

# Sara L. Hermann

Michigan State University, Department of Entomology  
& Program in Ecology, Evolutionary Biology and Behavior

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## EDUCATION

- PhD candidate** - Michigan State University – PI: Doug Landis 2015 – present  
GPA 3.9 Major – *Insect Ecology, Behavioral Ecology, Biological Control, IPM*  
Department of Entomology and Program in Ecology, Evolutionary Biology and Behavior
- MS** - Cornell University - Ithaca New York – PI: Jennifer Thaler 2012 - 2015  
GPA 4.0 Major - *Insect Ecology and Chemical Ecology*  
Department of Entomology
- BS** - University of South Florida - Tampa, Florida 2009 - 2011  
GPA, 3.71 Major - *Environmental Science and Policy*, Department of Geography

## PROFESSIONAL EXPERIENCE

- Research Technician – Michigan State University – East Lansing, Michigan Jan 2015-May 2015  
Investigating potential influences on trapping efficiency of *Drosophila suzukii*.  
PI: Dr. Larry Gut
- Research Scientist/Lab Manager – Cornell University – Ithaca, New York Jan 2012-Aug 2012  
Evaluating the role of resident microbiota in olfactory function, nutrition and feeding behavior of *Drosophila melanogaster*.  
PI: Dr. Angela Douglas
- Biological Scientist – University of Florida – Lake Alfred, Florida June 2008-Aug 2011  
Improved pest management tactics for a major citrus pest using manipulative chemical and behavioral ecology techniques.  
PI: Dr. Lukasz Stelinski

## PUBLICATIONS

10. **Hermann S.L.** & Thaler JS (2018) The effect of predator presence on the behavioral sequence from host selection to reproduction in an invulnerable stage of insect prey. *Oecologia*. doi: 10.1007/s00442-018-4202-7
9. **Hermann, S.L.** & Landis, D.A. (2017) Scaling up our understanding of non-consumptive effects in insect systems. *Current Opinion in Insect Science*, 20, 54–60. doi: 10.1016/j.cois.2017.03.010
8. Buchanan, A.L., **Hermann, S.L.**, Lund, M. & Szendrei, Z. (2017) A meta-analysis of non-consumptive predator effects in arthropods: the influence of organismal and environmental characteristics. *Oikos*, 126, 1233–1240. doi: 10.1111/oik.04384
7. **Hermann, S.L.**, Xue, S., Rowe, L., Davidson-Lowe, E., Myers, A., Eshchanov, B. & Bahlai, C.A. (2016) Thermally moderated firefly activity is delayed by precipitation extremes. *Royal Society Open Science*, 3, 160712. doi: 10.1098/rsos.160712

6. Kirkpatrick, D.M., McGhee, P.S., **Hermann, S.L.**, Gut, L.J. & Miller, J.R. (2016) Alightment of spotted wing drosophila (diptera: Drosophilidae) on odorless disks varying in color. *Environmental Entomology*, 45, 185–191. doi: 10.1093/ee/nvv155
5. Dobson, A.J., Chaston, J.M., Newell, P.D., Donahue, L., **Hermann, S.L.**, Sannino, D.R., Westmiller, S., Wong, A.C.-N., Clark, A.G., Lazzaro, B.P. & Douglas, A.E. (2015) Host genetic determinants of microbiota-dependent nutrition revealed by genome-wide analysis of *Drosophila melanogaster*. *Nature Communications*, 6, 6312. doi: 10.1038/ncomms7312
4. **Hermann, S.L.** & Thaler, J.S. (2014) Prey perception of predation risk: volatile chemical cues mediate non-consumptive effects of a predator on a herbivorous insect. *Oecologia*, 176, 669–676. doi: 10.1007/s00442-014-3069-5
3. Mann, R.S., Ali, J.G., **Hermann, S.L.**, Tiwari, S., Pelz-Stelinski, K.S., Alborn, H.T. & Stelinski, L.L. (2012) Induced release of a plant-defense volatile ‘deceptively’ attracts insect vectors to plants infected with a bacterial pathogen. *PLoS pathogens*, 8, e1002610. doi: 10.1371/journal.ppat.1002610
2. Mann, R.S., Pelz-Stelinski, K., **Hermann, S.L.**, Tiwari, S. & Stelinski, L.L. (2011) Sexual transmission of a plant pathogenic bacterium, *Candidatus liberibacter asiaticus*, between conspecific insect vectors during mating (ed F Leulier). *PLoS ONE*, 6, e29197. doi: 0.1371/journal.pone.0029197
1. Onagbola, E.O., Boina, D.R., **Hermann, S.L.** & Stelinski, L.L. (2009) Antennal Sensilla of *Tamarixia radiata* (Hymenoptera: Eulophidae), a Parasitoid of *Diaphorina citri* (Hemiptera: Psyllidae). *Annals of the Entomological Society of America*, 102, 523–531. doi: 10.1603/008.102.0324

#### Submitted

**Hermann S.L.** & Landis D.A. (In review). Predator cues have limited impact on *Pieris rapae* oviposition and larval growth. *PeerJ*.

