

**Amanda R. Meier**  
**USDA-NIFA Postdoctoral Research Fellow**  
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### Education

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- Ph.D. University of Michigan**, Ecology and Evolutionary Biology August 2018
- B.S. Muhlenberg College**, Biology (with highest honors) and Environmental Science May 2013  
*summa cum laude*

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### Experience

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- USDA-NIFA Postdoctoral Research Fellow** February 2019-present  
Dept. of Entomology, University of Georgia  
(Mentor: Bill Snyder)
- Postdoctoral Research Associate** September 2018-February 2019  
Dept. of Entomology, Washington State University  
(Mentor: Bill Snyder)
- NSF Graduate Research Fellow and Teaching Assistant** September 2013-August 2018  
Dept. of Ecology and Evolutionary Biology, University of Michigan  
(Mentor: Mark Hunter)

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### Publications

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1. Crossley M. S., **Meier A. R.**, Baldwin E. M., Berry L. L., Crenshaw L. C., Hartman G. L., Lagos-Kutz D., Nichols D. H., Patel K., Varriano S., Snyder, W. E., Moran M. D. 2020. No net insect abundance and diversity declines across US Long Term Ecological Research sites. *Nature Ecology and Evolution* 4:1368-1376.
2. Miller T, Crossley M. S., Fu Z., **Meier A. R.**, Crowder D. W., Snyder, W. E. 2020. Exposure to predators, but not competitors, heightens herbivore susceptibility to entomopathogens. *Biological Control* 151:104403.
3. Fu Z., **Meier A. R.**, Epstein B., Bergland A. O., Castillo-Carrillo C., Cooper W. R., Cruzado R. K., Horton D. R., Jensen, A. S., Kelley J. L., Rashed A., Reitz S. R., Rondon S. I., Thinakaran J., Wenninger E. J., Wohleb C. H., Crowder D. W., Snyder W. E. 2020. Host plants and endosymbionts shape the population genetics of sympatric vectors. *Evolutionary Applications* 00:1-14.
4. Smith O. M., Cohen A. L., Rieser C. J., Davis A., Taylor J. M., Adesanya A. W., Jones M. J., **Meier A. R.**, Reganold J. P., Orpet R. J., Northfield T. D., Crowder D. W. 2019. Organic farming provides reliable environmental benefits but increases variability in crop yields: a global meta-analysis. *Frontiers in Sustainable Food Systems* 3:82.
5. **Meier A. R.**, and M. D. Hunter. 2019. Mycorrhizae alter constitutive and herbivore-induced volatile emissions by milkweeds. *Journal of Chemical Ecology* 45:610-625.
6. **Meier, A. R.**, and M. D. Hunter. 2018. Mycorrhizae alter toxin sequestration and performance of two specialist herbivores. *Frontiers in Ecology and Evolution* 6:33.
7. **Meier, A. R.**, and M. D. Hunter. 2018. Arbuscular mycorrhizal fungi mediate herbivore-induction of plant defenses differently above and belowground. *Oikos* 127:1759-1775.

Publications in advanced stages (available upon request)

*In revision.* **Meier A. R.** and Hunter M. D. Variable effects of mycorrhizal fungi on predator-prey dynamics under field conditions.

*In review.* Crossley, M. S., Smith, O. M., Berry, L. L., Phillips-Cosio, R., Glassberg J. Holman, K. M., Holmquest, J. G., **Meier A. R.**, Varriano, S. A., McClung, M. R., Moran, M. D., Snyder, W. E. Recent climate is creating hotspots of butterfly increase and decline across North America.

**Grants, Fellowships, and Awards** **Over \$275,000 total**

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USDA-NIFA Postdoctoral Research Fellowship (2019-2021) “Managing soil microbes to promote natural pest control”	\$148,000
University of Michigan Undergraduate Research Opportunities Program (2016, 2017) Awarded funding to support undergraduate researchers’ independent projects	\$2,500
Rackham Graduate Student Research Grants (2014, 2017) Awarded funding for various aspects of my dissertation research	\$4,500
University of Michigan Ecology and Evolutionary Biology Block Grants (2014, 2016, 2017) Awarded funding for various aspects of my dissertation research	\$8,542
Matthaei Botanical Gardens Research Award (2013, 2014, 2015, 2016) Awarded funding for various aspects of my dissertation research	\$4,191
Emma J. Cole Fellowship (2015) “Investigating the effects of mycorrhizal fungi on multitrophic interactions”	\$2,502
Matthaei Botanical Gardens Winifred B. Chase Fellowship (2015) “Investigating the influence of root-microbe symbioses on aboveground multitrophic species interactions in milkweed ( <i>Asclepias</i> ) species”	\$2,000
NSF Graduate Research Fellowship (2015-2018) “Investigating the effects of nutritional mutualisms on multitrophic interactions”	\$102,000
University of Michigan Biological Station Graduate Research Fellowship Award (2014) “The influence of mycorrhizae on aboveground tritrophic interactions”	\$3,556
Ayala Fellowship, University of California-Irvine (\$15,000, <i>declined</i> 2013)	
Goldwater Scholar (2012)	
Phi Beta Kappa (2012)	
Udall Honorable Mention (2012)	

