

# Mary Margaret Gardiner

## EDUCATION

Ph.D.	Michigan State University	2008	Entomology
M.S.	University of Idaho	2002	Entomology
B.S.	University of Michigan	1999	Resource Ecology and Management

## APPOINTMENTS AND PROFESSIONAL EXPERIENCE

- **Co-Director**, Environmental Science Graduate Program, The Ohio State University, Columbus, OH. (2021-present)
- **Professor**, Department of Entomology, The Ohio State University, Columbus, OH. (2019-present)
- **Associate Professor**, Department of Entomology, The Ohio State University, Columbus, OH. (2014-2019)
- **Assistant Professor**, Department of Entomology, The Ohio State University, Wooster, OH. (2009-2014)
- **Visiting Research Scientist**, Great Lakes Bioenergy Research Center, Michigan State University, East Lansing, MI. (2008)
- **Research Support Scientist**, Department of Plant Soil and Entomological Sciences, University of Idaho, Parma Research and Extension Center, Parma, ID. (2002-2004)

**Adjunct Appointments:** Pontificia Universidad Catolica de Chile, Cleveland State University, Wright State University

## PUBLICATIONS

(first author: \*graduate student, ~postdoc, +undergraduate, ^based on undergraduate research)

## H Index: 25

1. ~Perry, K.I., C.B. Riley, F. Fan, J. Radl, D.A. Herms and **M.M. Gardiner**. 2022. The value of hybrid and nonnative ash for the conservation of ash specialists is limited following late stages of emerald ash borer invasion. *Agricultural and Forest Entomology* 24: 355-370
2. \*Pham, M.A., S.B. Scott, L.R. Fyie, and **M.M. Gardiner**. 2022. The potential of sustainable landscaping programs to encourage conservation in United States residential landscapes. *Urban Ecosystems* 24: 1481-1490. DOI: 10.1007/s11252-022-01241-8
3. \*Scott, S.B., F.S. Sivakoff, and **M.M. Gardiner**. 2022. Environmentally relevant concentrations of heavy metals diminishes bumble bee colony growth. *Urban Ecosystems* 25: 989-997. DOI: 10.1007/s11252-022-01206-x
4. \*Riley, C.B., M. Raupp, K. Fite, and **M.M. Gardiner**. 2022. Woody plant biodiversity explains pest management interventions in residential landscapes. *Urban Forestry and Urban Greening* 67: 127439. DOI: 10.1016/j.ufug.2021.127439
5. **Gardiner, M.M.** and H.E. Roy. The role of community science in Entomology. 2022. *Annual Review of Entomology* 67: 437-456. DOI: 10.1146/annurev-ento-072121-075258
6. \*Turo, K.J. and **M.M. Gardiner**. 2021. Effects of urban greenspace configuration and native vegetation on bee and wasp reproduction. *Conservation Biology* 35: 1755-1765. DOI: 10.1111/cobi.13753
7. **Gardiner, M.M.**, K.I. Perry, C.B. Riley, K.J. Turo, Y. Delgado de la flor, F.S. Sivakoff. 2021. Community scientist data suggests that urbanization and forest habitat loss threaten aphidophagous native lady beetles. *Ecology and Evolution* 11: 27610-2774. DOI: 10.1002/ece3.7229

8. \*Fyie, L.R., **M.M. Gardiner**, and M. Meuti. 2021. Artificial light at night prolongs seasonal exposure to biting mosquitoes. *Journal of Insect Physiology* 129: 104194
9. **Gardiner, M.M.**, Delgado de la flor, Y.A., Parker, D.M., and J.D. Harwood. 2021. Rich and abundant spider communities result from enhanced dietary niche breadth and reduced overlap in urban greenspaces. *Ecological Applications* 31: e02282. DOI: 10.1002/eap.2282
10. ~Perry, K.I., N.C. Hoekstra, S.W. Culman and **M.M. Gardiner**. 2020a. Vacant lot soil degradation and mowing frequency shape communities of belowground invertebrates and urban spontaneous vegetation. *Urban Ecosystems*. DOI: 10.1007/s11252-020-01069-0
11. \*Turo, K.J., M.R. Spring, F.S. Sivakoff, Y.A. Delgado de la flor, and **M.M. Gardiner**. 2020. Bee community structure and foraging in urban vacant land: Implications for managing pollinator friendly cities. *Journal of Applied Ecology*. DOI: 10.1111/1365-2664.13773
12. \*Parker, D.M., K.J. Turo, Y.A. Delgado de la flor, and **M.M. Gardiner**. 2020. Landscape context influences the community assembly of native lady beetles occupying urban vacant land. *Urban Ecosystems*. DOI: 10.1007/s11252-020-01000-7
13. \*Turo K.J. and **M.M. Gardiner**. 2020. The balancing act of urban conservation. *Nature Communications* 11: 3773. DOI: 10.1038/s41467-020-17539-0
14. ~Perry, K., N. Hoekstra, Y.A. Delgado de la flor, and **M.M. Gardiner**. 2020b. Disentangling landscape and local drivers of ground-dwelling beetle community assembly in an urban ecosystem. *Ecological Applications*: E02191. DOI: 10.1002/eap.2191
15. ~Sivakoff, F.S., \*S.P. Prajzner, and **M.M. Gardiner**. 2020. Urban heavy metal contamination limits bumble bee colony growth. *Journal of Applied Ecology* 57: 1561-1569. DOI: 10.1111/1365-2664.13651
16. \*Delgado de la flor, Y.A., K. Perry, K.J. Turo, D.M. Parker. T. Thompson, and **M.M. Gardiner**. 2020. Local and landscape-scale environmental filters drive the functional diversity and taxonomic composition of spiders across urban greenspaces. *Journal of Applied Ecology* 57: 1570-1580
17. \*Riley, C.B. and **M.M. Gardiner**. 2020. Examining the relationship and distributional equity of urban tree canopy cover and ecosystem services across United States cities. *PLoS ONE* 15: e0230398
18. \*Dieterich Mabin M.E., C. Welty and **M.M. Gardiner**. 2020. Predator richness predicts pest suppression within organic and conventional summer squash (*Cucurbita pepo* L. Cucurbitales: Cucurbitaceae). *Agriculture, Ecosystems and Environment* 287: 106689
19. \*Yang, L., K.J. Turo, E. Alfaro Inocente, J. Tian, N. Hoekstra, P.M. Piermarini and **M.M. Gardiner**. 2019. Can urban greening increase vector abundance in cities? The impact of mowing, local vegetation and landscape composition on adult mosquito populations. *Urban Ecosystems* 22: 827-839
20. Grez, A.A., Zaviezo T. **Gardiner, M.M.** and Alaniz A. 2019. Urbanization filters coccinellids composition and functional trait distribution in greenspaces across greater Santiago, Chile. *Urban Forestry and Urban Greening* 38: 337-345
21. \*Kautz A.R., and **M.M. Gardiner**. 2019. Agricultural intensification may create an attractive sink for Dolichopodidae, a ubiquitous but understudied predatory fly family. *Journal of Insect Conservation* 23: 453-465

