



Entomology Stridulations: Autumn 2021

Newsletter Editor: Erin Parker

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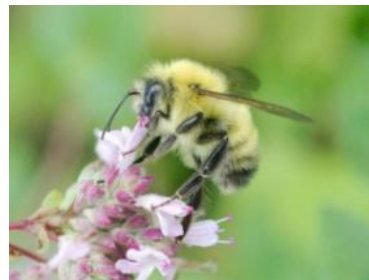
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From the Chair, Jamie Strange, PhD



As we wrap up autumn semester 2021, it is a good time to take stock of where we have been, where we are, and where we are going. For those of you who don't get to campus much, it might



surprise you to see how normal it can seem, though a year ago it was much different. We had a successful fall of teaching with many of our classes back in person and near full capacity. The sidewalks of campus are bustling, and the labs in Wooster and Columbus are busy. Despite that, you can see that we are still working in a world that is not the same as it was two years ago. We are still masked up and you are just as likely to hear a conversation about booster shots as you are about Buckeyes football.

We have had some significant change in our faculty since spring 2021. As noted in the

we have had some significant change in our faculty since Spring 2021. As noted in the spring newsletter, Celeste Welty, Associate Professor of Entomology, retired in June. After serving as Dean of Ohio State's College of Food, Agricultural, and Environmental

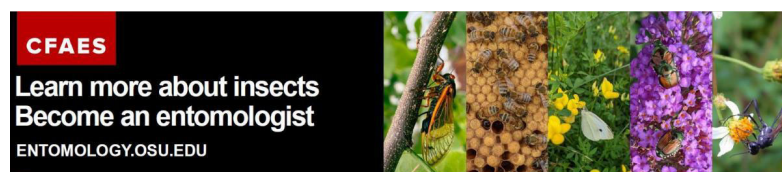
Sciences (CFAES), and then as Executive Vice President and Provost, Bruce McPheron, PhD, returned to our faculty as Professor of Entomology and Dean's Chair in CFAES International Programs. In January 2022, Ashley Leach, PhD, will be joining our faculty as our Specialty Crop Entomologist. Ashley received her PhD from Cornell University and is currently finishing her post-doctoral research at Purdue University. While we welcome Bruce and Ashley to our department, we wish Casey Hoy, PhD, the best as he retires at the end of December 2021. Casey joined our department in 1987 and has served as Associate Chair, the Kellogg Endowed Chair in Agricultural Ecosystems Management, and the Faculty Director of the Initiative for Food and Agricultural Transformation. Casey and his programs are still having tremendous impact for improving the sustainability of agroecosystems.

Even with all those changes, what has not changed is the resilience and dedication that our faculty and staff bring to work every day. Below,



you will read about our incredible outreach programs and how Denise Ellsworth has adapted her Pollinator Program to reach an enormous audience. Jeni Filbrun has reimaged the Wooster Bug Zoo into the United Titanium Bug Zoo located in the lobby of the Wooster Science Building. This transformation has been over a year in the making, and it included a major fundraising campaign to provide funds for staff, equipment, and new arthropods for the zoo. In Columbus, Jeni Ruisch has formally taken over the Ohio State Insectary and has modernized the work done there. You can see from our publications and grants awarded that we have been busy with research and that the department continues to make an impact in entomological literature. Our students continue to excel, and at the annual meeting of the Entomological Society of America in Denver, they won first or second place in six of the student talk and poster competitions. Our teaching activities show that despite a downturn in student enrollment at the university level, our faculty remain busy in the classrooms and labs.

Finally, I want to highlight our work to increase undergraduate enrollment in the department. Reed Johnson, PhD, Associate Professor of Entomology, is leading a faculty task force to improve our undergraduate student recruitment and retention. The group is working to assess our recruitment strategies and develop new recruitment pathways. At the same time, we have launched a new Entomology Undergraduate Endowed Scholarship Fund (#317434). We invite gifts from alumni and friends to raise scholarship funds for undergraduate Entomology students. Our hope is to provide a "full-ride" scholarship for in-state tuition and fees annually, with preference given to students majoring in Entomology who demonstrate financial need, add diversity to the department, and/or contribute to nurturing a more diverse and inclusive departmental community. If you want to contribute to this new scholarship, you can [give online](#) or you can contact me at strange.54@osu.edu or Jen Heller in the CFAES Office of Advancement at heller.6@osu.edu.





