

Amanda Lynn Buchanan

Source Materials Development • ALK Source Materials

448 S. Lochsa St., Post Falls, ID 83854

208-618-9263 • Amanda.Buchanan@alk.net • alynnbuchanan.com

Professional appointments

2018-present Development Scientist/Entomologist, ALK Source Materials, Post Falls ID
2015-2018 Postdoctoral Research Assoc. Entomology, Michigan State University, East Lansing MI
2013-2015 Postdoctoral Research Assoc. Entomology, University of Maryland, College Park MD

Education

2012 PhD, Ecology and Evolutionary Biology, Florida State University, Tallahassee FL
2001 BA *cum laude*, Spanish/Exercise & Movement Science, University of Oregon, Eugene OR

Research publications (*undergraduate co-author)

Buchanan, Grieshop and Szendrei 2018. Assessing annual and perennial flowering plants for biological control in asparagus. *Biological Control* 127: 1-8.

Buchanan and Hooks 2018. Influence of winter cover crop mulch on arthropods in a reduced tillage cucurbit system. *Environmental Entomology* 47:2, 292-299

Buchanan, Hermann, Lund & Szendrei 2017. A meta-analysis of non-consumptive predator effects in arthropods: the influence of organismal and environmental characteristics. *Oikos* 126(9): 1123-1240

Buchanan, Gibbs, Komondy* & Szendrei 2017. Bee community of commercial potato fields in MI and *Bombus impatiens* visitation to neonicotinoid-treated potato plants. *Insects* 8(1): 30

Buchanan, Kolb, & Hooks 2016. Can winter cover crops influence weed density and diversity in a reduced tillage vegetable system? *Crop Protection* 90:9-16

Kim, Spiesman, Buchanan et al. 2015. Selective manipulation of a non-dominant plant and its herbivores affects an old-field plant community. *Plant Ecology* 216: 1029-1045

Buchanan, Zobel, Hinds, Rosario-Lebron & Hooks 2015. Can row spacing influence arthropod communities in soybean? *Environmental Entomology* 44(3): 557-561

Buchanan 2015. Effects of damage and pollination on sexual and asexual reproduction in a flowering clonal plant. *Plant Ecology* 216: 273-282

Buchanan & Underwood 2013. Attracting pollinators and avoiding herbivores: insects influence plant traits within and across years. *Oecologia* 173: 473-482

Buchanan 2013. Damage by *Neochetina* weevils (Coleoptera: Curculionidae) induces resistance in *Eichhornia crassipes* (Commelinales: Pontederiaceae). *Florida Entomologist* 96(2): 458-462

Holland, Buchanan & Loubeau 2004. Oviposition choice and larval survival in an obligately pollinating granivorous moth. *Evolutionary Ecology Research* 6: 607-618

Selected research presentations (*invited talk)

- 2018 *Attract and kill technology to manage a generalist herbivore. Entomological Society of America North Central Branch meeting, Madison WI
- 2018 * Biological control for herbivore management in a perennial vegetable crop. Entomological Society of America North Central Branch meeting, Madison WI
- 2017 *Integrated pest management for specialty crops. University of Massachusetts, Amherst MA
- 2017 *Habitat management for conservation biocontrol of a stem mining fly. Entomological Society of America national meeting, Denver CO
- 2017 *Agro-ecology in specialty crops: habitat management and IPM for pest control. University of California, Riverside CA
- 2016 Alternative pest management strategies in specialty crops. International Congress Entomology, Orlando FL
- 2016 *Ecology-based approaches to pest management. USDA-ARS, Hilo HI
- 2016 *Pest management strategies for asparagus. Entomological Society of America North Central Branch meeting, Cleveland OH
- 2015 *Cover crop diversity and management for weed control in organic agro-ecosystems. ESA/ASA/CSSA/SSSA joint national meeting, 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. Ecological Society of America national meeting, Sacramento CA
- 2014 *Induced resistance in invasive plants: Implications for biocontrol. Entomological Society of America national meeting, Portland OR
- 2012 Allocation shifts favor asexual reproduction: response to damage and pollination in a clonal flowering plant (*E. crassipes*). Ecological Society of America national meeting, Portland OR
- 2011 Attracting pollinators and avoiding herbivores: Resource allocation in a perennial plant. Ecological Society of America national meeting, Austin TX
- 2009 A dynamic optimization model of the influence of allocation pattern and herbivore and pollinator environments on plant fitness. Ecological Society of America national meeting, Albuquerque NM
- 2009 Evolutionary consequences of plant phenology, herbivory, and pollination. Southeastern Ecology and Evolution Conference, Gainesville FL