22. \*Turo K.J. and **M.M. Gardiner**. 2019. From potential to practical: Needs to achieve pollinator conservation in urban public greenspace. *Frontiers in Ecology and the Environment* 17: 167-175
23. \*Riley, C.B., K.I. Perry, K. Ard, and **M.M. Gardiner**. 2018. Asset or liability? Ecological and sociological tradeoffs of urban spontaneous vegetation in shrinking cities. *Sustainability* 10: 2039
24. \*Richardson, R.T., **M.M. Gardiner** and R.M. Johnson. 2018. A reference cytochrome c oxidase subunit I database curated for hierarchical classification of arthropod metabarcoding data. *PeerJ* 6: e5126
25. ~Sivakoff, F.S., S.P. Prajzner, and **M.M. Gardiner**. 2018 Unique bee community assembly within vacant lots and urban farms results from variation in surrounding urbanization intensity. *Sustainability* 10: 1926
26. **Gardiner, M.M.**, C.B. Riley, R. Bommarco, E. Öckinger 2018. Rights-of-way: a potential conservation resource. *Frontiers in Ecology and the Environment* 18: 149-158
27. \*Kleinke, B., S.P. Prajzner, C.A. Gordon, N.C. Hoekstra, A.R. Kautz, A.M. Vossbrinck, and **M.M. Gardiner**. 2018. Identifying barriers to citizen scientist retention when measuring pollination services. *Citizen Science: Theory and Practice* 3: 1-10
28. \*Riley, C.B., D.A. Herms and **M.M. Gardiner**. 2018. Exotic trees contribute to urban forest diversity and ecosystem services in inner-city Cleveland, OH. *Urban Forestry & Urban Greening* 29: 367-376
29. \*Delgado, Y.A., Burkman, C.E. Eldridge T.K. and **M.M. Gardiner**. 2017. Patch and landscape-scale variables influence the taxonomic and functional composition of beetles in urban greenspaces. *Ecosphere* 8: e02007
30. ~Sivakoff, F.S. and **M.M. Gardiner**. 2017. Soil lead contamination decreases bee flower visit duration at sunflowers. *Urban Ecosystems* 20: 1221-1228
31. **Gardiner, M.M.** and J.D. Harwood. 2017. Editorial overview: Current investigations of environmental drivers and community interactions that influence biological control. *Current Opinions in Insect Science* 20: vii-xi
32. **Gardiner, M.M.** and J.D. Harwood. 2017. Influence of heavy metal contamination on urban natural enemies and biological control. *Current Opinions in Insect Science* 20: 45-53
33. ^Spring, M.R., K.S. Lustofin, C.H. Lin, M.M. Gardiner, and D. McShaffrey. 2016. Quantifying bee diversity and resource use in the Appalachian foothills near Marietta, Ohio. *Ohio Biological Survey Notes* 6: 14-26
34. \*Rusch, A., R. Chaplin-Kramer, **M.M. Gardiner**, V. Hawro, J. Holland, D. Landis, C. Thies, T. Tschardtke, W.W. Weisser, C. Winqvist, M. Woltz, and R. Bommarco. 2016. Agricultural landscape simplification reduces natural pest control: A quantitative synthesis. *Agriculture, Ecosystems and Environment* 221: 198-204
35. \*Chaffin B.C, W.D. Shuster, A.S. Garmestani, B. Furio, S. Albro, **M.M. Gardiner**, M. Spring, and O. Odom Green. 2016. A tale of two rain gardens: Barriers and bridges to adaptive management of urban stormwater in Cleveland, Ohio. *Journal of Environmental Management* 183: 431-441
36. ^Todd, K.J., **M.M. Gardiner**, and E. D. Lindquist. 2016. Native pollinator (Hymenoptera: Apoidea) conservation value of *Helianthus annuus* plantings at variable densities. *Journal of the Kansas Entomological Society* 89: 158-167
37. ~Odom Green, O., S. Albro, N.C. Ban, A. Berland, C.E. Burkman, **M.M. Gardiner**, A.S. Garmestani, L. Gunderson, M.E. Hopton, M.L. Schoon, W.D. Shuster. 2016. Adaptive governance to promote ecosystem services in reserves of urban green space. *Urban Ecosystems* 19: 77-93

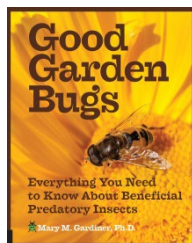
38. Roy, H.E., P.M.J. Brown, T. Adriaens, N. Berkvens, I. Borges, S. Clusella-Trullas, R. Eschen, Arnaud Estoup, T. Evans, B. Facon, **M.M. Gardiner**, A. Grez, T. Gullemaud, D. Haelewaters, A. Honek, A. Howe, C. Hui, M. Kenis, L. Lawson Handley, E. Lombaert, J. Losey, D. Maes, K. Murray, G. San Martin, I. Minnaar, O. Nedved, Marina J. Orlova-Bienkowskaja, H.P. Ravn, M.G. Saethre, A. Soares, R. Stals, M. Tinsley, A. Vandereycken, S. Viglasova, P. Zach, T. Zaviezo, M. Zdena, and Z. Zhao. 2016. The harlequin ladybird, *Harmonia axyridis*: global perspectives on invasion history and ecology. *Biological Invasions* 18: 997-1044
39. \*Liu, B., L. Yang, F. Yang, Q. Wang, Y. Yang, Y. Lu and **M.M. Gardiner**. 2016. Landscape diversity enhances parasitism of the cotton bollworm (*Helicoverpa armigera*) eggs by *Trichogramma chilonis* in cotton. *Biological Control* 93: 15-23
40. \*Phillips, B.W. and **M.M. Gardiner**. 2016. Does local habitat management or large-scale landscape composition alter the biocontrol services provided to pumpkin agroecosystems? *Biological Control* 92: 181-194
41. ^Spring, M., K. Lustofin and **M.M. Gardiner**. 2015. Occurrence of a gynandromorphic *Bombus bimaculatus* (Hymenoptera: Apidae) in Southeastern Ohio. *Great Lakes Entomologist*. 48(3&4): 155-163
42. \*Phillips, B.W. and **M.M. Gardiner**. 2015. Use of video surveillance to measure the influences of habitat management and landscape composition on pollinator visitation and pollen deposition in pumpkin (*Cucurbita pepo*) agroecosystems. *Peer J*: e1342
43. \*Burkman, C.E. and **M.M. Gardiner**. 2015. Spider assemblages within greenspaces of a deindustrialized urban landscape. *Urban Ecosystems* Vol 18: 793-818
44. Grez, A.A., T. Zaviezo and **M.M. Gardiner**. 2014. Local predator composition and landscape affects biological control of aphids in alfalfa fields. *Biological Control* 76: 1-9
45. **Gardiner, M.M.**, S.P. Prajzner, C.E. Burkman, S. Albro, and P.S. Grewal. 2014. Vacant land conversion to community gardens: influences on generalist arthropod predators and biocontrol services in urban greenspaces. *Urban Ecosystems* 17: 101-122
46. \*Burkman, C.E. and **M.M. Gardiner**. 2014. Urban greenspace design and landscape context influence natural enemy community composition and function. *Biological Control* 75: 58-67
47. \*Chisholm, P.J., **M.M. Gardiner**, E.G. Moon and D.W. Crowder. 2014. Tools and techniques for investigating the impacts of habitat complexity on biological control. *Biological Control* 75: 48-57
48. \*Smith, C.A. and **M.M. Gardiner**. 2013. Biodiversity loss following the introduction of exotic competitors: Does intraguild predation explain the decline of native lady beetles? *PLoS ONE* e84448
49. **Gardiner, M.M.**, C.E. Burkman, and S.P. Prajzner. 2013. The value of vacant land for arthropods and the ecosystem services they support in changing urban landscapes. *Invited Mini-Review, Environmental Entomology* 42: 1123-1136
50. \*Smith, C.A. and **M.M. Gardiner**. 2013. Oviposition habitat influences egg predation of native and exotic coccinellids by generalist predators. *Biological Control* 67: 235-245
51. **Gardiner, M.M.**, L.L. Allee, P.M.J. Brown, J.E. Losey, H.E. Roy, and R. Rice Smyth. 2012. Lessons from lady beetles: accuracy of monitoring data from the US and UK. *Frontiers in Ecology and the Environment* 10: 471-476