Luis Cañas, PhD, Associate Professor

Luis Cañas fills multiple roles at Ohio State. In addition to being Associate Professor in Entomology, he is the Extension State Specialist for Controlled Environment Entomology and Director of International Programs in Agriculture at CFAES.



The Cañas research program focuses on integrated pest management of insects in controlled environments. His research investigates the use of integrated pest management tactics such as cultural, biological, and chemical control, and provides applied solutions to problems caused by thrips, whiteflies, and mites among others. Luis is the Extension state specialist for controlled environment entomology and provides pest management support and education for growers, industry representatives, and county Extension educators. His lab has one research associate, Nuris Acosta, and four graduate students, Grace Sward, Jonathan Lee-Rodriguez, Valerie Anderson, and Olivia Lang. Luis teaches three graduate level courses on integrated pest management, biological control, and greenhouse pests and plant health.



United Titanium Bug Zoo

Contributed by UTBZ Program Manager, Jeni Filbrun

Entomology welcomed benefactors from United Titanium Inc. (UTI), on Aug. 31, 2021, for the *official ribbon cutting of the United Titanium Bug Zoo* (UTBZ) and an up-close-and-personal visit with several of the inhabitants.





The UTBZ has made strides to become an interesting and educational destination to learn about the wonderful world of arthropods! Along with the live arthropod displays, we also have been focusing on the static displays that grace the large cases in the front lobby. The College of Wooster's Natural History of Invertebrates class came to discuss careers in Entomology. They helped create a display using the "six degrees of separation" activity for the field of Entomology. From the varied career paths of the class, the display showcases how any career can be enhanced with an Entomology degree.



Columbus Bug Zoo and Insectary

This has been a year of change for the insectary at the Columbus campus of Ohio State. The lab has been in full-swing modernization mode, clearing out the old and making way for the new. Many repairs were made, and some parts of the lab were updated. The transition continues, with the end goal being a bright and open space with display tanks and signage. In-person tours have started back up in earnest, and barely a day has gone by without visitors of all stripes stopping in to meet the animals, or with trips out to local schools and community groups with bugs in tow. The exterior of the lab is in the process of being turned into an activity and engagement area that will help evolve the way outreach is done at the insectary, and even allow for larger groups in the small space. For the first time ever, a lab was designed and staged in this learning area. This one setup brought over 400 new faces to the insectary. The team has been growing, with new employees from various backgrounds being hired, and new volunteers coming onboard.

Connect with us on *instagram @osuentomology*, or *FaceBook @OhioStateEntomology*

Pollinator Education Programs

Contributed by Pollinator Education Program Director, Denise Ellsworth

The Bee Short Course for Community Scientists

was a seven-part monthly webinar series (May–November 2021) developed to enhance the skills of community scientists interested in wild bee conservation. Participants from across the country and across the globe took part in live monthly sessions focused on bee biology, bee botany, photography, data collection, and the role of community science in conservation and advocacy. A total of 3,189 participants registered for The Bee Short Course with live webinar attendance averaging over 1,000 participants per session. Views of recordings on YouTube averaged 730 per session.



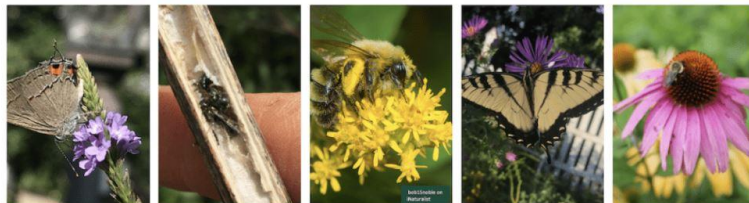
Due to the success of this effort and the enthusiasm of participants, **The Bumble Bee Short Course** will launch in spring 2022. This program is a collaborative effort from Ohio State's Department of Entomology and the Chadwick Arboretum & Learning Gardens, in partnership with the U.S. National Native Bee Monitoring Research Coordination Network (RCN). Funding was provided in part by a USDA/NIFA Integrated Pest Management Pollinator Health grant with support from Davey Tree Expert Company. Learn more and find links to resources and recordings on [The Bee Short Course webpage](#).

