

# Amanda Lynn Buchanan

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## I. Background

### Professional appointments

- 2015-present Postdoctoral Research Associate  
Department of Entomology, Michigan State University, East Lansing, MI  
Supervisors: Drs. Zsofia Szendrei and Matthew Grieshop
- 2013-15 Postdoctoral Research Associate  
Department of Entomology, University of Maryland, College Park, MD  
Supervisor: Dr. Cerruti Hooks

### Education

- 2012 PhD, Ecology and Evolutionary Biology, Florida State University, Tallahassee, FL  
Advisors: Drs. Nora Underwood and Brian Inouye
- 2001 BA, Spanish/Exercise & Movement Science (Clark Honors College *cum laude*), University of Oregon, Eugene, OR  
Advisor: Dr. V. Pat Lombardi

### Awards and honors

- 2011 Robert K. Godfrey Endowment for Botany, Florida State University
- 2011 Presidential Fellowship, Florida State University
- 2009 Dissertation Research Grant, Florida State University
- 2007 Presidential Fellowship, Florida State University
- 2006 Robert B. Short Scholarship in Zoology, Florida State University
- 2005 Presidential Fellowship, Florida State University

## II. Research

### Publications

- 2017 Buchanan, Hermann, Lund and Szendrei. A meta-analysis of non-consumptive predator effects in arthropods: the influence of organismal and environmental characteristics. *Oikos* accepted
- 2017 Buchanan, Gibbs, Komondy\* and Szendrei. Bee community of commercial potato fields in Michigan and *Bombus impatiens* visitation to neonicotinoid-treated potato plants. *Insects* 8(1): 30
- 2016 Buchanan, Kolb, and Hooks. Can winter cover crops influence weed density and diversity in a reduced tillage vegetable system? *Crop Protection* 90:9-16
- 2015 Kim, Spiesman, Buchanan et al. Selective manipulation of a non-dominant plant and its herbivores affects an old-field plant community. *Plant Ecology* 216: 1029-1045
- 2015 Buchanan, Zobel, Hinds, Rosraio-Lebron and Hooks. Can row spacing influence arthropod

- communities in soybean? Implications for early and late planting. *Environmental Entomology* 44(3): 557-561
- 2015 Buchanan. Effects of damage and pollination on sexual and asexual reproduction in a flowering clonal plant. *Plant Ecology* 216: 273-282
- 2013 Buchanan and Underwood. Attracting pollinators and avoiding herbivores: insects influence plant traits within and across years. *Oecologia* 173: 473-482
- 2013 Buchanan. Damage by *Neochetina* weevils (Coleoptera: Curculionidae) induces resistance in *Eichhornia crassipes* (Commelinales: Pontederiaceae). *Florida Entomologist* 96(2): 458-462
- 2004 Holland, Buchanan and Loubeau. Oviposition choice and larval survival in an obligately pollinating granivorous moth. *Evolutionary Ecology Research* 6: 607-618
- \*undergraduate co-author

**Presentations** (t = talk, p = poster, \* = invited talk)

- 2017 *Integrated pest management in specialty crops: controlling key pests of asparagus* (t\*) Entomol. Soc. of America, Denver CO (upcoming)
- 2016 *Alternative pest management strategies in specialty crops* (t) International Congress of Entomology, Orlando FL
- 2016 *Pest management strategies for asparagus* (t\*) Entomol. Soc. of America North Central Branch, Cleveland OH
- 2015 *Cover crop diversity and management for weed control in organic agro-ecosystems* (t\*) Entomol. Soc. of America/American Society of Agronomy/Crop Science Society of America/Soil Science Society of America, Minneapolis MN
- 2015 *Developing innovative tactics for pest management in asparagus* (p) Entomol. Soc. of America, Minneapolis MN
- 2014 *Soil disturbance and ground cover: How weed communities and weed seed predators respond to tillage and cover crop residue in organic agricultural systems* (t) Ecol. Soc. of America, Sacramento CA
- 2014 *Induced resistance in invasive plants: Implications for biocontrol* (t\*) Entomol. Soc. of America, Portland OR
- 2013 *Plant responses to the joint effects of herbivores and pollinators* (t) University of Maryland, College Park MD
- 2012 *Allocation shifts favor asexual reproduction: response to damage and pollination in a clonal flowering plant (Eichhornia crassipes)* (t) Ecol. Soc. of America, Portland OR
- 2011 *Attracting pollinators and avoiding herbivores: Resource allocation in a perennial plant* (t) Ecol. Soc. of America, Austin TX
- 2011 *Insect foragers and plant allocation pattern: Within- and among-year effects in *Chamerion angustifolium** (p) Bucknell University, Lewisburg PA
- 2009 *A dynamic optimization model of the influence of allocation pattern and herbivore and pollinator environments on plant fitness* (p) Ecol. Soc. of America, Albuquerque NM
- 2009 *Evolutionary consequences of plant phenology, herbivory, and pollination* (t) Southeastern Ecology and Evolution Conference, Gainesville FL
- 2006 *Do magnet species, floral diversity and fire management influence pollination success in the rewardless orchid *Calopogon barbatulus*?* (p) Ecol. Soc. of America, Memphis TN