52. Michel, A.P., W. Zhang, and **M.M. Gardiner**. 2012. Development and characterization of microsatellite loci for the convergent lady beetle, *Hippodamia convergens*. *Molecular Ecology Resources*: 12, 185-189
53. **Gardiner, M.M.**, M.E. O'Neal, and D.A. Landis. 2011. Intraguild predation and native lady beetle decline. *PLoS ONE*. E23576
54. **Gardiner, M.M.**, D.A. Landis, C. Gratton, C.D. DiFonzo, M. O'Neal, J. Chacon, N. Schmidt, E. Mueller and G.E. Heimpel. 2010. Landscape composition influences the activity density of Carabidae and Araneae in soybean fields. *Biological Control* 55: 1-19
55. **Gardiner, M.M.**, J. Tuell, R. Isaacs, J. Gibbs, J. Ascher, and D.A. Landis. 2010. Implications of three biofuel crops for beneficial arthropods. *BioEnergy Research* 3: 6-19
56. **Gardiner, M.M.**, D.A. Landis, C. Gratton, M. O'Neal, C. DiFonzo, G. Heimpel, E. Mueller, N. Schmidt, and J. Chacon. 2009. Landscape composition influences patterns of native and exotic coccinellid abundance. *Diversity and Distributions* 15: 554-564
57. Isaacs, R., J. Tuell, A.K. Fielder, **M.M. Gardiner**, and D.A. Landis. 2009. Maximizing arthropod-mediated ecosystem services in agricultural landscapes: the role of native plants. *Frontiers in Ecology and the Environment* 7: 196-203
58. **Gardiner, M.M.**, D.A. Landis, C. Gratton, C.D. DiFonzo, M. O'Neal, J. Chacon, M. Wayo, N. Schmidt, E. Mueller and G.E. Heimpel. 2009. Landscape diversity enhances the biological control of an introduced crop pest in the north-central U.S. *Ecological Applications* 18: 146-154
59. Landis, D.A., **M.M. Gardiner**, W. van der Werf, and S. Swinton. 2008. Increasing corn for biofuel production reduces biocontrol services in agricultural landscapes. *Proceedings of the National Academy of Sciences of the United States of America* 105: 20552-20557
60. **Gardiner M.M.** and D.A. Landis. 2007. Impact of intraguild predation by adult *Harmonia axyridis* (Coleoptera: Coccinellidae) on *Aphis glycines* biological control in cage studies. *Biological Control* 40: 386-395
61. **Gardiner M.M.** and G.L. Parsons. 2005. *Hippodamia variegata* (Goeze) (Coleoptera: Coccinellidae) detected in Michigan soybean fields. *Great Lakes Entomologist* 38: 164-169
62. **Gardiner M.M.**, J.D. Barbour, S.D. Eigenbrode, and D. Cervantez. 2005. Response of *Neoseiulus faliacis* Garmen and *Galendromus occidentalis* Nesbitt (Acari: Phytoseiidae) to *Tetranychus urticae* Koch (Acari: Tetranychidae)-damaged hop *Humulus lupulus* (L.) (Urticales: Cannabaceae). *Agricultural and Forest Entomology* 7: 245-251
63. **Gardiner M.M.**, J.D. Barbour, and J.B. Johnson. 2003. Arthropod diversity and abundance on feral and cultivated *Humulus lupulus* (L.) (Urticales: Cannabaceae) in Idaho. *Environmental Entomology* 32: 564-574
64. Duetting P.S., **M.M. Gardiner**, A.R. Polerstock, and A.A. Stehr. 2003. Biological control and invasive species management in the United States. Con Position. pp 244-245. in J.K. Tomberlin. *Biological control and invasive species management in the United States: A student debate*. *American Entomologist* 49: 238-249

#### Book Chapters

1. Landis, D.A., M.M. Gardiner, and Jean Tompkins. 2012. "Using native plant species to diversify agriculture" in Biodiversity and Pest Management. (G. Gurr ed.) Wiley Blackwell Publishing.
2. Gardiner, M.M., A.K. Fiedler, A.C. Costamagna, and D.A. Landis. 2009. "Integrating conservation biological control into IPM systems" in Textbook of Integrated Pest Management (E.B. Radcliffe and W.D. Hutchison eds). Cambridge University Press, Cambridge, UK. Pages 151-162

## Books



1. Gardiner, M.M. 2015. Good Garden Bugs: Everything you need to know about beneficial predatory insects. Quarry Books. Beverly, Massachusetts. 176 pages.

Copies sold: 6,500 (Updated December 2022)

## AWARDS, HONORS, FELLOWSHIPS

- 2023 Michigan State University Department of Entomology Distinguished Alumnus Award
- 2019 OSU College of Food, Agriculture, & Environmental Science Junior Faculty Research Award
- 2017 Recognition Award in Urban Entomology, North Central Branch of the Entomological Society of America
- 2014 Early Career Outstanding Scientist Award, International Organization for Biological Control
- 2014 Early Career Innovation Award, Entomological Society of America
- 2014 Educational Project Award for the Extension Bulletin Ohio Bee Identification Guide, Board Certified Entomologists of America
- 2012 Educational Project Award for the Extension Video Identifying and Enhancing Natural Enemies in Vegetable Crops, Board Certified Entomologists of America
- 2012 Bronze Telly Award in the Nature/Wildlife Class for the Extension Video Identifying and Enhancing Natural Enemies in Vegetable Crops
- 2012 Communications Award, State Winner and North Central Region Finalist in the Fact Sheet category for: *Natural Enemy Field Guide*, National Association of County Agricultural Agents
- 2009 Dr. Robert R. Dreisbach Award for Recognition of Outstanding Achievement in the Doctor of Philosophy Degree Program, Michigan State University
- 2007 Outstanding PhD Student Award, International Organization for Biological Control (IOBC)
- 2007 Dr. Gordon Guyer Award for Excellence in Extension Entomology, Michigan State University
- 2007 Educational Project Award for the Extension Bulletin and Website: Identifying Natural Enemies in Crops and Landscapes, Board Certified Entomologists of America
- 2007 Educational Project Award for the On-Site Workshop: Enhancing Beneficial Insects with Native Plants, Board Certified Entomologists of America
- 2006 Student Competition for the President's Prize, First Place Oral Presentation, Session Cd3 Insect Behavior and Ecology, Entomological Society of America
- 2006 Invasive Species Award, First Place Oral Presentation, Invasive Species Symposium: Challenges and Opportunities, Michigan State University
- 2005 International Graduate Student Fellowship, Pioneer Hi-Bred International
- 2005 Student Competition for the President's Prize, First Place Oral Presentation, Session Cd4 Insect Behavior and Ecology, Entomological Society of America
- 2004 C. S. Mott Pre-doctoral Fellowship in Sustainable Agriculture, Michigan State University
- 2003 H.C. Manis Award For Excellence in Entomological Research, University of Idaho
- 2002 Student Competition for the President's Prize, First Place Display Presentation, Session Cd2 Insect

Behavior and Ecology, Entomological Society of America

2002 Graduate Student Association Research Exhibition Award, Second Place Presentation in Agricultural, Natural Resources and Life Sciences, University of Idaho