Upcoming Webinar Series

Tending Nature Speaker Series

Nature: Native Plants and Every Gardener's Role in Fostering Biodiversity

Native Plants and Every Gardener's Role in Fostering Biodiversity
Six-session



webinar speaker series focused on the ecological roles of native plants and some of the creatures that depend on them each Friday for 6 weeks from January 7th through February 11th, at 10AM EASTERN. Join live sessions or connect to webinar recordings on the [Tending Nature](#) webpage.

Columbus Bug Zoo & Insectary Featured Arthropod

Contributed by Insectary and Outreach Program Director, Jeni Ruisch

Tiiltocatl vagans, formerly known as *Brachypelma vagans*, commonly known as **Mexican Red Rump**

Habitat/Range: Shrublands in the Yucatan Peninsula. These spiders are the most tropical in the genus *Tiiltocatl*.

Diet: Small arthropods such as crickets, cockroaches, other spiders. Occasionally small reptiles or rodents.

Lifespan: Males live two to five years, while females can live as long as 20 years. There are anecdotal reports of some females living into their 40s.

Fun Facts: These tarantulas are commonly kept in the pet trade. Though the entire *Tiiltocatl* and *Brachypelma* genus' are known to be docile, *vagans* has a reputation for having a bit of an attitude. Like most tarantulas, they are very unlikely to bite. These guys and gals have what are called urticating hairs. These are special hairs on their abdomen that easily detach and embed in the mucus membranes of potential predators, almost like tiny porcupine quills.



United Titanium Bug Zoo Featured Arthropod

Contributed by UTBZ Program Manager, Jeni Filbrun

The Ant, family Formicidae, order Hymenoptera

Who rules the world? Ants of course! At the United Titanium Bug Zoo we have ant colonies. If you have a keen eye, you can spot the queen. As social insects, ants all work as a team caring for the



brood to ensure a healthy colony. Ants are also farmers! They tend to aphids to increase their production of “honeydew,” which is the excretions of the aphids.



Awards and Honors: Entomology Faculty, Staff, and Students

FACULTY HONORS AND AWARDS

HONORS - FACULTY

Casey Hoy: 2021 **Fellow of the Entomological Society of America**

Luis Cañas: 2021 CFAES **Distinguished Diversity Enhancement Award**, CFAES Office of Diversity, Equity and Inclusion

Jim Jasinski, CFAES Integrated Pest Management Team Lead: 2021 OSU **Distinguished Multi-disciplinary Team Extension Award**, OSU Extension



GRANT AWARDS - FACULTY

Norman Johnson, Principal Investigator, **National Science Foundation**, “CSBR: An inordinate fondness for beetles—expanding access to the Triplehorn collection of *Coleoptera*, phase 2,” 2021–24, \$484,967.

Megan Meuti, **Entomology**, and Laura Pomeroy, Environmental Health Sciences. **CFAES Internal Grants Program, New Researcher Incentive**, "Determining the relative contributions of mosquito biting behavior and seasonal responses in West Nile virus transmission." \$49,823.

Ryan Winston, FBE, and Sarah Short, **Entomology**. **CFAES Internal Grants Program, New Researcher Incentive**, "Protecting Public Health through Vector Control and Stormwater Treatment: Locating Vulnerabilities in Stormwater Infrastructure that Support Mosquito Reproduction", \$49,981.

Guilherme Signorini, HCS, Luis Canas, **Entomology**, Alex Lindsey, HCS, and Amanda Bowling, ACEL. **CFAES Internal Grants Program, New Researcher Incentive**, "Specialty Crop Growers Attitudes and Motivations Towards Biopesticides", \$49,996.

STAFF HONORS AND AWARDS

OSU EXTENSION AWARDS

Denise Ellsworth, Pollinator Education Program Director: **Distinguished Extension Professional Award**

Amy Raudenbush, Research Associate 2, Tilmon Lab Manager: **Distinguished Early Career Extension Professional Award**

CFAES STAFF ADVISORY COUNCIL AWARDS

Jeni Filbrun, UTBZ Program Manager: **Innovation Award** for developing and/or participating in project initiatives and/or process operations improvements that enhance CFAES, Extension, ATI, or OARDC and its mission.

Nuris Acosta, Research Assistant 2, Canas and Michel Labs: **Special Recognition Award** for going above and beyond job duties, special commitment to tasks, positive customer service, and improving workplace communications.

2021 OUTREACH AND ENGAGEMENT PROFESSIONAL DEVELOPMENT GRANT

Suranga Basnagala, Research Associate 1, CFAES, Entomology, Tilmon Lab, Wooster: **Ohio State Outreach and Engagement Professional Development Grant** provides staff working in outreach and engagement the opportunity to further their career growth and development.