Grants, honors and awards

- 2018 Buchanan & Szendrei. Habitat management and landscape effects on conservation biological control in asparagus. USDA-NIFA Agriculture and Food Research Initiative Postdoctoral Grant, \$155,693 (declined)
- 2016 Buchanan, Grieshop & Szendrei. Developing novel pest management tactics for asparagus & cherry. Project GREEN Michigan State University, \$80,000
- 2016 Szendrei, Buchanan & Grieshop. Developing novel pest management tactics for asparagus. Michigan Asparagus Research Committee, \$5,000
- 2013 Hooks, Chen & Buchanan. Developing economic & ecological sustainable pest management practices for growers of leguminous and solanaceous crops. USDA-NIFA Northeastern IPM Competitive Grants Program, \$83,058

- 2013 Chen, Hooks & Buchanan. Evaluation of cover crop mixtures on soil fertility & quality, insect & pest management, crop yield & profitability for corn production. USDA-OREI Integrated Agriculture & Natural Resources Extension & Research Competitive Grants Program, \$32,000
- 2011 Buchanan. Growth, reproduction, & herbivore resistance in water hyacinth (*Eichhornia crassipes*). Florida Exotic Pest Plant Council Julia Morton Invasive Plant Research Grant, \$1,612
- 2011 Robert K. Godfrey Endowment for Botany, Florida State University, \$1000
- 2011 Presidential Fellowship, Florida State University
- 2009 Dissertation Research Grant, Florida State University, \$750
- 2007 Presidential Fellowship, Florida State University
- 2007 Mechanisms of spatial & temporal variability in pollinating bee guilds, NSF GRF Hon. Mention
- 2006 Robert B. Short Scholarship in Zoology, Florida State University, \$1000
- 2005 Presidential Fellowship, Florida State University

Extension publications

- Buchanan et al. 2017. Striped and spotted cucumber beetles as pests of cucurbits in Michigan. *MSU Extension*
- Buchanan et al. 2017. Squash bugs as pests of cucurbits in Michigan. *MSU Extension*
- Werling, Buchanan & Szendrei 2016. A tale of two cutworms: Cutworm control in asparagus. *MSU Extension*
- Buchanan et al. 2015. Common and spotted asparagus beetle as pests of asparagus. *MSU Extension*
- Buchanan et al. 2015. Squash vine borer as a pest of cucurbits in Michigan. *MSU Extension*
- Phillips & Buchanan 2015. Squash vine borer biology and management. *MSU Extension*
- Krasnow, Hausbeck, Bryant, Morrison, Werling, Quinn, Szendrei & Buchanan 2015. Diseases and insects in Michigan cucurbits and their management. *MSU Extension*
- Buchanan & Hooks 2014. Cover crops can improve soil quality and suppress weeds. *UMD Extension Vegetable and Fruit Headline News* 5(7): 5-8
- Hooks, Buchanan, Chen & Rosario-Lebron 2014. Offing cover crops for weed suppression: Featuring the roller-crimper and other mechanical contraptions. *UMD Extension Vegetable and Fruit Headline News* 5(6): 4-8
- Buchanan, Chen & Hooks 2014. Managing the weed seedbank with cover crops and tillage. *UMD Extension Vegetable and Fruit Headline News* 4(10): 4-6
- Hooks, Buchanan & Chen 2013. The stale seedbed technique: a relatively underused alternative weed management tactic for vegetable production. *UMD Extension Vegetable and Fruit Headline News* 4(5): 5-7
- Chen, Buchanan & Hooks 2013. Using reduced tillage and cover crop residue to manage weeds in vegetable production. *UMD Extension Vegetable and Fruit Headline News* 4(10): 1-4