2000 John L. Toeves Fellowship, University of Idaho

1998-99 James B. Angell Scholar Award, University of Michigan

## GRANT FUNDING

### **Current (\$2,749,986)**

Gardiner, M.M., M. Meuti, and J. Strange. Aligning investments in greening and mosquito management to support bee and human health in cities. USDA National Institute for Food and Agriculture Pollinator Health Research and Applications Program. \$749,994

**Gardiner, M.M.**, J. Nassauer, N. Webster, J. Strange, and D. Crowder. DISES: Addressing dynamic landscape inequalities in human well-being and bee health by greening. National Science Foundation Dynamic Coupled Natural-Human Systems Program. \$1,599,942 (8/2022-8/2027)

**Gardiner, M.M.** and C.B. Riley. From twigs to trees: Harnessing vacant land for climate resilience and biodiversity conservation. The MITRE Corporation. \$400,050 (5/2022-4/2025)

### **Past Grants and Contracts**

Basta, N. M. Rodriguez, **M.M. Gardiner**, R. Lanno. A Community-Driven Approach for Remediation of Urban Pb-Contaminated Soil to Improve Public and Ecological Health. OSU CFAES SEEDS Team Competition. \$74,412 (4/2019-9/2022)

Wickings, K., A. Dale, **M.M. Gardiner**, S.S. Atallah, J.S. Brooks, B.V. Iannone III, H. Khachatryan, J.J. Lerner, J. Lampman, D. Nowak, D. Shetlar, J.B. Unruh, and S.B. Wilson. Planning Grant: Assessing best management practices, design options & public perceptions towards a new iconic American lawn. National Institute of Food and Agriculture, Specialty Crops Research Initiative. \$49,214. (10/2019-9/2021)

Miteva, D.A., F.S. Sivakoff, R.J. Winston, and M.T. Rodriguez, and **M.M. Gardiner**. Harnessing the ecosystem services of vacant lots to promote sustainability and resilience in Cleveland, OH. OSU Sustainable and Resilient Economy Seed Grant Program. \$40,000 (2/18-1/19)

Miteva, D.A., F.S. Sivakoff, R.J. Winston, and M.T. Rodriguez, and **M.M. Gardiner**. Harnessing the ecosystem services of vacant lots to promote sustainability and resilience in Cleveland, OH. (Matching Funds) OSU STEAM Powered Project Matching Grant Program. \$15,000 (2/18-2/19)

**Gardiner, M.M.**, F.S. Sivakoff, R. Johnson, and A. Toth. *Landscape legacy and urban agriculture: Understanding the impact of heavy metal contamination on pollinator health and pollination services*. USDA NIFA Agriculture and Food Research Initiative, Pests and Beneficial Species in Agricultural Production Systems. \$469,000 4/17-3/20

Phelan, P.L. and **M.M. Gardiner**. *Biodiversity and ecosystem services in urban soils*. USDA NIFA Agriculture and Food Research Initiative, Agroecosystems Management Program. \$499,092 3/16-2/19

**Gardiner, M.M.** CAREER: *Incorporating spatial heterogeneity to study predator biodiversity-ecosystem function relationships within the urban landscape of Cleveland, OH*. National Science Foundation, Faculty Early Career Development Program, Division of Environmental Biology, Ecosystem Studies Cluster. \$909,200. 6/13-5/20 (2 year no-cost extension).

**Gardiner, M.M.** *Effects of alternative green infrastructure on arthropod communities and the ecosystem services they provide within urban systems.* The U.S. Environmental Protection Agency. Contract EP-C-12-048-C. \$155,814. 1/13-5/17.

Bergefurd, B.R., **M.M. Gardiner**, S.A. Miller. *Development of economically and environmentally sound hop production and processing guidelines to support Ohio's growing Craft brewing Industry.* Ohio Department of Agriculture. \$111,000 5/14-9/16

**Gardiner, M.M.** and B.R. Bergefurd. *Ohio hop production to enhance opportunities for farmers and brewers.* Ohio Department of Agriculture. \$145,040. 10/12-10/14.

Gleason, M., A.P. Correia, C. Haynes, A. Nair, G. Beattie, C. Bain, M. Hanna, J. Batzer, M. Duffy, D. Lewis, B. Steward, K. Rosentrater, L. Jesse, F. Nutter, M. Ngouajio, **M. Gardiner** (lead for OSU team), C. Welty, S. Miller, K. Goodell, J. Jasinski, S. Fleischer, E. Sanchez, M. Mescher, T. Coolong, R. Bessin, and M. Williams. *Shielding cucurbit crops for more resilient agroecosystems.* USDA NIFA Specialty Crops Research Initiative. \$1,550,000. 10/12-10/15.

Michel, A.P. and **M.M. Gardiner**. *Understanding native lady beetle decline in North America.* Ohio Agricultural Research and Development Center, SEEDS Grant Program. \$49,934. 10/11-10/14.

Michel, A.P., **M.M. Gardiner**, and R. Mian. *Developing insect resistance management strategies for retaining soybean aphid susceptibility to host-plant resistant soybean.* USDA North Central Region Integrated Pest Management Program. \$99,771. 2/12-2/14.

Mueller, D., L.W. Morton, A. Gassmann, M. O'Neal, L. Leandro, A. Robertson, G. Tylka, X.B. Yang, P. Esker, V. Davis, D. Malvick, B. Potter, M. Chilvers, K. Wise, D. Eastburn, **M. Gardiner**, A. Michel and K. Bradley. *Combining integrated pest management with climate change, mitigation, and adaptation in soybean-corn cropping systems.* United Soybean Board. \$263,800 1/11-1/13.

**Gardiner, M.M.** *Use of a generalized random tessellation stratified survey design (GRTS) to evaluate beneficial insect diversity, abundance, and activity within Cleveland Metroparks.* Cleveland Metroparks Minigrants Program. \$8,126. 5/11-5/12.

Gleason, M., S. Miller, C. Welty and **M.M. Gardiner**. *Optimizing row covers and perimeter trap crops for cucurbit pest management.* USDA North Central Sustainable Agriculture Research and Education. \$74,538. 1/11-1/13.

**Gardiner, M.M.**, S.P. Prajzner, and P.L. Phelan. *Pesticide contamination and honey bees: Determining the diversity and concentration of compounds found in hives located across Ohio agricultural landscapes.* Paul C. and Edna H. Warner Endowment Fund, \$4,970. 4/11-4/12.

**Gardiner, M.M.**, P.L. Phelan, S.P. Prajzner, R.N. Williams, and D. Lui. *Evaluating the pesticide contamination of pollinators and their provisions across an urban-to-rural landscape gradient.* Ohio Agricultural Research and Development Center, SEEDS Grant Program. \$99,832 5/10-5/12.

**Gardiner, M.M.**, D.A. Landis, A.P. Michel, and M.E. O'Neal. *Common buckthorn as a keystone invader in the agricultural landscape.* USDA NIFA Agriculture and Food Research Initiative, Biology of Weedy and Invasive Species in Agroecosystems Program. \$494,000 11/09-11/14.

The Pollinator Partnership, **M.M. Gardiner**, E. Nordman, and B. Bergefurd. *Evaluating and communicating the ecological and economic costs and benefits of incorporating pollinator and other beneficial insect floral resource strips into vegetable production systems.* USDA Natural Resources Conservation Service, Conservation Innovation Grant Program. \$189,000. 10/09-10/12.



**Gardiner, M.M.** 2008. *A landscape-scale approach to understanding native Coccinellidae decline*. Ohio Agricultural Research and Development Center, SEEDS Grant Program. \$49,163. 6/09-6/11.

**Gardiner, M.M.** Evaluating beneficial insect communities and their services within urban landscapes. North Central IPM Centers Mini-Grant \$9,991 2/10-2/12.