**Teaching**

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**Lead Instructor**

<b>Insects and the Environment</b> (ENTO 2010E), University of Georgia Large-enrollment, synchronous online course introducing Entomology to undergraduate non-majors. Co-teaching with graduate student Conor Fair.	Fall 2020
<b>Agroecology in a Changing World</b> (ENTO 8900), University of Georgia Developed and led interdepartmental Agroecology seminar for graduate students	Spring 2020

### Teaching Assistant

<b>General Ecology</b> (BIO 281), University of Michigan Led two discussion sections for upper-level undergraduates	Winter 2015
<b>Introductory Biology: Ecology and Evolution</b> (BIO 171), University of Michigan Led three discussion sections for a large-enrollment introductory biology course	Winter 2014
<b>General Ecology Lab</b> (EEB 372), University of Michigan Led field-based labs, taught science writing and statistics, mentored students in independent research projects	Fall 2013
<b>Tutor and Learning Assistant</b> , Muhlenberg College General Chemistry, Organic Chemistry, and Environmental Science	2010-2013

### Invited Guest Lecturer

<b>Biological Control</b> (online course), University of Georgia “Ecology of Plant-Insect Interactions” Developed an asynchronous module on multitrophic interactions and the implications for biocontrol.	January 2020
<b>Insect Ecology</b> , University of Georgia “Building from the group up: Microbes, Plants, and Herbivores”	October 2019
<b>Plants and Society</b> , Washington State University “The chemistry of plant-insect interactions”	November 2018, 2019
<b>Ecology</b> , University of Michigan “The far-reaching effects of mutualisms”	April 2016

### Pedagogical Training

<b>Basics of Online Learning and Teaching</b> Center for the Integration of Teaching, Research and Learning	Summer 2020
<b>Johns Hopkins Teaching Institute</b>	June 2020
<b>University of Michigan Graduate Teacher Certificate</b>	December 2017
<b>Science Communication Fellow</b> NSF-sponsored program through the University of Michigan Natural History Museum	Winter 2016
<b>Teaching College Science</b> EEB 494; University of Michigan course on Scientific Teaching	Winter 2014

### Mentoring

All students carried out independent projects and presented their findings

#### University of Georgia

1. **Phoebe Scharle**. “Effects of organic fertilizers on microbial communities and pest management” (2019-present) \*awarded a Summer Research Assistantship through the Center for Undergraduate Research Opportunities (\$1000, May 2020).
2. **Tatyanna Campbell**. “Suppression of soil-borne disease by naturally-occurring microbial communities” (2019-present) \*awarded a Summer Research Assistantship through the Center for Undergraduate Research Opportunities (\$1000, May 2020).
3. **Kamaya Brantley**. “Soil amendments affect plant resistance to insect pests” (2019-20) \*awarded an Undergraduate Research Initiative Grant from the College of Agricultural and Environmental Sciences (\$495, February 2020).

4. **Nicholas Miller.** “The effects of soil amendments on the susceptibility of plants to *Sclerotium rolfsii*” (2019)

University of Michigan, Undergraduate Research Opportunities Program

5. **Abigail Randall.** “Arbuscular mycorrhizal fungi alter plant reproduction, growth, and defense in the field” (2017-2018)
6. **Anne Bonds.** “Mycorrhizae alter aphid-induction of plant direct and indirect defenses” (2017-2018)
7. **Kamren Johnson.** “The impact of mycorrhizal fungi on plant direct and indirect defenses” (2017-2018)
8. **Isabelle Katz.** “Mycorrhizal fungi influence aphid population growth” (2016-2017).  
\*selected to present at the Michigan Research Community Spring Symposium
9. **Victoria Varnau.** “Do soil microbes affect plant phenotypes and interactions with insects?” (2016-2017).
10. **Hannah Fuller.** “Impact of mycorrhizal fungi on plant growth and defense” (2016-2017).  
\*awarded a ribbon for her poster at the Undergraduate Research Program symposium.
11. **Harrison Watson.** “Influence of mycorrhizal fungi on milkweed defense traits and growth” (2016-2017).
12. **Fauna Mahootian.** “Plant root fungal symbionts influence above ground plant traits” (2016-2017)

**Academic Presentations**

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**Entomological Society of America 2019:** St. Louis, MO (2019, November)

