

# Mary Margaret Gardiner

## EDUCATION

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

## PROFESSIONAL APPOINTMENTS

<b>Timeframe</b>	<b>Rank</b>	<b>Unit and Location</b>
2021-Present	Co-Director	Environmental Sciences Graduate Program, The Ohio State University, Columbus, Ohio
2019-Present	Professor	Department of Entomology, The Ohio State University, Columbus, Ohio
2014-2019	Associate Professor	Department of Entomology, The Ohio State University, Columbus, Ohio
2009-2014	Assistant Professor	Department of Entomology, The Ohio State University, Columbus, Ohio
2008	Visiting Research Scientist	Great Lakes Bioenergy Research Center, Michigan State University, East Lansing, Michigan
2002-2004	Research Support Scientist	Department of Plant Soil and Entomological Sciences, University of Idaho, Parma Research and Extension Center, Parma, Idaho

**Adjunct Appointments:** Pontifica Universidad Catholica de Chile, Cleveland State University, Wright State University

## PUBLICATIONS (73 Peer-Reviewed Publications, H Index: 30, \*graduate student, ~postdoc, +undergraduate)

1. \*Pham, M.A., \*K.J. Turo, \*C.A. Shepard, +J. Copley and **M.M. Gardiner**. *in review*. Does creating native wildflower pocket prairies aid bee conservation in a legacy city? *Ecological Entomology*.
2. \*Danford, E., \*Y. Delgado de la flor, R. Richardson, F. Sivakoff, and **M.M. Gardiner**. *in review*. Landscape context and habitat biomass influence spider predator-prey interactions within vacant lots. *Urban Ecosystems*.
3. \*Guarnieri, L., ~L. Taylor, P.L. Phelan, and **M.M. Gardiner**. *in press*. Body size of urban and rural populations of *Pardosa milvina* spiders is not influenced by lifelong exposure to lead pollution. *Insect Systematics and Diversity*
4. Perry, K.I., C. Bahlai, T.J. Assal, \*C.B. Riley, \*K.J. Turo, ~L. Taylor, \*J. Radl, \*YA Delgado de la flor and **M.M. Gardiner**. *in press*. Landscape change and alien invasions drive shifts in native lady beetle communities over a century. *Ecological Applications*
5. \*Lake, L.M., \*S.B. Scott, D.B. Hood, \*M. Kellis, **M.M. Gardiner**, and N. Basta. 2024. Risk management approach using soil blends to remediation of lead contaminated urban soil and protection of public health. *Soil and Environmental Health 2*: 100102 <https://doi.org/10.1016/j.seh.2024.100102>
6. \*Delgado de la flor, Y., K.I. Perry, +L. Collis, P.L. Phelan, and **M.M. Gardiner**. 2024. Biotic and abiotic factors drive multi-trophic interactions among spiders at different spatial scales in urban greenspaces. *Journal of Urban Ecology 10*: juae008 <https://doi.org/10.1093/jue/juae008>
7. Sivakoff, F.S., +R. McLaughlin, and **M.M. Gardiner**. 2024. Cadmium soil contamination alters plant-pollinator interactions. *Environmental Pollution 356*: 124316 <https://doi.org/10.1016/j.envpol.2024.124316>