GRADUATE STUDENT HONORS AND AWARDS





DELONG AND ROOT GRADUATE STUDENT COMPETITION

The Dwight DeLong Competition provides support for students to attend professional meetings in entomology and other student-oriented departmental purposes to promote excellence in teaching and research. Established in 1985 by family, friends, colleagues and former students of Dwight DeLong, PhD, Professor Emeritus of Entomology.

Dylan Ricke, Advisor: R. Johnson and Caralee Shepard, Advisor: Gardiner—**DeLong Talk Award**

Johanna Schwartz, Advisor: N. Johnson—**DeLong Poster Award**

DEPARTMENT OF ENTOMOLOGY
Taxonomic Revision of *Dichoteleas* Kieffer (Hymenoptera: Scelionidae)
Johanna Schwartz and Dr. Norman F. Johnson

INTRODUCTION	OBJECTIVE	RESULTS
<ul style="list-style-type: none">Hymenoptera is estimated to be the most speciose order of insects.Most of this diversity is attributed to parasitoid wasps.Many of these groups have been overlooked in taxonomic efforts because of their tiny stature. <p><i>Dichoteleas</i> Kieffer (Hymenoptera: Scelionidae)</p> <ul style="list-style-type: none">Described by Jean Jacques Kieffer in 1907Can be identified by its...<ol style="list-style-type: none">Large baricled eyesLateral teeth on the scutellumMedial spine on the mesoscutellum 	Describe new species of <i>Dichoteleas</i> and evaluate the validity of the existing species concepts	<ul style="list-style-type: none">Six new species are described<i>Dichoteleas pappi</i> is synonymized under <i>D. rugosus</i>. 
<p>Only five species have been formally described and included in the genus.</p> <p>Four were described on the basis of a single sex and none of them were described on the basis of more than five specimens.</p>	<p>METHODS</p> <ul style="list-style-type: none">We defined morphological characters based upon existing hypotheses of characters in recent taxonomic works on Phygadeuonidae.^{1,2}We hypothesized the existence of species using the characters and their states and tested hypotheses by comparing the distribution of character states in these newly defined characters.If the new character states were incompatible with hypotheses of species limits, then species hypotheses were modified.Afterwards, we imaged the species and are creating a key using the newly defined character states.  	<p>CONCLUSIONS</p> <p>Ten species of <i>Dichoteleas</i> are recognized, six of which are new. We expect this number to increase as more specimens are collected.</p> <p>IMPLICATIONS</p> <ul style="list-style-type: none">Understanding the evolution within any group must be based upon a reasonable understanding of its diversity.Using estimates from a small sampling of species to predict the whole is likely to be misleading without a reasonable approximation of the size and scope of that greater universe.If we want to understand why there are so many species, we first need to know how many species there are.
		<p>ACKNOWLEDGEMENTS</p> <p>The Johnson Lab Thesis Committee Gard Awell and Hans Kromann Canadian National Collection of Insects C.A. Triplehorn Insect Collection</p> <p>REFERENCES</p> <p>1. Forster, A. A., Rogge, S. H., Near, M. A., Rippey, A. C., & Wilmshurst, H. A. (2015). Quantifying the unexplored diversity of Hymenoptera: net Coleoptera in the most species-rich order (BMC Ecology, 15(1), 11). https://doi.org/10.1186/s12864-015-0176-2</p> <p>2. Chen, H. Y., Tsai, C. C., & Wang, S. A. (2013). Revision of the World genera of the genus <i>Dichoteleas</i> (Hymenoptera: Phygadeuonidae). <i>Systematic Zoology</i>, 62(3), 348-361. https://doi.org/10.1093/sysbio/syt017</p> <p>3. Near, M. A., C. Rippey, S. H. Roggey, & A. Wilmshurst (2015). The phylogenetic generic group (Hymenoptera: Phygadeuonidae). <i>Systematic Zoology</i>, 64(1), 1-15. https://doi.org/10.1093/sysbio/syt017</p>

THE OHIO STATE UNIVERSITY CONTACT: SCHWARTZ.2085@OSU.EDU

The Jack and Helen Root Agricultural and Urban Entomology Award provides

the past and future meeting, research and career entomology, award process support to graduate students studying agricultural or urban entomology to attend professional meetings. The Entomology Travel Endowment Fund was established in 2003 by Jack and Helen Root.

