microarthropods to influence the ability of bioenergy cropping systems to accrue carbon.

What is your favorite thing about MSU? Definitely the students. I've met so many wonderful people within the Department, the [Ecology, Evolution and Behavior program](#) and beyond who have helped me become a better scientist. My fellow graduate students have been such a huge support system for me, and I am grateful to be a part of the MSU graduate student community.

Tell us about your experience with the Bug House. I've had many great experiences in my time volunteering at the Bug House, but the most memorable moments for me are when kids overcome their fears of holding the insects and tarantulas. These kids always end up having the most fun interacting with the arthropods and wanting to come back. It's very rewarding for me to see them leave with that positive experience and appreciation for insects.

As a student during a global pandemic, what is something positive you found in the past year? Spending so much time at home gave me time to reevaluate my academic, professional and personal goals and how they align with my key values. It's been encouraging to see numerous scientific communities and institutions becoming more proactive and vocal about issues of equity and social justice.

ALUMNI NEWS

Kristi Bugajski (MS 2008, Merritt) is part of a team at Valparaiso University awarded a six-year, \$1.5 million grant by The National Science Foundation to fund the Establishing Practices Integrating Commuters Plus program. The new program will provide scholarships, undergraduate research opportunities, mentorships and social support for commuter students in Northwest Indiana. The team will use a multi-faceted, targeted recruitment strategy to reach underrepresented students who are pursuing a major in science, technology or mathematics.



Bug Talk podcast interview with incoming chair Hannah Burrack

Want to learn more about our new chairperson? Listen to Burrack talk about her background and her thoughts on leadership in Bug Talk's episode 77: bit.ly/bugtalk-HB

You can also watch the interview on YouTube with a link from the episode web page.

Bugged newsletter

NEWSLETTER PRODUCTION

Joy Neumann Landis, editor
landisj@msu.edu

CONTACT MSU ENTOMOLOGY

www.ent.msu.edu
entnews@msu.edu
517-355-4663

Twitter or Instagram:
@MSUEntomology



Department of Entomology
MICHIGAN STATE UNIVERSITY

Michigan State University
Natural Science Building
288 Farm Lane Room 243
East Lansing, MI 48824

OUR NEW GRADUATE STUDENTS WELCOME!

- Cynthia Fiser – MS with Doug Landis.
- Lauren Goldstein – MS with Rufus Isaacs.
- Oscar Istas – PhD with Marianna Szucs.
- Keith Koonter – MS with Matt Grieshop.
- Julie Michaelson – MS with Marianna Szucs.
- Bethany Mikles – MS student
with Jennifer Pechal.
- Sharron (Ronnie) Miller – PhD student
with Rufus Isaacs.
- Dalton Miner – MS with John Wise.
- Kevin Postma – PhD with Julianna Wilson.
- Charlotte Schuttler – MS with Matt Grieshop.
- Jennifer Zavalnitskaya – PhD
with Zsofia Szendrei.
- Nicholas Zoller – MS with Deb McCullough.