**Gardiner, M.M.** 2007. The impact of in-class clicker questions on student exam scores in an undergraduate entomology classroom. Michigan State University, Hutson Grant Program. \$1,500. 9/07-5/08.

### ***Gifts***

Gardiner, M.M. Natural products testing for vegetable pest control. Scotts Company. \$9,000. 01/13 - 03/13.

Gardiner, M.M. Natural products for vegetable pest control evaluation. Scotts Company. \$13,500. 09/11 - 01/12.

## **RESEARCH PRESENTATIONS**

### ***Keynote Presentations***

1. **Gardiner, M.M.** Native lady beetles prefer the woods to city life. International Symposium on the Ecology of Aphidophaga 15. Lleida, Spain (9/23/22)
2. **Gardiner, M.M.** Vacant land as an environmental resource for conservation and community building. Schuellein Lecture in the Biological Sciences. University of Dayton. Dayton, Ohio (4/21/22)
3. **Gardiner, M.M.** Reimagining vacant land as a resource for urban bee conservation. Symposium: The Greening of Cities – One Health Challenges. Netherlands Centre for One Health. Universiteit Utrecht. Utrecht, Netherlands (6/3/21)
4. **Gardiner, M.M.** The balancing act of urban conservation: Can vacant land support biodiversity and ecosystem services in cities. Keynote Speaker, Landscape Ecology and Nature Conservation. Entomology Congress 2019, German Society of General and Applied Entomology. Halle, Germany (3/12/19)
5. **Gardiner, M.M.** Acquiring accurate insect data via citizen science: The tale of four programs. Keynote Seminar. Illinois Butterfly Monitoring Network Annual Winter Workshop. Peggy Notebaert Nature Museum. Chicago, IL (3/11/17)

### ***Invited Presentations*** (\*Graduate Student or Postdoc Presenter, 2021-2022, 105 Career Total)

1. **Gardiner, M.M.** *Managing vacant land as habitat – what do the neighbors think?* Inspiring Insect Biodiversity Conservation through the Incorporation of Vital Habitat in Infrastructure. Entomological Society of America Annual Meeting. Vancouver, Canada. (11/13/22)
2. **Gardiner, M.M.** *Is vacant land a valuable habitat for urban bees?* Symposium: Bringing natural back into cities: using green infrastructure to support arthropod biodiversity. 6<sup>th</sup> European Congress of Conservation Biology, Biodiversity crisis in a changing world. Prague, Czech Republic. (8/24/2022)
3. ~Perry, K.I., C.A. Bahlai, T.J. Assal, and **M.M. Gardiner**. *Multiple mechanisms lead to shifting communities of native lady beetles in favor of exotic species*. North Central Branch, Entomological Society of America, Minneapolis, MN, (3/21/22)
4. Fyie, L. R., **M.M. Gardiner**, M.E. Meuti. *The effects of urban pollutants on mosquito dormancy and disease risk*. Symposium: Dormancy and Changing Environments: Characterizing Responses to Temperature and Other Stressors. Entomological Society of America Annual Meeting. Denver, CO (11/03/2021)

5. **Gardiner, M.M.** *Building your brand to land an academic job: separating what matters from the noise*. North Central Branch Student and Early Career Professionals Mixer. North Central Branch, Entomological Society of America Annual Meeting (Online Content, Accessible the week of 6/21/21)
6. **Gardiner, M.M.** *Tips for producing a compelling 10-minute research presentation*. North Central Branch Student and Early Career Professionals Mixer. North Central Branch, Entomological Society of America Annual Meeting (Online Content, Accessible the week of 6/21/21)
7. **Gardiner, M.M.** *The Cleveland Pocket Prairie Project: Assessing the value of vacant land for bees*. John Carroll University. Cleveland, OH (presented online, 2/26/2021)

**Submitted Presentations** (\*Graduate Student Presenter, \*Undergraduate Student Presenter (2021-2022, 200 Career Total)

1. \*Pham, M.A., M.R. Spring, F.S. Sivakoff, and **M.M. Gardiner**. Reclaiming vacant land to support stormwater management and bee habitat. Physiology, Biochemistry and Toxicology Student Competition, Oral Presentation. Entomological Society of America Annual Meeting. Vancouver, Canada. (11/14/22)
2. \*Fyie, L., **M.M. Gardiner**, and M. Meuti. Uncovering how artificial light at night affects the circadian clock and diapause in the northern house mosquito. Plant-Insect Ecosystems Student Competition, Oral Presentation. Entomological Society of America Annual Meeting. Vancouver, Canada. (11/14/22)
3. \*Shepard, C., K.I. Perry, S.B. Scott, F.S. Sivakoff, K. Turo, and M.M. Gardiner. Local and landscape drivers of bee taxonomic and functional trait diversity within vacant lots. Plant-Insect Ecosystems Student Competition, Oral Presentation. Entomological Society of America Annual Meeting. Vancouver, Canada. (11/14/22)
4. \*Guarnieri, L., L. Taylor, M.M. Gardiner. Does tolerance to metal pollution facilitate the dominance of the wolf spider *Pardosa milvina* in cities? Plant-Insect Ecosystems Student Competition, Oral Presentation. Entomological Society of America Annual Meeting. Vancouver, Canada. (11/14/22)
5. \*Danford, E., Y. Delgado de la Flor, N. Hoekstra, R.T. Richardson, F.S. Sivakoff, and M.M. Gardiner. Does niche partitioning explain spider richness in vacant lots? Plant-Insect Ecosystems Student Competition, Oral Presentation. Entomological Society of America Annual Meeting. Vancouver, Canada. (11/14/22)
6. \*Danford, E.E., **M.M. Gardiner**, F. S. Sivakoff, R. Richardson, N. Hoekstra. Does niche partitioning explain spider richness in vacant lots? Department of Entomology Open House Student Poster Presentation. (05/19/2022).
7. \*Shepard, C; Scott, S; Perry, KI; Turo, K; Sivakoff, FS; **Gardiner, M.M.** Urbanization as a filter of a regional bee species pool. College of Food, Agricultural and Environmental Sciences Poster Competition. Columbus, OH. (4/12/22)
8. \*Guarnieri, L.D., L. Taylor, **M.M. Gardiner**. Tolerance to lead exposure may facilitate *Pardosa milvina* exploitation of urban habitats. College of Food, Agricultural and Environmental Sciences Poster Competition. Columbus, OH. (04/11/22)
9. \*Pham, M.A., Spring, M.R., Sivakoff, F.S., **M.M. Gardiner**. Reclaiming vacant land to support urban bee habitat. College of Food, Agricultural and Environmental Sciences Poster Competition. Columbus, OH. (04/11/22)