Valerie Anderson, Advisor: Cañas—**Root Award, Agricultural Research**

Michelle Pham, Advisor: Gardiner—**Root Award, Urban Research**

ENTOMOLOGICAL SOCIETY OF AMERICA ANNUAL STUDENT RESEARCH COMPETITION

ESA Graduate Poster Competition

Dylan Ricke, Advisor: R. Johnson—**1st Place**, Plant-Insect Ecosystems: Pollinators And Pollination

ESA Graduate 10-Minute Paper Presentations

Dominique Magistrado, Advisor: Short—**1st Place**, Medical, Urban, and Veterinary Entomology: Mosquitos

Hannah McKenzie, Advisor: R. Johnson—**1st Place**, Plant-Insect Ecosystems: Pollinators

Adrian Pekarcik, Advisor: Tilmon—**2nd Place**, Plant-Insect Ecosystems: Conservation and Invasive Species

Sarah Scott, Advisor: Gardiner—**1st Place**, Plant-Insect Ecosystems: Behavior

ESA Undergraduate 10-Minute Paper Presentations

Valerie Anderson, Advisor: Cañas—**1st Place**, Plant-Insect Ecosystems

November 2021 ESA meeting - Denver, CO

Comparative Efficacy of *Bacillus thuringiensis* var. *israelensis* and *Steinernema feltiae* for Controlling Fungus Gnats (Diptera: Sciaridae) Infesting Oyster Mushrooms

Valerie M. Anderson^{1,2}, Grace F.H. Sward^{1,2}, Christopher M. Ranger^{1,2}, Michael E. Reding¹ and Luis Cañas²

¹USDA-Agricultural Research Service, Application Technology Research Unit, Horticultural Insects Research Lab, Wooster, Ohio 44691, ²Department of Entomology, The Ohio State University, Ohio Agricultural Research and Development Center, Wooster, Ohio 44691



GRANT AWARDS - GRADUATE STUDENT

Lydia Fyie, Shepard, C., Pham, M., DeGrand, J., Gardiner, M., and Meuti, M.E. OSU Sustainability Institute "Using The Ohio State University Campus to Determine Impact of Urban Heat Islands on Mosquito Seasonality." \$4,524.

Harper McMinn-Sauder. CFAES Internal Grants Program. "Conservation Reserve Program (CRP) land as a nectar resource supporting honey bees in the Ohio agroecosystem." \$5,000.

James Radl. CFAES Internal Grants Program. "Microbiome Specificity between Endemic and Widespread Aedes Mosquitoes." \$5,000.

Alden Siperstein. CFAES Internal Grants Program. "Characterizing seasonal changes in mosquito abundance." \$5,000.

UNDERGRADUATE STUDENT HONORS

UNDERGRADUATE ENTOMOLOGY SCHOLARSHIP RECIPIENTS, 2021–22

Austin Gruber: Loren F. Steiner Entomology Memorial Fund

Miabella Centuori: Osborn Scholarship Fund

Michaela Liptak: Harry S. Mesloh Scholarship

Lucas Sarko: Ralph Davidson Scholarship

Anthony Kanel: Ohio Pest Management Association Scholarship

Recent Journal Articles and Extension Materials

PEER-REVIEWED JOURNAL ARTICLES

*indicates recently graduated PhD/MS student; post-doc; visiting scholar; or undergraduate, advised by Entomology faculty

Bansal R*, Mian MAR, **Michel A.** 2021. Characterizing Resistance to Soybean Aphid: Antibiosis and Antixenosis Assessment. *Journal of Economic Entomology*. 114: 1329-1335.

Bezerra do Nascimento AR, Pavinato VAC, Rodrigues JG, Silva-Brandão KL, Consoli FL, **Michel A.**, Omoto C. 2021. There is more than chitin synthase in insect resistance to benzoylureas: Molecular markers associated with teflubenzuron resistance in Spodoptera frugiperda. *Journal of Pest Science*. Apr 2021.