8. \*Scott, S.B. R. Lanno, and **M.M. Gardiner**. 2024. Acute toxicity and bioaccumulation of common urban metals in *Bombus impatiens* life stages. *Science of the Total Environment* 915: 169997 <https://doi.org/10.1016/j.scitotenv.2024.169997>
9. \*Pham, M., \*M. Spring, F.S. Sivakoff, and **M.M. Gardiner**. 2023. Reclaiming urban vacant land to manage stormwater and support insect habitat. *Urban Ecosystems*: 26: 1813–1827 <https://doi.org/10.1007/s11252-023-01418-9>
10. \*Fyie, L.R., **M.M. Gardiner**, and M. Meuti. 2023. Potential for urban warming to postpone overwintering dormancy of temperate mosquitoes. *Journal of Thermal Biology* 115: 103594 <https://doi.org/10.1016/j.jtherbio.2023.103594>
11. \*Scott, S.B., F.S. Sivakoff, M. Meuti, and **M.M. Gardiner**. 2023. Metals could challenge pollinator conservation in legacy cities. *Journal of Insect Conservation* 27: 361-375 <https://doi.org/10.1007/s10841-023-00474-y>
12. ~Perry, K.I., \*C.B. Riley, F. Fan, \*J. Radl, D.A. Herms and **M.M. Gardiner**. 2022. The value of hybrid and non-native ash for the conservation of ash specialists is limited following late stages of emerald ash borer invasion. *Agricultural and Forest Entomology* 24: 355-370 <https://doi.org/10.1111/afe.12499>
13. \*Pham, M.A., \*S.B. Scott, \*L.R. Fyie, and **M.M. Gardiner**. 2022. Sustainable landscaping programs in the United States and their potential to encourage conservation and support ecosystem services in residential landscapes. *Urban Ecosystems* 24: 1481-1490. <https://doi.org/10.1007/s11252-022-01241-8>
14. \*Scott, S.B., F.S. Sivakoff, and **M.M. Gardiner**. 2022. Exposure to urban heavy metal contamination diminishes bumble bee colony growth. *Urban Ecosystems* 25: 989-997. <https://doi.org/10.1007/s11252-022-01206-x>
15. \*Riley, C.B., M. Raupp, K. Fite, and **M.M. Gardiner**. 2022. Woody plant biodiversity explains arthropod pest management interventions in residential landscapes. *Urban Forestry and Urban Greening* 67: 127439. <https://doi.org/10.1016/j.ufug.2021.127439>
16. **Gardiner, M.M.** and H.E. Roy. The role of community science in Entomology. 2022. *Annual Review of Entomology* 67: 437-456. <https://doi.org/10.1146/annurev-ento-072121-075258>
17. \*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. <https://doi.org/10.1111/cobi.13753>
18. **Gardiner, M.M.**, K.I. Perry, \*C.B. Riley, \*K.J. Turo, \*Y. Delgado de la flor and 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. <https://doi.org/10.1002/ece3.7229>
19. \*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 <https://doi.org/10.1016/j.jinsphys.2021.104194>
20. **Gardiner, M.M.**, \*Y.A. Delgado de la flor, \*D.M. Parker 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. <https://doi.org/10.1002/eap.2282>
21. ~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*. <https://doi.org/10.1007/s11252-020-01069-0>
22. \*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*. <https://doi.org/10.1111/1365-2664.13773>

23. \*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*. <https://doi.org/10.1007/s11252-020-01000-7>
24. \*Turo K.J. and **M.M. Gardiner**. 2020. The balancing act of urban conservation. *Nature Communications* 11: 3773. <https://doi.org/10.1038/s41467-020-17539-0>
25. ~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. <https://doi.org/10.1002/eap.2191>
26. ~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. <https://doi.org/10.1111/1365-2664.13651>
27. \*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 <https://doi.org/10.1111/1365-2664.13636>
28. \*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 <https://doi.org/10.1371/journal.pone.0228499>
29. \*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 <https://doi.org/10.1016/j.agee.2019.106689>
30. \*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 <https://doi.org/10.1007/s11252-019-00857-7>
31. Grez, A.A., T. Zaviezo, **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 <https://doi.org/10.1016/j.ufug.2019.01.002>
32. \*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 <https://doi.org/10.1007/s10841-018-0116-2>
33. \*Turo K.J. and **M.M. Gardiner**. 2019. From potential to practical: conserving bees in urban public green spaces. *Frontiers in Ecology and the Environment* 17: 167-175 <https://doi.org/10.1002/fee.2015>
34. \*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 <https://doi.org/10.3390/su10072139>
35. \*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 <https://peerj.com/articles/5126/?td=tw>
36. ~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 <https://doi.org/10.3390/su10061926>

37. **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 <https://doi.org/10.1002/fee.1778>
38. \*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 <https://doi.org/10.5334/cstp.99>
39. \*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 <https://doi.org/10.1016/j.ufug.2017.01.004>
40. \*Delgado, Y.A., \*C.E. Burkman, T.K. Eldridge and **M.M. Gardiner**. 2017. Patch and landscape-scale variables influence the taxonomic and functional composition of beetles in urban greenspaces. *Ecosphere* 8: e02007 <https://doi.org/10.1002/ecs2.2007>
41. ~Sivakoff, F.S. and **M.M. Gardiner**. 2017. Soil lead contamination decreases bee flower visit duration at sunflowers. *Urban Ecosystems* 20: 1221-1228 DOI 10.1007/s11252-017-0674-1
42. **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 <https://doi.org/10.1016/j.cois.2017.04.002>
43. **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 <https://doi.org/10.1016/j.cois.2017.03.007>
44. \*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
45. \*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 <https://doi.org/10.1016/j.agee.2016.01.039>
46. \*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 <https://doi.org/10.1016/j.jenvman.2016.06.025>
47. \*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
48. ~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 DOI 10.1007/s11252-015-0476-2
49. 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 DOI 10.1007/s10530-016-1077-6