#### In Preparation

**Hermann S.L.** & Ali J.G. Chemical Ecology and Conservation Biological Control: Successes, challenges and the future of application. *Invited for a special feature on conservation biocontrol: Biological Control*.

**Hermann S.L.**, Davidson-Lowe E. & Thaler J.S. Insect prey eavesdrop on predator semiochemicals as a proxy for predation risk.

Macloed K.J., **Hermann S.L.**, Hellmann J.K., Sheriff M.J. Beyond predators: the role of the broader maternal environment in maternal predation risk effects and transgenerational plasticity.

#### **PRESS RELEASES & MEDIA COVERAGE**

Press release, "Reading nature's cues to reduce insecticide use", *Yale Environment Review* 16 Jan. 2018 by Natile Sommer

Press release, "How climate change may affect fireflies", *Science Magazine*, 14 Sep. 2016 by Elizabeth Pennisi

Radio Interview, "**Wanna study bugs with me? I do.**", Radio, 98.7 The FREQ: The Morning Mixtape, 11 Oct. 2017

## GRANTS, FELLOWSHIPS, AWARDS AND RECOGNITION (\$194,302)

**\$94,892** Understanding how predation risk by lady beetles shapes aphid behavior and physiology in agroecosystems. SL Hermann and DA Landis. USDA NIFA Predoctoral Fellowship

**\$92,785**- MSU Plant Science Fellowship – 2 years funding (2015-2017)

**\$1,600** in international travel fellowships from MSU college of agriculture, ISP and the graduate school (2018)

**\$2,100** in MSU Dept. of Entomology, Hutson Fellowship funding – 4 years funding (2015-2018)

**\$600** from the International Society for Chemical Ecology Travel Award (2015)

**\$2,050** Rawlins Foundation research and travel fellowships (2012-2014)

**2nd Place**, Presidents Award at Entomological Society of America annual meeting (2015)

**\$275, 1st Place**, Presidents Award at Entomological Society of America annual meeting (2013)

## PRESENTATIONS

### Invited/Selected

“Flying into the Face of Fear: Predator cues influence aphid development and behavior”, **Hermann, S.L.** & Landis, D.A. International Society of Chemical Ecology. Budapest, Hungary (Aug 2018). *Invited Speaker*

“The Ecology of Fear: Understanding how the threat of predation impacts insect prey”, **Hermann, S.L.** & Landis, D.A. The Pennsylvania State University, Department of Entomology Seminar (Apr 2017).

“Volatile Predator Cues Drive Non-Consumptive Effects”, **Hermann, S.L.** & Thaler, J.S. International Society for Chemical Ecology, Stockholm Sweden (July 2015). *Selected Speaker*

“Prey perception of predation risk: volatile chemical cues mediate non-consumptive effects of a predator on a larval insect pest”, **Hermann, S.L.** & Thaler, J.S. International Society for Chemical Ecology, Champaign Urbana, Illinois, USA (July 2014). *Selected Speaker*

“Prey perception of predation risk: volatile chemical cues mediate non-consumptive effects of a predator”, **Hermann, S.L.** & Thaler, J.S. Symposium of Insect-Plant Interactions, Neuchâtel, Switzerland (Aug 2014). *Selected Speaker*

“Prey perception of predation risk: volatile chemical cues mediate non-consumptive effects”, **Hermann, S.L.** & Thaler, J.S. Entomology Society of America, Portland, Oregon (Nov 2014). *Invited Speaker*

### Submitted Talks

“The Ecology of Fear: Understanding how the threat of predation impacts insect prey”, **Hermann, S.L.** & Landis, D.A. Entomology Society of America, Denver, Colorado (Nov 2017)

“The role of non-lethal predator effects in manipulating *Pieris rapae*”, **Hermann, S.L.** & Landis, D.A. Entomology Society of America, Minneapolis, Minnesota (Nov 2015)

“Non-consumptive effects drive behavioral differences in insect prey”, **Hermann, S.L.** & Thaler, J.S. Annual Department of Entomology Symposium – Cornell University (January, 2014)

“Non-consumptive effects of spined soldier bug presence on adult Colorado potato beetle behavior”, **Hermann, S.L.** & Thaler, J.S. Entomology Society of America, Austin, Texas (Nov 2013)

#### Submitted Posters

The Ecology of Insect Fear: Understanding how the threat of predation impacts insect prey. **Hermann S.L.** & Landis D.A. (Gordon Research Conference on Predator-Prey Interactions. Ventura, California Jan 2018).

Exploiting the Landscape of Fear as an Insect Control Tactic. **Hermann S.L.**, Bahlai C.A. and Landis D.A. (Gordon Research Conference on Predator-Prey Interactions. Ventura, California. Jan 2016).