Chen, H.*, Z. Lahey*, E.J. Talamas, A.A. Valerio, O.A. Popovici, L. Musetti, H. Klompen, A. Polaszek, L. Masner, A.D. Austin and **N.F. Johnson.** 2021. An integrated phylogenetic reassessment of the parasitoid superfamily Platygastroidea (Hymenoptera: Proctotrupomorpha) results in a revised familial classification. *Systematic Entomology* doi:10.1111/syen.12511

Hatfield R. G., **Strange J. P.**, Koch J. B., Jepsen S., and Stapleton I. (2021) Neonicotinoid Pesticides Cause Mass Fatalities of Native Bumble Bees: A Case Study from Wilsonville, Oregon, United States, *Environmental Entomology*. nvab059, doi.org/10.1093/ee/nvab059

Johnson, N.F. and Z. Lahey*. 2021. Hymenoptera. *Encyclopedia of Biodiversity* 3rd edition, Elsevier. doi:10.1016/B978-0-12-822562-2.00014-1

Johnson, N.F. 2021. *Interconnections: a case study in integrative biology*. Great River Learning, Dubuque, IA. ISBN: 9781644967591

Kuivila, K. M., Judd, H., Hladik, M. L., & **Strange, J. P.** (2021). Field-Level Exposure of Bumble Bees to Fungicides Applied to a Commercial Cherry Orchard. *Journal of Economic Entomology*, 114(3), 1065-1071.

Lozier, J. D., Parsons, Z. M., Rachoki, L., Jackson, J. M., Pimsler, M. L., Oyen, K. J., **Strange, J. P.** & Dillon, M. E. (2021). Divergence in Body Mass, Wing Loading, and Population Structure Reveals Species-Specific and Potentially Adaptive Trait Variation Across Elevations in Montane Bumble Bees. *Insect Systematics and Diversity*, 5(5), 3.

McGrady, C. M., **Strange, J. P.**, López-Uribe, M. M., & Fleischer, S. J. (2021). Wild bumble bee colony abundance, scaled by field size, predicts pollination services. *Ecosphere*, 12(9), e03735.

Oyen, K. J., Jardine, L. E., Parsons, Z. M., Herndon, J. D., **Strange, J. P.**, Lozier, J. D., & Dillon, M. E. (2021). Body mass and sex, not local climate, drive differences in chill coma recovery times in common garden reared bumble bees. *Journal of Comparative Physiology B*, 1-12.

Peffer, C.S., Pomeroy, L.W., and **Meuti, M.E.** 2021. Critical photoperiod and its potential to predict mosquito distributions and control medically important pests. *Journal of Medical Entomology*, 58(4), p. 1610-1618.

Piermarini PM, Denton JS, Swale DR (2022) The Molecular Physiology and Toxicology of Inward Rectifier Potassium Channels in Insects. *Annual Review of*

Toxicology of Inward Rectifier Potassium Channels in Insects. Annual Review of Entomology Vol. 67, doi:10.1146/annurev-ento-062121-063338.

Richardson RT*, Eaton TD, Lin C-H, Cherry G, Johnson RM, Sponsler DB*. 2021. Application of plant metabarcoding to identify diverse honeybee pollen forage along an urban-agricultural gradient. *Molecular Ecology*. 30: 310–323. doi.org/10.1111/mec.15704

Ricke DF*, Lin C-H, Johnson RM. 2021. Pollen treated with a combination of agrochemicals commonly applied during almond bloom reduces the emergence rate and longevity of honey bee (Hymenoptera: Apidae) queens. *Journal of Insect Science*. 21. doi.org/10.1093/jisesa/ieab074

Souza, J.L.P., I.O. Fernandes, D. Agosti, N.F. Johnson and F.B. Baccaro. 2021. Assessing the efficacy of higher-taxon approach for ant species surveys to improve biodiversity inventories. *Animal Conservation* doi:10.1111/acv.12758

Teets, N.M. and Meuti, M.E., 2021. Hello Darkness, My Old Friend: A Tutorial of Nanda-Hamner Protocols. *Journal of Biological Rhythms*, 36(3), pp.221-225.

Turo KJ, Gardiner MM. 2021. Effects of urban greenspace configuration and native vegetation on bee and wasp reproduction. *Conservation Biology*, 35:1755-1765. Doi: 10.1111/cobi.13753

Wengrat, A.P.G.S., A. Coelho, Jr., J.R.P. Parra, TA. Takahashi, L.A. Foerster, A.S. Corrêa, A. Polaszek, N.F. Johnson, V.A. Costa and R.A. Zucchi. 2021. Integrative taxonomy and phylogeography of *Telenomus remus* (Hymenoptera: Scelionidae), with the first record of natural parasitism of two species of Spodoptera in Brazil. *Scientific Reports* 11: 14110. doi:10.1038/s41598-021-93510-3

EXTENSION MATERIALS

Siperstein, A.S. and Meuti, M.E. 2021. Fact Sheet: Northern house mosquito.