50. \*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 <https://doi.org/10.1016/j.biocontrol.2015.11.004>
51. \*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 <https://doi.org/10.1016/j.biocontrol.2015.10.001>
52. \*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 <https://doi.org/10.22543/0090-0222.1020>
53. \*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 DOI: 10.7717/peerj.1342
54. \*Burkman, C.E. and **M.M. Gardiner**. 2015. Spider assemblages within greenspaces of a deindustrialized urban landscape. *Urban Ecosystems* Vol 18: 793-818 DOI 10.1007/s11252-014-0430-8
55. 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
56. **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 DOI 10.1007/s11252-013-0303-6
57. \*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 <https://doi.org/10.1016/j.biocontrol.2014.02.015>
58. \*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 <https://doi.org/10.1016/j.biocontrol.2014.02.003>
59. \*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 <https://doi.org/10.1371/journal.pone.0084448>
60. **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 <https://doi.org/10.1603/EN12275>
61. \*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 <https://doi.org/10.1016/j.biocontrol.2013.07.019>
62. **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 <https://doi.org/10.1890/110185>
63. 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
64. **Gardiner, M.M.**, M.E. O'Neal, and D.A. Landis. 2011. Intraguild predation and native lady beetle decline. *PLoS ONE*. E23576 <http://dx.doi.org/10.1371/journal.pone.0023576>

65. **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 <https://doi.org/10.1016/j.biocontrol.2010.06.008>
66. **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 DOI 10.1007/s12155-009-9065-7
67. **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
68. 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
69. **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
70. 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
71. **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
72. **Gardiner M.M.** and G.L. Parsons. 2005. *Hippodamia variegata* (Goeze) (Coleoptera: Coccinellidae) detected in Michigan soybean fields. *Great Lakes Entomologist* 38: 164-169
73. **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
74. **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
75. 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

Gardiner, M.M. 2015. *Good Garden Bugs: Everything you need to know about beneficial predatory insects*. Quarry Books. Beverly, Massachusetts. 176 pages. Lifetime sales: 5,817 copies



## AWARDS, HONORS, FELLOWSHIPS

- 2024 OSU College of Food, Agriculture, & Environmental Science Senior Faculty Research Award
- 2023 Nan-Yao Su Award for Innovation and Creativity in Entomology, Entomological Society of America
- 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. Toevs 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 (2/2023-1/2027)

**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 (\$5,362,289)**

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.

## RESEARCH PRESENTATIONS

### *Keynote*

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 (2022-2024 shown, total of 111 invited presentations)*

1. **Gardiner, M.M.** *Lessons learned managing vacant land as pollinator habitat. Symposium: Steering urban agriculture as nature-based solutions to advance social-ecological resilience and sustainability.* Ecological Society of America Annual Meeting. Long Beach, CA (8/8/24)
2. **Gardiner, M.M.** *Vacant land as an environmental resource for conservation and community building.* Wayne State University, Department of Biology and Neuroscience. Detroit, MI (2/12/24)
3. **Gardiner, M.M.** *Vacant land as an environmental resource – socioenvironmental challenges and opportunities.* Symposium: Insect Conservation in Cities: Opportunities for Aligning Entomology, People, and Policy. Entomological Society of America Annual Meeting. National Harbor, MD (11/7/23)
4. **Gardiner, M.M.** *Vacant land as an environmental resource for conservation and community building.* Michigan State University, Department of Entomology, Distinguished Alumnus Award Lecture. East Lansing, MI (4/27/23)
5. **Gardiner, M.M.** *The role of community science in Entomology.* Michigan State University Department of Entomology Student Invited Seminar. East Lansing, MI (4/27/23)
6. **Gardiner, M.M.** *Vacant land as an environmental resource for conservation and community building.* University of Florida, Department of Entomology, Student Invited Seminar Speaker. Gainesville, FL (2/15/23)
7. **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)

8. **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. (8/24/22)
9. ~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)