10. \*Danford, E.E., **M.M. Gardiner**, F. S. Sivakoff, R. Richardson, N. Hoekstra. Does niche partitioning explain spider richness in vacant lots? College of Food, Agriculture, and Environmental Science Poster Competition. Columbus, OH. (04/11/2022)
11. \*Fyie, L.R., **M.M. Gardiner**, M.E. Meuti. Investigating the impacts of urbanization on mosquito dormancy. Ecological and Molecular Regulators of Diapause Symposium. Entomological Society of America North Central Branch Meeting. Minneapolis, MN. (03/22/2022)
12. \*Pham, M.A., S.B. Scott, L.R. Fyie, **M.M. Gardiner**. The potential of sustainable landscaping programs to encourage conservation in residential ecosystems. Student Competition 10 Minute Paper. Entomological Society of America Annual Meeting. Denver, CO. (11/1/21)
13. \* Scott, S.B., F.S. Sivakoff, **M.M. Gardiner**. Exposure to chromium alters urban bumble bee behavior. Student Competition 10 Minute Paper. Entomological Society of America Annual Meeting. Denver, CO. (11/1/21)
14. \* Shepard, C., S.B. Scott, K.I. Perry, K.J. Turo, F.S. Sivakoff, **M.M. Gardiner**. Urbanization as a filter of a regional bee species pool. Student Competition 10 Minute Paper. Entomological Society of America Annual Meeting. Denver, CO. (11/1/21)
15. Riley, C.B., M. Raupp, K. Fite, Y. Delgado, **M.M. Gardiner**. Woody plant biodiversity explains arthropod management interventions in residential landscapes. Section P-IE: General Ecology and Genetics. Entomological Society of America Annual Meeting. Denver, CO. (10/31/21)
16. \*Fyie, L.R., **M.M. Gardiner**, M. E. Meuti. Investigating the potential for urbanization to alter mosquito seasonal physiology. Insect Biotech Conference. Virtual (06/02/2021)

## **ADVISING**

### ***Postdoctoral Researchers***

Kayla I. Perry 2017-2020 (Current: Assistant Professor, OSU Entomology)

Leo Taylor 2018-2019 (Current: Program Manager, Office of Diversity, Equity and Inclusion, OSU)

Frances S. Sivakoff 2015-2018 (Current: Assistant Professor, OSU Marion Campus)

### ***Graduate Students***

#### **Major Advisor, Currently Enrolled**

1. Lydia Fyie (Ph.D Entomology) (co-advised with Dr. Megan Meuti)
2. Caralee Shepard (Ph.D. Entomology)
3. Lucy Guarnieri (Ph.D. Entomology)
4. Michelle Pham (Ph.D. ESGP)
5. Ellen Danford (M.S. ESGP)

#### **Major Advisor, Completed Ph.D Entomology**

1. Scott Prajzner (Ph.D.): Graduated 12/2016
2. Chris Riley (Ph.D.): Graduated 12/2019
3. Yvan A. Delgado de la Flor (Ph.D.): Graduated 5/2020
4. Katherine Turo (Ph.D.): Graduated 5/2021
5. Denisha Parker (Ph.D.): Graduated 5/2021
6. Sarah Scott (Ph.D.): Graduated 12/2022

#### **Major Advisor, Completed M.S. Entomology**

1. Chelsea Smith (M.S.): Graduated 8/2012

2. Caitlin Burkman (M.S.): Graduated 7/2013
3. Ben Phillips (M.S.): Graduated 7/2013
4. Andrea Kautz (M.S.): Graduated 7/2015
5. MaLisa Spring (M.S.): Graduated 6/2017
6. Molly Dietrich Mabin (M.S.): Graduated 6/2017
7. Emily Trejo Sypolt (M.S.): Graduated 12/2019
8. Alex Tyrpak (M.S.): Graduated 5/2020

#### **Graduate Committee Member - Completed**

Sarah Cusser, (M.S.): Graduated 2011, Ecology and Evolutionary Biology  
 Lucia Orantes (M.S.): Graduated 2011, Entomology  
 Klaire Freeman, (M.S.): Graduated 2012, Biology, Geology, and Environmental Science (Cleveland State University)  
 Lars Meyer, (M.S.): Graduated 2012, Ecology and Evolutionary Biology  
 Priyanka Yadav (M.S.): Graduated 2012, Entomology  
 Alejandro Chiriboga (Ph.D.): Graduated 2013, Entomology  
 Emily Linkous (M.S.): Graduated 2013, Entomology  
 Larry Long (M.S.): Graduated 2013, Entomology  
 Jacob Wenger (Ph.D.): Graduated 2015, Entomology  
 Kayla Perry (Ph.D.): Graduated 2016, Entomology  
 Doug Sponsler (M.S.): Graduated 2016, Entomology  
 Sarah Rose (Ph.D.): Graduated 2016, School of Environment and Natural Resources  
 Erin O'Brien (Ph.D.): Graduated 2017, Entomology  
 Jamie Erin Becker (M.S.): Graduated 2017, Biology, Bowling Green State University  
 Susan Ndiaye (M.S.): Graduated 2018, Entomology  
 Huyan Chen (Ph.D.): Graduated 2018, Entomology  
 Libby Roberson (Ph.D.): Graduated 2018 Biology, Wright State University  
 Rodney Richardson (Ph.D.): Graduated 2018, Entomology  
 David Wituszynski (PhD): Graduated 2020, Food, Agricultural and Biological Engineering  
 Caitlin Peffers (MS): Graduated 2021, Entomology  
 Harper McMinn-Sauder (PhD): Entomology

#### **Graduate Committee Member – Enrolled**

Alden Siperstein (MS): Entomology  
 James Radl (PhD): Entomology  
 Illiana Moore (MS): Entomology

#### **Masters in Plant Health Management Advisor**

Mary Griffith: Graduated 5/2015  
 Brian Kleinke: Graduated 12/2015  
 Nicole Wright 11/2016

#### **Undergraduate Students Advising**

Rachel McLaughlin, Honors Thesis Advisor, The Ohio State University, 1/17-5/18  
 Djoulissa Louis-Jean, Summer Research Opportunities Program, University of Central Florida, 6/14-8/14  
 Phoo Phi Zone, Senior Independent Study Advisor, The College of Wooster, 4/13-8/13, 6/14-8/14  
 Denisha Parker, Summer Research Opportunities Program, Rust College, 5/13-8/13  
 Brynn Lindeman, Senior Independent Study Advisor, The College of Wooster, 9/12-5/13  
 Ethan Doherty, Senior Independent Study Advisor, The College of Wooster, 5/12-5/13  
 Ethan Doherty, OARDC Research Internship Advisor, The College of Wooster, 5/11-8/11  
 Stephen Ryan, OARDC Research Internship Advisor, The College of Wooster, 5/11-8/11  
 Jesse Berkowitz, Senior Independent Study Advisor, The College of Wooster, 5/11-5/12  
 Kelsey Greathouse, Senior Independent Study Advisor, The College of Wooster, 5/11-5/12

John Roberts, Senior Independent Study Advisor, The College of Wooster, 5/11-5/12  
Bethany Hunt, Senior Thesis Advisor, Otterbein College, 6/2009-8/2009 and 6/2010-8/2010.  
Hilary Edgington, OARDC Research Internship Advisor, The College of Wooster, 4/09-5/10  
Marya Johnston-MacIntosh, Great Lakes Bioenergy DOE-REU Program Advisor, Oberlin College, 5/04-8/04  
Megan Blanksma, Senior Thesis Advisor, Aberdeen College, 5/02-7/02

## TEACHING

### Graduate Courses Taught

ENTMLGY 6410: Insect Ecology and Evolutionary (3 credit hours). (F 2012, F2014, F2016, F2020)  
ENTMLGY 7920: Presentation Skills for Scientists (2 credit hours). (S2013, S2015, S2017, S2021)  
ENTMLGY 7890: Special Topics. Developing New Methods to Study Pollinator Ecology (2 credit hours). (S2015)  
ENTMLGY 7930: Scientific Writing and Grant Proposal Development. (2 credit hours) (F2019, F2021)  
ENTMLGY 8800: Graduate Student Orientation. (1 credit hour) (F2019, F2020)  
ENVSCI 7899: Issues in Environmental Science (1 credit hour) (F2020, S2021, F2021, S2022, F2022)