<https://ohioline.osu.edu/factsheet/ent-89>

Shrock, K. and Meuti, M.E. 2021. Fact Sheet: Asian tiger mosquito.

<https://ohioline.osu.edu/factsheet/ent-87>

Meuti, M.E. and Etting, R. 2021. Fact Sheet: How to control and prevent mosquito bites in and around Ohio homes. <https://ohioline.osu.edu/factsheet/ent-88>

Courses Taught by Entomology Faculty

Luis Canas

ENTMLGY 5610 Greenhouse Plant Health and Pest Management, 3 units (12 students)

ENTMLGY 7999 Research in Entomology, MS, 1–16 units (3 students)

ENTMLGY 8998 Research in Entomology, PhD Pre-Candidacy, 1–16 units (3 students)

Mary Gardiner

ENTMLGY 7930 Scientific Writing and Grant Proposal Development, 2 units (16 students)

ENTMLGY 8800 Research and Training Seminar, 1 unit (4 students)

ENTMLGY 8998 Research in Entomology, PhD Pre-Candidacy, 1–16 units (2 students)

ENTMLGY 8999 Research in Entomology, PhD Post-Candidacy, 1–16 units (3 students)

Norman Johnson

BIOLOGY 3401 Integrated Biology, 4 units (137 students)

ENTMLGY 7999 Research in Entomology, MS, 1–16 units (1 student)

ENTMLGY 8999 Research in Entomology, PhD Post-Candidacy, 1–16 units (1 student)

Reed Johnson

ENTMLGY 5800 Pesticide Science, 3 units (29 students)

ENTMLGY 4999 Research with Distinction, 1–5 units (1 student)

ENTMLGY 7999 Research in Entomology, MS, 1–16 units (2 students)

ENTMLGY 7999 Research in Entomology, MS, 1–16 units (3 students)

ENTMLGY 8999 Research in Entomology, PhD Post-Candidacy, 1–16 units (1 student)

Ellen Klinger

ENTMLGY 2101 Pests, Plagues, Pollinators, and Poisons: Insects in Human Affairs, 3 units (45 students)

ENTMLGY 2400H Evaluating Evidence in Biology and Medicine, 3 units (17 students)

ENTMLGY 4601 General Insect Management Lecture and Lab, 2 units (12 students)

Megan Meuti

ENTMLGY 4999H Honors Research With Distinction, 1–5 units (1 student)

ENTMLGY 4999 Research With Distinction, 1–5 units (2 students)

ENTMLGY 6310 Insect Physiology and Molecular Biology Lecture, 3 units (9 students)

ENTMLGY 6320 Experimental Insect Physiology and Molecular Biology Lab, 1 unit (15 students)

ENTMLGY 8998 Research in Entomology, PhD Pre-Candidacy, 1–16 units (2 students)

ENTMLGY 8999 Research in Entomology, PhD Post-Candidacy, 1–16 units (1 student)

Andy Michel

ENTMLGY 7300 Plant Health Management Seminar, 1 unit (1 student)

ENTMLGY 8999 Research in Entomology, PhD Post-Candidacy, 1–16 units (1 student)

Pete Piermarini

ENTMLGY 4607 Veterinary Entomology, online, 2 units (314 students)

Larry Phelan

ENTMLGY 8999 Research in Entomology, PhD Post-Candidacy, 1–16 units (1 student)

Ben Philip

ENTMLGY 1111 Biology of Insects, Animals, and Fungi Affecting Buildings, lecture and lab, 4 units (80 students)

ENTMLGY 2101 Pests, Plagues, Pollinators, and Poisons: Insects in Human Affairs, 3 units (13 students)

Joe Raczowski

ENTMLGY 1100 Exploring Entomology, .5 unit (22 students)

ENTMLGY 2400H Evaluating Evidence in Biology and Medicine, 3 units (16 students)

ENTMLGY 3330 Social Insects, 3 units (9 students)

ENTMLGY 4000 General Entomology Lecture, 3 units (12 students in-person; 30 online)