Exploiting the Landscape of Fear as an Insect Control Tactic. **Hermann S.L.**, Bahlai C.A. and Landis D.A. (2015 All-Scientist Meeting- NSF Long-Term Ecological Research Network, August 2015)

Volatile Predator Cues Drive Non-Consumptive Effects of Prey in an Agroecosystem. **Hermann S.L.** and Thaler J.S. (2015 KBS LTER Symposium and All Scientist Meeting, Farming for Ecosystem Services: The Future of Long-term Ecological Research in Agriculture, April 2015)

*Candidatus Liberibacter asiaticus* induces release of chemicals that attract its vector, *Diaphorina citri* Kuwayama (Hemiptera: Psyllidae). **Hermann S.L.**, Mann R.S., Ali J.G., Tiwari S., Pelz-Stelinski K.S., Alborn H.T., Stelinski L.L. (Annual Entomology Symposium, 2013. Ithaca, New York)

*Candidatus Liberibacter asiaticus* induces release of chemicals that attract its vector, *Diaphorina citri* Kuwayama (Hemiptera: Psyllidae). **Hermann S.L.**, Mann R.S., Ali J.G., Tiwari S., Pelz-Stelinski K.S., Alborn H.T., Stelinski L.L. (Florida Entomological Society Annual Meeting, 2011. Sanibel Island, Florida)

#### **TEACHING EXPERIENCE – Teaching Assistantships**

Chemical Ecology (BIOEE 3690), Cornell University – Spring 2013 & Spring 2014

Designed and managed course blackboard and email. Developed and taught a laboratory component to help students gain comfort in chemical ecology techniques and experimental design. Graded exams and led exam reviews.

Invasive Species Biology (ENTOM 2020), Cornell University – Fall 2013

Taught a lecture on invasive species biology, as it pertains to agroecosystems. Led laboratory sessions and graded all course materials. Designed and maintained course blackboard website.

Evolutionary Biology (BIOEE 1780), Cornell University – Fall 2012

Independently taught 3 laboratory sections with over 70 students.

#### **MENTORING EXPERIENCE**

##### Undergraduate honors thesis mentees

1. Carissa Blackledge (2015-2018). *Identifying major predators of immature monarch butterflies in the Midwestern USA.*

2. Stephen Pecylak (2013-2014). *Anti-predator behaviors of Colorado potato beetle larvae in response to gregariously feeding spined soldier bug nymph predators.*

### Supervised undergraduate research assistants

Sydney Bird (2018)\*

Danielle Ellis (2018)

Aubrey McElrath (2018)

Carissa Blackledge (2016-2018)\*

Lane Proctor (2017)

John Paul Kole (2016)

Lindsey Hawkins (2016-2017)

Marguerite Bolt (2015)

Lydia Ali (2015)

Stephen Pecylak (2013-2014)

Marie Russell (2013-2014)

Elizabeth Davidson-Lowe (2013-2014)\*

Michael Flores (2009-2011)

Yolani Cruz-Plemons (2010-2011)

\*preparing manuscripts from work completed with their assistance

### PROFESSIONAL SERVICE

#### Peer-Reviewer

Journal of Chemical Ecology (2017); BMC Ecology (2017, 2018); Journal of Pest Science (2017); Economic Entomology (2017, 2018); Environmental Entomology (2017); Florida Entomologist (2016); PLoS ONE (2015, 2017, 2018); Journal of Asia-Pacific Entomology (2015); Ecological Entomology (2018).

#### Outreach

Project Diversify. 'The smell of predators can alert prey of potential danger' (2018)

**Contributor.** Project Biodiversify is a repository of teaching materials and methods aimed at enhancing human diversity and inclusivity in biology courses. I contributed slides and materials.

Childcare Center at Hort Woods, Introduction to Entomology for PreK. (2017-2018)

**"Good" versus "Bad" Bugs.** Teaching a group of 20-30 children, parents and teachers how to identify beneficial insects such as natural enemies or pollinators as well as bugs that might cause us harm (mosquitos, pests, ticks, lice)

Pennsylvania State University Great Insect Fair (Fall 2017, Fall 2018)

**Monarch Butterfly Support.** Reared monarch butterflies for use in butterfly tent, which is visited by thousands of children and parents throughout the event. Volunteered at a table describing monarch oviposition biology to attendees.

Cornell University, Insectapalooza (Fall 2012 & 2013)

**Committee Chair.** Organized, planned and ran the entire event as well as scheduling and organizing all volunteers.

Cornell University, Expanding your Horizons (Spring 2013)

**Committee Chair.** Organized and planned all transportation for students that would attend the event and various workshops throughout the weekend. EYH gathers hundreds of young women interested in STEM each year for hands-on experience in laboratories at a Cornell University.

Cornell University, 4-H Career Explorations workshop – (Summer 2013)

**Speaker.** Spoke to a group of 30 school-age students about careers in agriculture and entomology. Discussed the process of continuing education through graduate studies.

Cornell University, Graduate Student School Outreach Project (GRASSHOPR) – (Spring 2013)

**Instructor.** Developed a 6 week curriculum for elementary students (~30 students) about insect biology and diversity. Weekly lectures, insect collecting field trips and rearing skills were taught.

Entomology Outreach Program - IC3 Montessori School, Ithaca NY (Spring 2013)

**Instructor.** Developed a program for school-age after school students about insects. Taught basic identification, the importance of insects in nature and society.