## EXTENSION AND OUTREACH

### Citizen Science Programs

1. **The Buckeye Lady Beetle Blitz:** This program tracks native and exotic lady beetle populations in backyard gardens across Ohio. (2009-2014)
2. **Pollination Investigators:** A citizen science program using peppers to measure the pollination services that bees provide to backyard vegetable gardens across Ohio. (2014-2018)
3. **Dandelion Detectives:** Youth focused program aimed at measuring the distribution of weeds in Midwestern lawns and their value for insects. (2019-present)

### Extension Publications

#### *4H Curricula*

1. Turo, K.J. 2019. **Insect Adventures 1.** (<https://extensionpubs.osu.edu/insect-adventures-1/>)
2. Turo, K.J. 2019. **Insect Adventures 2.** (<https://extensionpubs.osu.edu/insect-adventures-2/>)
3. Turo, K.J. 2019. **Insect Adventures 3.** (<https://extensionpubs.osu.edu/insect-adventures-3/>)
4. Turo, K.J. 2021. **Insect Collecting Guide.** (<https://extensionpubs.osu.edu/insect-collecting-guide/>)

#### *Factsheets and Bulletins*

5. Spring, M.R. and M.M. Gardiner. 2019. **How to Identify and Enhance Ohio's Wild Bees in Your Landscape.** OSU Extension Fact Sheet Number: ENT-85-19
6. Kulhanek, A. and M.M. Gardiner. 2016. **Ohio's Natural Enemies: Funnel Weaver Spiders.** The Ohio State University Extension. OSU Extension Fact Sheet Number: ENT-76-16
7. Kautz, A. and M.M. Gardiner. 2016. **Ohio's Natural Enemies: Hover Flies.** The Ohio State University Extension. OSU Extension Fact Sheet Number: ENT-73-16

8. Griffith, M. and M.M. Gardiner. 2016. **Ohio's Natural Enemies: Jumping Spiders**. The Ohio State University Extension. OSU Extension Fact Sheet Number: ENT-74-16
9. Kautz, A. and M.M. Gardiner. 2015. **Ohio's Natural Enemies: Long Legged Flies**. The Ohio State University Extension. OSU Extension Fact Sheet Number: ENT-69-15
10. Gardiner, M.M. and M. Griffith. 2015. **Ohio's Natural Enemies: Crab Spiders**. The Ohio State University Extension. OSU Extension Fact Sheet Number: ENT-70-15
11. Gardiner, M.M. and M. Griffith. 2015. **Ohio's Natural Enemies: Mantids**. The Ohio State University Extension. OSU Extension Fact Sheet Number: ENT-67-15
12. Gardiner, M.M. and M. Griffith. 2015. **Ohio's Natural Enemies: Harvestmen**. The Ohio State University Extension. OSU Extension Fact Sheet Number: ENT-68-15
13. Griffith, M. and M.M. Gardiner. 2015. **Ohio's Natural Enemies: Lacewings**. The Ohio State University Extension. OSU Extension Fact Sheet Number: ENT-72-15
14. Prajzner, S.P. and M.M. Gardiner. 2015. **Ohio Bee Identification Guide**. The Ohio State University Extension. OSU Extension Fact Sheet Number: ENT-57-15
15. Smith, C.A., M.M. Gardiner, B. Bergefurd, and T. Harker. 2014. **Hops in Ohio: Beneficial Arthropods**. The Ohio State University Extension. OSU Extension Fact Sheet Number: ENT-42-14
16. Smith, C.A., M.M. Gardiner, B. Bergefurd, and T. Harker. 2014. **Hops in Ohio: Pests**. The Ohio State University Extension. Extension Fact Sheet Number: ENT-43-14
17. Gardiner, M.M., B.W. Phillips, C.A. Smith, C. Welty and J. Jasinski. 2011. **Great Lakes Vegetable Working Group Natural Enemy Field Guide**. The Ohio State University Extension. (<http://glvwg.ag.ohio-state.edu/documents/NaturalEnemiesFlyer-FINAL.pdf>)
18. Gardiner, M.M., S.P. Prajzner, D.A. Landis, A.P. Michel, M.E. O'Neal, and J.M. Woltz. 2011. **Buckthorn Watch: Studying the Invasive Plant Common Buckthorn**. The Ohio State University Extension, Iowa State University Extension and Michigan State University Extension (Joint Extension Bulletin). Michigan State University Bulletin E-3146.
19. Prajzner, S.P., M.M. Gardiner, D.A. Landis, A.P. Michel, M.E. O'Neal, J.M. Woltz. 2010. **Common Buckthorn (*Rhamnus cathartica*)**. The Ohio State University Extension, Iowa State University Extension and Michigan State University Extension (Joint Extension Bulletin). Michigan State University Bulletin E-3139.
20. Gardiner, M.M. 2009. **Buckeye Lady Beetle Blitz Identification Guide**. Not an official OSU factsheet, ID guide posted at: [http://ladybeetles.osu.edu/images/Lady\\_beetle\\_guide\\_5-6.pdf](http://ladybeetles.osu.edu/images/Lady_beetle_guide_5-6.pdf).
21. Gardiner, M.M., C. DiFonzo, M. Brewer and T. Noma. 2006. **Identifying Natural Enemies in Crops and Landscapes**. Michigan State University Extension Bulletin E-2949.

#### **Articles and Blog Posts**

1. Gardiner, M.M. Attracting Beneficial Insects with the Plants they Love. Guest Blog Post. Veggie Garden Tips. <http://www.veggiegardeningtips.com> (7/30/15)
2. Gardiner, M.M. 7 Surprising Facts About Lady Beetles. Guest Blog Post. Empress of Dirt. <http://empressofdirt.net> (7/8/15)

3. Gardiner, M.M. The Beneficial Insect Super 7: Important Natural Enemies on Patrol in Your Garden. Guest Blog Post. Garden Therapy: DIY Garden Projects, Recipes and Crafty Goodness. <http://gardentherapy.ca/> (6/3/15)
4. Gardiner, M.M. and S.P. Prajzner. 2010. Educational Update: Ohio's Beneficial Bugs. *The Buckeye Arborist* 11(4): 15-18.

#### **Outreach and Extension Presentations (Webinars and You Tube, 2021-2022)**

1. Gardiner, M.M. Vacant lots as bee habitat. Hosted by The New York Botanical Garden (10/3/22) 20 attendees.
2. Gardiner, M.M. Pocket prairies in the city. Plan It Native Hybrid Conference. Hosted by Deep Roots SKC, Kansas City, MO (10/3/22)
3. Gardiner, M.M. The value of vacant land for bees. Hosted by the OSU Ashtabula County Extension, Northeast Ohio Pollinator Symposium Winter Series (2/23/22) 800 attendees.
4. Gardiner, M.M. Why weeds matter for urban bees. Urban Greening Short Course. Hosted by The Ohio State University Bee Lab (2/9/22)
5. Gardiner, M.M. Beneficial insect biodiversity: What is it and why it matters. Tending Nature: Native Plants and Every Gardener's Role in Fostering Biodiversity (6-Session Webinar Series). Hosted by The Ohio State University Bee Lab (1/7/22)

Available on You Tube (6,969 Views: <https://www.youtube.com/watch?v=ZaxMLk05gDs>)

6. Gardiner, M.M. Vacant land as urban bee habitat. Pollinators in the City Speaker Series. Hosted by The Ohio State University Bee Lab (12/1/21)

Available on You Tube (427 Views: [https://www.youtube.com/watch?v=S6Jg1t\\_zAtk](https://www.youtube.com/watch?v=S6Jg1t_zAtk))

7. Gardiner, M.M. Vacant land: an undervalued resource for urban bees. Hosted by the Ohio State Beekeepers Association (11/8/21)