## Support

- 2016-8 Buchanan (primary PI), Grieshop and Szendrei. *Developing novel pest management tactics for asparagus and cherry*. Project GREEN Michigan State University, \$80,000
- 2016 Szendrei, Buchanan (primary PI) and Grieshop. *Developing novel pest management tactics for asparagus*. Michigan Asparagus Research Committee, \$5,000
- 2013-4 Hooks, Chen and Buchanan (secondary PI). *Developing economic and ecological sustainable pest management practices for growers of leguminous and solanaceous crops*. USDA-NIFA Northeastern IPM Competitive Grants Program, \$83,058
- 2013-4 Chen, Hooks and Buchanan (primary PI). *Evaluation of cover crop mixtures on soil fertility and quality, insect and pest management, crop yield and profitability for corn production*. USDA-OREI Integrated Agriculture and Natural Resources Extension and Research Competitive Grants Program, \$32,000
- 2011 Buchanan (sole PI). *Growth, reproduction, and herbivore resistance in water hyacinth (Eichhornia crassipes)*. Julia Morton Invasive Plant Research Grant, Florida Exotic Pest Plant Council, \$1,612

## Undergraduate research mentees

Michigan State University (1)  
University of Maryland (4)

Florida State University (2)  
Rocky Mountain Biological Lab (1)

## III. Teaching

### Undergraduate courses

- 2012 General Biology for Non-Majors (Primary Instructor, lecture) BSC1005
- 2012 Experimental Biology: Pollination Biology (Teaching Assistant, lab) BSC3402L
- 2011 Plant Biology (Teaching Assistant, lab) BOT3015L
- 2011 Anatomy & Physiology II (Teaching Assistant, lab) BSC2086L
- 2010 Plant Biology (Teaching Assistant, lecture) BOT3015
- 2010 Research Methods (Teaching Assistant, lecture + lab) ISC3523C
- 2009 Experimental Biology: Foraging Ecology (Teaching Assistant, lab) BSC3402L
- 2008 General Ecology (Teaching Assistant, lecture) PCB3043
- 2007 General Ecology (Teaching Assistant, lecture) PCB3043
- 2006 Anatomy & Physiology I (Teaching Assistant, lab) BSC2085L

### Undergraduate guest lectures

- “Chemical ecology” for General Ecology PCB3043
- “Mutualism” for General Ecology PCB3043

## IV. Extension/Outreach

### Publications

- 2017 Buchanan et al. Squash bugs as pests of cucurbits in Michigan.  
[http://msue.anr.msu.edu/news/squash\\_bugs\\_as\\_pests\\_of\\_cucurbits\\_in\\_michigan](http://msue.anr.msu.edu/news/squash_bugs_as_pests_of_cucurbits_in_michigan)
- 2016 Werling, Buchanan, and Szendrei. A tale of two cutworms: Cutworm control in asparagus.  
[http://msue.anr.msu.edu/news/a\\_tale\\_of\\_two\\_cutworms\\_cutworm\\_control\\_in\\_asparagus](http://msue.anr.msu.edu/news/a_tale_of_two_cutworms_cutworm_control_in_asparagus)
- 2015 Buchanan et al. Common and spotted asparagus beetle as pests of asparagus.  
[http://vegetable.ent.msu.edu/images/asparagus-beetle-factsheet-7\\_9\\_15.pdf](http://vegetable.ent.msu.edu/images/asparagus-beetle-factsheet-7_9_15.pdf)
- 2015 Buchanan et al. Squash vine borer as a pest of cucurbits in Michigan.  
[http://msue.anr.msu.edu/uploads/files/AABI/factsheet\\_squash\\_vine\\_borer.pdf](http://msue.anr.msu.edu/uploads/files/AABI/factsheet_squash_vine_borer.pdf)
- 2015 Phillips and Buchanan. Squash vine borer biology and management.  
[http://msue.anr.msu.edu/news/squash\\_vine\\_borer\\_biology\\_and\\_management](http://msue.anr.msu.edu/news/squash_vine_borer_biology_and_management)
- 2014 Buchanan and Hooks. Cover crops can improve soil quality and suppress weeds. University of Maryland Extension *Vegetable and Fruit Headline News* 5(7): 5-8
- 2014 Hooks, Buchanan, Chen, and Rosario-Lebron. Offing cover crops for weed suppression: Featuring the roller-crimper and other mechanical contraptions. University of Maryland Extension *Vegetable and Fruit Headline News* 5(6): 4-8
- 2013 Buchanan, Chen, and Hooks. Managing the weed seedbank with cover crops and tillage. University of Maryland Extension *Vegetable and Fruit Headline News* 4(10): 4-6
- 2013 Hooks, Buchanan, and Chen. The stale seedbed technique: a relatively underused alternative weed management tactic for vegetable production. University of Maryland Extension *Vegetable and Fruit Headline News* 4(5): 5-7
- 2013 Chen, Buchanan, and Hooks. Using reduced tillage and cover crop residue to manage weeds in vegetable production. University of Maryland Extension *Vegetable and Fruit Headline News* 4(10): 1-4