Selected extension presentations (m = grower's meeting, f = field demonstration, w = workshop)

- 2017 Attract-and-kill for Japanese beetle management in asparagus and tree fruit (m). Cold Spring Orchard, Belcherville MA
- 2017 Attract-&-kill: Case study with Japanese beetle (w) Small Farm Pest Management, Ann Arbor MI
- 2016 Habitat management for insect control (f) Zilke Vegetable Farm Field Day, Milan 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 & Farming Association, Annapolis MD
- 2014 Sustainable pest control: Using cover crops & tillage in vegetable crops (m) Eastern Shore Vegetable Meeting, Cambridge MD
- 2014 Winter cover crops influence soil quality, pest suppression & crop yield (m) Southern Maryland Vegetable & Fruit Meeting, Gambrills MD
- 2013 Organic vegetable planting systems, cover crops & greenhouse gas emissions (f) Central Maryland Research & Education Center Field Day, Upper Marlboro MD
- 2013 Using winter cover crops to enhance organic vegetable industry (f) Central Maryland Research & Education Center Field Day, Upper Marlboro MD

Teaching (*primary instructor, ^{TA}graduate teaching assistant, ^Gguest lecturer)

"Integrated Pest Management" lecture and lab for Vegetable Production & Management (MSU) ^G

"Mutualism" lecture for General Ecology (FSU) ^G

"Chemical Ecology" lecture for General Ecology ^G

General Biology Lecture for Non-Majors*

Plant Biology Lecture ^{TA}

Plant Biology Lab ^{TA}

Experimental Biology Lab: Pollination Biology ^{TA}

Experimental Biology Lab: Foraging Ecology ^{TA}

General Ecology Lecture ^{TA}

Research Methods Lecture + Lab ^{TA}

Anatomy & Physiology I & II Lab ^{TA}

Leadership & Service

Professional societies

2013-present Entomological Society of America

2017-2018 Postdoctoral Association of Michigan State University

2006-2012 Ecological Society of America

Manuscript reviews

Insects (guest editor), Acta Oecologica, American Journal of Botany, Annals of Applied Biology, Crop Protection, Ecology, Environmental Entomology, Oecologia, Plant Production Science, PLOS One, Weed Research

Mentored undergraduate research projects

- 2011 Kerri Brinegar, Effects of plant height on pollination & seed predation in *Rhexia virginica*, Florida State University
- 2009 Rachel Atchison, Root herbivory by banded cucumber beetles (*Diabrotica alateata*) affects zucchini plant performance (*Cucurbita pepo*), Florida State University
- 2009 Hannah Carey, Clonal integration of induced resistance to herbivory damage in *Chamerion angustifolium*, Rocky Mountain Biological Lab

Community service

- 2017-present Postdoc Association, Digital Presence Steering Committee, Michigan State University
- 2017 Judge, Graduate Academic Conference, Michigan State University
- 2016 Judge, University Undergraduate Research & Arts Forum, Michigan State University
- 2016 Judge, Plant Science Graduate Student Research Symposium, Michigan State University
- 2015 Judge, Chesapeake Bay Governor's School Science Symposium, Virginia Commonwealth University, Richmond, VA
- 2013 Demonstrator, Maryland Day Insect Zoo, University of Maryland
- 2013 Judge, Graduate Research Interaction Day, University of Maryland
- 2012 Presenter, "Insects as Food", School of Arts & Sciences, Tallahassee FL
- 2012 Presenter, "Insects as Food", Leon County Libraries, Tallahassee FL
- 2011 Instructor, "Art & Ecology", Pineview Elementary School, Tallahassee FL
- 2004-2005 Teacher, Biology & Integrated Science, U.S. Peace Corps, Guyana, South America