**Submitted (2023-2024 listed, total of 218 presentations, \*Graduate Student, †Undergraduate Student)**

1. \*Fyie, L., M. Fiorta, **M. Gardiner**, and M. Meuti. *Light pollution interferes with seasonal dormancy in temperate mosquitoes.* Bugs in the City: Urban Insect Ecophysiology. Physiology, Neurobiology, and Molecular Biology. International Congress of Entomology. Kyoto, JP (08/28/24)
2. \*Wright, E., C.B. Riley, E. Danford, M.M. Gardiner. 2024. *Reforesting a legacy city: impacts of post-planting care on tree mortality.* International Society of Arboriculture Annual International Conference. Atlanta, GA, (8/13/24)
3. †Copen, A., L. Guarnieri, M. Pham, M. and **M.M. Gardiner.** *Estimated moth host capacity in urban conservation habitats.* Undergraduate Research Poster. CFAES Undergraduate Research Forum. Columbus, OH (4/9/2026)
4. \*Guarnieri L.D. and M.M. **Gardiner.** *Moth conservation depends on the preservation of large habitats.* Ohio State University, College of Food, Agricultural, and Environmental Sciences Graduate Poster Competition. Columbus, OH. (4/9/2026)
5. \*Pham, M.A., Turo, K.J., Shepard, C.A., Perry, K.I., Copley, J., and **M.M. Gardiner** (2024). *Does establishing native wildflowers on vacant land aid bee conservation in a legacy city?* Entomological Society of America North-Central Branch meeting, Plant-Insect Ecosystems section. Fort Collins, CO (3/25/24)
6. \*Guarnieri L.D. and **M.M. Gardiner.** *Moth conservation depends on the preservation of large habitats.* Student Poster Competition. Entomological Society of America North Central Branch Meeting. Fort Collins, CO. (3/25/24)
7. †Narayanan, D., H. Dehus, E. Danford, M.A. Pham., M. Meuti and **M.M. Gardiner.** *Does mosquito management harm beneficial insects in residential landscapes?* Undergraduate 10-Minute Paper competition. Entomological Society of America North Central Branch Meeting. Fort Collins, CO (3/25/24)
8. \*Danford, E. and **M.M. Gardiner.** *Does the luxury effect hypothesis predict insect distributions within urban greenspaces?* Student 10-Minute Paper competition. Plant-Insect Ecosystems. Entomological Society of America Annual Meeting. National Harbor, MD (11/6/23)
9. \*Fyie, L., M. Fiorta, **M.M. Gardiner**, and M. Meuti. *Does light pollution interfere with seasonal responses in mosquitoes?* Student 10-Minute Paper competition. Plant-Insect Ecosystems. Entomological Society of America Annual Meeting. National Harbor, MD (11/6/23)
10. \*Pham, M.A. and **M.M. Gardiner.** *Does the creation of pocket prairies on vacant lots improve bee habitat in a legacy city?* Student 10-Minute Paper competition. Plant-Insect Ecosystems. Entomological Society of America Annual Meeting. National Harbor, MD (11/6/23)
11. \*Guarnieri, L. and **M.M. Gardiner.** *Investigating the value of urban greening for moth conservation.* Student 10-Minute Paper competition. Plant-Insect Ecosystems. Entomological Society of America Annual Meeting. National Harbor, MD (11/6/23)
12. \*Shepard, C., M. Rodriguez, and **M.M. Gardiner.** *Demonstrating intention: Uncovering management requirements for neighbors to accept vacant lots as a conservation space for bees.* Student 10-Minute Paper

competition. Formal and Informal Teaching. Entomological Society of America Annual Meeting. National Harbor, MD (11/6/23)