ENTMLGY 4000 General Entomology Lab, 1 unit (11 students)

ENTMLGY 4191 Internship Experiences in Entomology, 1–2 units (4 students)

ENTMLGY 4600 Introduction to Insect Science, 1 unit (first session: 133 students, second session: 104 students)

Sarah Short

ENTMLGY 5605 Vector Biology and Vector Borne Diseases, 3 units (14 students)

ENTMLGY 4998 Undergraduate Research in Entomology, 1–3 units (1 student)

ENTMLGY 4999H Honors Research with Distinction, 1–5 units (1 student)

ENTMLGY 4999 Research with Distinction, 1–5 units (1 student)

ENTMLGY 8000 Entomology Seminar, 1 unit (9 students)

ENTMLGY 8998 Research in Entomology, PhD Pre-Candidacy, 1-16 units (4 students)

Jamie Strange

ENTMLGY 8998 Research in Entomology, PhD Pre-Candidacy, 1–16 units (1 student)

ENTMLGY 8999 Research in Entomology, PhD Post-Candidacy, 1–16 units (1 student)

Kelley Tilmon

ENTMLGY 8999 Research in Entomology, PhD Post-Candidacy, 1–16 units (1 student)

Chrysalis Undergraduate Entomology Student Association

Contributed by Camden Dezse, Chrysalis President 2021-2022

In August, members of **Chrysalis** joined the Department of Entomology for their "Back to School BBQ," where students were allowed to interact with peers and department faculty and staff. For some, it was the first time meeting other members of Chrysalis in person due to the pandemic! Some members of Chrysalis also joined the General Entomology Class on a trip to Chadwick Lake to collect insect specimens and learn about various collection techniques and tools.



Throughout the month of September, members of Chrysalis participated in Chrysalis' first ever photography contest! Members submitted photos of an incredible diversity of arthropods that they found on the university's campus and elsewhere. Winners were chosen at the end of the month and received collectible buttons. On Sept. 9, Chrysalis joined Associate Professor of Entomology and honey bee expert, Reed Johnson, at the Rothenbuhler Honey Bee Research Lab to learn about bees and beekeeping through hands-on experience. Chrysalis was given a tour by Jeni Ruisch on Nov. 15 of the insect and arthropod collection at the Biological Sciences Greenhouse. For some members, it was their first time ever handling insects and arthropods!

Chrysalis plans on holding a variety of events this spring, including a trip to the Franklin Park Conservatory for their annual Blooms and Butterflies event, as well as cooking and eating insect products for an entomophagy night!

*To join Chrysalis, contact Entomology Undergraduate Advisor,
Joe Raczowski.2@osu.edu.*



Entomology Graduate Student Association

Contributed by Out-going EGSA President, Adrian Pekarcik

A **media officer** position was officially created with **Kendall King** as the first officer for the Entomology Graduate Student Association (EGSA). Kendall will be responsible for running and maintaining EGSA's online website and account, and promoting the group with respect to outreach activities, fundraising initiatives, and advertising in coordination with other committees and the department. **EGSA held their elections on Aug. 5, 2021.** We would like to thank all outgoing officers for their hard work and contributions to EGSA! We also wish our incoming officers much success in the incoming year, especially as we continue to resume in-person activities.



Outgoing Officers 2020–21:

President: Adrian Pekarcik
 Vice President: Brendan Kelly
 Treasurer: James Radl
 Curriculum: Lydia Fyie
 Graduate Studies: Sarah Scott
 Media Officer: Kendall King
 Outreach: Tae Lee
 Scholarship and Awards: Katie Turo
 Seminar (Columbus): Dom Magistrado
 Seminar (Wooster): Dylan Ricke
 Social (Columbus): Caitlin Peffers
 Social (Wooster): Dylan Ricke
 Undergraduate Affairs: Alden Siperstein

Incoming Officers 2021–22:

President: Grace Sward
 Vice President: Brendan Kelly
 Treasurer: James Radl
 Curriculum: Kyle Akred
 Graduate Studies: Dominique Magistrado
 Media Officer: Kendall King
 Outreach: Iliana Moore

Scholarship and Awards: Johanna Schwartz
Seminar (Columbus): Caralee Shepard
Seminar (Wooster): Dylan Ricke

Social (Columbus): Sarah Scott
Social (Wooster): Ana Trabanino
Undergraduate Affairs: Hannah McKenzie

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