“Arbuscular mycorrhizal fungi alter herbivore-predator interactions.” (Invited symposium talk)

**Gordon Research Seminar (Plant-Herbivore Interactions):** Ventura, CA (2019, February)

“Arbuscular mycorrhizal fungi alter herbivore-predator interactions” (Symposium talk)

**Gordon Research Conference (Plant-Herbivore Interactions):** Ventura, CA (2019, February)

“Arbuscular mycorrhizal fungi alter herbivore-predator interactions” (Poster)

**PhD Defense Seminar:** Ann Arbor, MI (2018, July)

“The influence of mutualisms below ground on multitrophic interactions above ground”

**Ecological Society of America 2017:** Portland, OR (2017, August)

“Effects of arbuscular mycorrhizal fungi on aboveground multitrophic interactions” (Talk)

**Plant-Insect Ecology Group, Michigan State University:** East Lansing, MI (2017, February)

Impacts of arbuscular mycorrhizal fungi on multitrophic interactions (Invited seminar)

**Gordon Research Seminar & Conference (Plant-Herbivore Interactions):** Ventura, CA

(2017, February) “Impacts of arbuscular mycorrhizal fungi on interactions between plants and herbivores” (Poster)

**Ecological Society of America 2016:** Fort Lauderdale, FL. (2016, August)

“Impacts of arbuscular mycorrhizal fungi on interactions between plants and herbivores” (Talk)

**University of Michigan Ecology and Evolutionary Biology Seminar:** Ann Arbor, MI (2015, April)

“The influence of a belowground mutualism on multitrophic interactions above ground” (Seminar)

**Muhlenberg College Common Hour Seminar:** Allentown, PA (2013, April)

“The ontogeny of defense: Age specific leaf characters and herbivory in sun and shade leaves of *Lindera benzoin*” (Honors thesis defense seminar)

**Ecological Society of America 2012:** Portland, OR (2012, August)

“The ontogeny of defense: Age specific leaf characters and herbivory in sun and shade leaves of *Lindera benzoin*” (Poster)

## **Public Outreach and Service**

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### **Invited seminars to the public**

**Master Gardener Workshop:** MSU Extension Tollgate Farm, Novi, MI (2017, September)

“The secret world of plants: Exploring the invisible among microbes, plants, and insects in your garden”

**Matthaei Botanical Gardens Seminar:** Ann Arbor, MI (2017, June)

“Mycorrhizal fungi shape multitrophic interactions aboveground”

**Michigan Botanical Society Seminar:** Ann Arbor, MI (2016, November)

“Soil fungi effects on plant-insect interactions”

**Wildflower Association of Michigan Seminar:** East Lansing, MI (2016, March)

“Soil fungi effects on plant-insect interactions”

### **Outreach**

**Field Day at the University of Georgia Horticultural Farm:** Watkinsville, GA (2019, June)

Discussed research findings with local farmers and gardeners

**Ecology Workshop at the Matthaei Botanical Gardens:** Ann Arbor, MI (2016 & 2017, October)

Developed and ran a hands-on, workshop about Ecology research for 70 Huron High School students

**Scientist Spotlight, University of Michigan Natural History Museum:** Ann Arbor, MI (2016)

Ran hands-on, inquiry-based activities about plant-insect communication via volatiles for the public

**Science Olympiad Assistant Coach, Washtenaw International Middle Academy:** Ypsilanti, MI (2015-2016) Coached middle-school students in topics such as Ecology, Forensics, and Meteorology

**Green Generation Event Supervisor, Holt Invitational Science Olympiad Tournament:** Holt, MI (2016, March)

**Washtenaw County Middle School Science Fair Judge:** Ann Arbor, MI (2015, March)

**Ecology Coordinator, Future U Program,** University of Michigan (2014-2015)

Held hands-on workshops to excite diverse students from local middle schools about Biology careers. Students toured the lab and carried out mini-experiments.

### **Service**

**Reviewer:** *Functional Ecology, Oecologia, Plant Ecology, PLOS ONE, Environmental Entomology, Ecology and Evolution, Biology Letters*

**Graduate Student Teaching Mentor,** University of Michigan (2016-2017)

Conducted classroom observations, individual consultations, and group discussions on inclusive teaching and active learning strategies with first-time teaching assistants.

**Diversity, Equity, and Inclusion Committee, Graduate Student Representative** (2015-2017)

Department of Ecology and Evolutionary Biology, University of Michigan  
Worked with faculty and staff to address departmental diversity, equity, and inclusion initiatives including student recruitment, annual departmental Town Hall meetings, departmental training, increasing diversity in faculty searches and graduate student applications, and reviewing applications for departmental and college-wide diversity, equity, and inclusion programs.