Available on You Tube (167 Views: [https://www.youtube.com/results?search\\_query=Mary+Gardiner](https://www.youtube.com/results?search_query=Mary+Gardiner))

8. Gardiner, M.M. A growing conservation focus for shirking cities: Vacant land as bee habitat. Hosted by Connecticut Beekeepers Association (10/26/21)
9. Gardiner, M.M. Contributions of community science to entomology: Benefits for people and nature. Bee Short course for Community Scientists Webinar Series. Hosted by The Ohio State University Bee Lab (10/15/21)

Available on You Tube (516 Views: <https://www.youtube.com/watch?v=xgLn1hOSv9E>)

10. Gardiner, M.M. Pollinators in urban centers: Vacant land habitats. Hosted by Mahoning County Master Gardener Volunteer Program (6/15/2021)
11. Gardiner, M.M. The Dandelion Detectives Program. Hosted by Queen City Pollinator Project (Based in Cincinnati, OH) (5/24/2021)
12. Gardiner, M.M. The Dandelion Detectives Program. Hosted by The Ohio State University Bee Lab (5/9/2021)
13. Gardiner, M.M. The Dandelion Detectives Program. Hosted by The Ohio State University Bee Lab (5/5/2021)

14. Gardiner, M.M. Good Garden Bugs: Everything you need to know about beneficial insects. Welcome Spring! Authors Speaker Series. Hosted by The Ohio State University Bee Lab (3/26/2021)  
  
Available on You Tube (894 Views: <https://www.youtube.com/watch?v=o8efov1TOQQ>)
15. Gardiner, M.M. Update on the Status of Native Lady Beetles in Ohio. Hosted by the Ohio State University Master Gardener Volunteer Program (3/15/21)
16. Gardiner, M.M. Beyond bees: Supporting other good garden bugs at home. The Ohio State University Organic Production Series. Hosted by Chadwick Arboretum and Learning Garden (3/3/2021)  
  
Available on You Tube (63 Views: [https://www.youtube.com/watch?v=S6Jg1t\\_zAtk](https://www.youtube.com/watch?v=S6Jg1t_zAtk))

#### **Outreach and Extension Presentations (In Person Events, Last 2 years (83 career total))**

1. Gardiner, M.M. Vacant lots as bee habitat. Trumbull County Master Gardener Volunteer Program (3/29/22)
2. Gardiner, M.M. Beneficial insect biodiversity: What is it and why it matters. Trumbull County Ohio Volunteer Certified Naturalists Program (3/29/22)
3. Gardiner, M.M. Vacant lots as bee habitat. Trumbull County Ohio Volunteer Certified Naturalists Program (3/29/22)

#### **Workshops and Field Days Organized (Last 5 of 43 total)**

1. From Blight to Bright: Reimagining vacant land to support people and Biodiversity in Cities. Tour of vacant land greening projects followed by presentation series organized by OSU Department of Entomology. Cleveland Museum of Natural History. Cleveland, OH (8/19/19) (60 participants)
2. A Bug's Life in the City: The Often-Unseen Biodiversity that Surrounds us and Why it Matters. Department of Entomology Full Day Program. Columbus, OH (4/28/18) (100 participants)
3. Ohio Hops & Malting Barley Conference and Trade Show. Piketon, OH (2/24 and 2/25/17) (300 participants)
4. Ohio Hops & Malting Barley Conference and Trade Show. Wooster, OH (2/24 and 2/25/16) (350 participants)
5. Hops First Friday Tour. Wooster, OH (10/2/2015) (10 participants)

#### **PROFESSIONAL SERVICE**

##### **Leadership in Professional Organizations**

Entomological Society of America North Central Branch President (2021-2022)  
 Entomological Society of America North Central Branch President-Elect (2020-2021)  
 International Organization for Biological Control Member Vice President (2017-2018)  
 International Organization for Biological Control Member at Large (2014-2017)  
 Entomological Society of America North Central Branch Local Arrangements Chair (2016)  
 Chair, NCERA-220 Biocontrol of Arthropods and Weeds (2012)  
 Secretary, NCERA-220 Biocontrol of Arthropods and Weeds (2011)  
 State Representative, NCERA-220 Biocontrol of Arthropods and Weeds (2010-2016)  
 Great Lakes Vegetable Working Group (2009-2018, lead of team project in 2011)

##### **Editorships**



Subject Editor, Environmental Entomology (2013-2015)  
Associate Editor, Environmental Entomology (2010-2013)

### **Scientific Conferences and Symposia Organized**

Insect-mediated ecosystem services: Enhancing interactions with our beneficial partners. (co-organized with Cesar Rodriguez-Saona) P-IE Section Symposium. Annual Meeting of the Entomological Society of America. Minneapolis, MN (2015)

IPM in a changing urban landscape: Sustainable farming in cities. 7<sup>th</sup> Annual IPM Symposium, IPM on the World Stage. Salt Lake City, UT (2015)

Shut your trap: measuring biocontrol services (co-organized with Matt Grieshop). North Central Branch Meeting of the Entomological Society of America. Rapid City, SD (2013)

Blending some “new school” approaches to pest management while revisiting some key vegetable pests “old school” style (co-organized with Jim Jasinski). North Central Branch Meeting of the Entomological Society of America. Lincoln, NE (2012)

Advancing the quality and applications of volunteer-collected data using technology and social engineering (co-organized with Brian McCornack). North Central Branch Meeting of the Entomological Society of America. Lincoln, NE (2012)

Insect research on the urban frontier: biocontrol and pollination services in city landscapes (co-organized with D. Weber). Entomological Society of America Annual Meeting. Reno, NV (2011)

Recent advances in conservation biological control (co-organized with G. Gurr). International Symposium on the Biological Control of Arthropods. Christchurch, NZ (2009)

Linking insects, ecosystem function, and ecosystem services (co-organized with A. Fiedler and N. Schellhorn). Entomological Society of America Annual Meeting. Reno, NV (2008)

Soybean aphid in the north central US: implementing IPM at the landscape scale (co-organized with C. DiFonzo). Entomological Society of America Annual Meeting. San Diego, CA (2007)

### **External Review Panels**

Department of Biology and Neuroscience, Bowling Green State University (2021)

### **University and College Committees**

Co-Director and Graduate Studies Committee Chair, Environmental Sciences Graduate Program, (2020-present)  
CFAES Fellowship Committee (2021)

SEEDS Grant Panel Departmental Representative (2017-2019)

Representative, Ag. Faculty Council, College of Food, Agriculture and Environmental Sciences (2014-2018)

### **Departmental Committees**

Chair, OSU Entomology Graduate Studies Committee (2018-2022)

Chair, OSU Entomology Seminar Committee (2017-2018)

Chair, OSU Entomology Awards and Scholarships Committee (2014-2017)

Chair, OSU Entomology Social Committee (2011-2015)

Chair, OSU Entomology Website Committee (2010-2011)

Member, Promotion and Tenure Committee (2014-present)

Member, Social Committee (2020-Present)

Member, Pollinatorium Committee (2011-2012)

Member, OSU Entomology Graduate Studies Committee (2010-2018)

Member, OSU Entomology Seminar Committee (2010-2017)

Member, OARDC Beautification Committee (following tornado) (2010-2011)

Member, Graduate Handbook Committee, Michigan State University (2005)

**Memberships and Professional Affiliations**

Ecological Society of America: 2008-present

International Organization for Biological Control of Noxious Animals and Plants (IOBC): 2007-present

Entomological Society of America: 1999-present

Phi Sigma (Biological Sciences Honor Society): 2001-present

Xi Sigma Pi (Forestry Honor Society): 1999-present