### Presentations (m = grower's meeting, f = field demonstration)

- 2017 *Asparagus insect management update* (m) Oceana Asparagus Day, New Era, MI
- 2017 *Asparagus insect pest management* (m) Asparagus Advisory Council, Dewitt, MI
- 2016 *Habitat management for insect control* (f) Zilke Vegetable Farm Field Day, Milan, MI
- 2016 *Asparagus research update* (f) Oceana Research Tour, Oceana County, MI
- 2016 *Asparagus insect pest management* (m) Oceana Asparagus Day, New Era, MI
- 2016 *Managing Japanese beetle and asparagus miner in asparagus* (m) Great Lakes Expo, Grand Rapids, MI
- 2015 *Asparagus research update* (f) Oceana Research Tour, Oceana County, MI
- 2014 *Ecological effects of winter cover crops on organic vegetable production* (m) USDA-ARS-UMD Annual Trends in Agriculture Fall Symposium, Beltsville, MD
- 2014 *Native bees as crop pollinators* (m) MD Agricultural Pesticide Conference, Denton, MD
- 2014 *Using cover crops for pest suppression in crookneck squash* (m) MD Organic Food and Farming Association, Annapolis, MD
- 2014 *Sustainable pest control: Using cover crops and tillage in vegetable crops* (m) Eastern Shore Vegetable Meeting, Cambridge, MD

- 2014 *Winter cover crops influence soil quality, pest suppression, and crop yield* (m) Southern Maryland Vegetable and Fruit Meeting, Gambrills, MD
- 2013 *Organic vegetable planting systems, cover crops and greenhouse gas emissions* (f) Central Maryland Research and Education Center Field Day, Upper Marlboro, MD
- 2013 *Using winter cover crops to enhance organic vegetable industry* (f) Central Maryland Research and Education Center Field Day, Upper Marlboro, MD

## **V. Service**

### **Professional societies**

- 2013-present Entomological Society of America  
 2006-12 Ecological Society of America

### **Manuscript reviews**

Acta Oecologica (1), American Journal of Botany (1), Annals of Applied Biology (1), Ecology (1), Environmental Entomology (3), Oecologia (1), Plant Production Science (1), PLOS One (1), Weed Research (1)

### **Volunteering**

- 2017 Judge, Graduate Academic Conference, Michigan State University, East Lansing, MI
- 2016 Judge, University Undergraduate Research and Arts Forum, MSU, East Lansing, MI
- 2016 Judge, Plant Science Graduate Student Research Symposium, MSU, East Lansing, MI
- 2015 Judge, Chesapeake Bay Governor's School Science Symposium, Virginia Commonwealth University, Richmond, VA
- 2013 Demonstrator, Maryland Day Insect Zoo, University of Maryland, College Park, MD
- 2013 Judge, Graduate Research Interaction Day, UMD, College Park, MD
- 2012 Presenter, "Insects as Food", School of Arts and Sciences and Leon County Libraries, Tallahassee, FL
- 2011 Instructor, "Art and Ecology", Pineview Elementary School, Tallahassee, FL
- 2004-5 Teacher, Biology and Integrated Science, U.S. Peace Corps, Guyana, South America