13. \*Pham, M.A., Turo, K.J., Shepard, C.A., Perry, K.I., Copley, J., **M.M. Gardiner**. *Does establishing native wildflowers on vacant land aid bee conservation in a legacy city?* Ecological Society of America Annual Meeting. Portland, OR. (8/10/23)
14. \*Pham, M.A., Turo, K.J., Shepard, C.A., Perry, K.I., Copley, J., **M.M. Gardiner**. *Does establishing native wildflowers on vacant land aid bee conservation in a legacy city?* International Conference on Pollinator Health, Biology, and Policy, State College, PA. (6/5/23)
15. \*Pham, M.A., Turo, K.J., Shepard, C.A., Perry, K.I., Copley, J., **M.M. Gardiner**. *Does establishing native wildflowers on vacant land aid bee conservation in a legacy city?* Ohio State University, College of Food, Agricultural, and Environmental Sciences Graduate Poster Competition, Columbus, OH. (3/28/23)
16. \*Pham, M.A., Turo, K.J., Shepard, C.A., Perry, K.I., Copley, J., **M.M. Gardiner**. *Does establishing native wildflowers on vacant land aid bee conservation in a legacy city?* Ecological Society of America Annual Meeting. Portland, OR. (8/10/23)
17. \*Pham, M.A., Turo, K.J., Shepard, C.A., Perry, K.I., Copley, J., **M.M. Gardiner**. *Does establishing native wildflowers on vacant land aid bee conservation in a legacy city?* International Conference on Pollinator Health, Biology, and Policy, State College, PA. (6/5/23)
18. \*Pham, M.A., Turo, K.J., Shepard, C.A., Perry, K.I., Copley, J., **M.M. Gardiner**. *Does establishing native wildflowers on vacant land aid bee conservation in a legacy city?* Ohio State University, College of Food, Agricultural, and Environmental Sciences Graduate Poster Competition, Columbus, OH. (3/28/23)

## ADVISING

### *Postdoctoral Researchers*

Kayla I. Perry 2017-2020 (Current: Assistant Professor, CFAES Entomology Ohio State University)  
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. Caralee Shepard (Ph.D. Entomology)
2. Lucy Guarnieri (Ph.D. Entomology)
3. Michelle Pham (Ph.D. ESGP)
4. Erika Wright (Ph.D. ESGP)

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

1. **Scott Prajzner** (Ph.D. Entomology): Graduated 12/2016, Current position: Self Employed
2. **Chris Riley** (Ph.D. Entomology): Graduated 12/2019, Current position: Mid-Atlantic Research Scientist and Technical Support Specialist, Bartlett Tree Experts
3. **Yvan A. Delgado de la Flor** (Ph.D. Entomology): Graduated 5/2020, Current Position: Environmental Scientist, CA Department of Pesticide Regulation
4. **Katherine Turo** (Ph.D. Entomology): Graduated 5/2021, Current Position: USDA Postdoctoral Fellow, Rutgers University
5. **Denisha Parker** (Ph.D. Entomology): Graduated 5/2021, Student Research Development Officer, Prairie View A&M University

6. **Sarah Scott** (Ph.D. Entomology): Graduated 12/2022, Current Position: Royal Society Newton International Research Fellow, Cambridge University
7. **Lydia Fyie** (Ph.D Entomology, co-advised with Dr. Megan Meuti): Graduated 5/2024, Current Position: Postdoctoral Researcher, University of Maine

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

1. **Chelsea Smith** (M.S. Entomology): Graduated 8/2012, Current Position: Manager, Four Peaks Greenhouse
2. **Caitlin Burkman** (M.S. Entomology): Graduated 7/2013, Current Position: Pesticide Enforcement and Compliance Assurance Unit Manager, Michigan Department of Agriculture and Rural Development
3. **Ben Phillips** (M.S. Entomology): Graduated 7/2013, Current Position: Vegetable Crops Educator, Michigan State University
4. **Andrea Kautz** (M.S. Entomology): Graduated 7/2015, Current Position: Research Entomologist, Carnegie Museum of Natural History
5. **MaLisa Spring** (M.S. Entomology): Graduated 6/2017, Current Position: State Coordinator, Ohio Dragonfly Survey
6. **Molly Dietrich Mabin** (M.S. Entomology): Graduated 6/2017, Current Position: Technician, Vegetable Crop Research Unit, Agricultural Research Service (USDA)
7. **Emily Trejo Sypolt** (M.S. Entomology): Graduated 12/2019, Senior Biologist, NV5
8. **Alex Tyrpak** (M.S. Entomology): Graduated 5/2020, R & D Technition III, EnviroFlight
9. **Ellen Danford** (M.S. Environmental Sciences Graduate Program): Graduated 12/2023, Current Position: Fulbright Fellow, Pontifica Universidad Catholica de Chile

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

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

#### **Graduate Committee Member – Completed (Last 5 years shown, total of 24 students)**

1. David Wituszynski (PhD): Graduated 2020, Food, Agricultural and Biological Engineering
2. Caitlin Peffers (MS): Graduated 2021, Entomology
3. Harper McMinn-Sauder Graduated 2022, (PhD): Entomology
4. Illiana Moore (MS): Graduated 2023, Entomology
5. Alden Siperstein (MS): Graduated 2023, Entomology
6. Katherine Manning (PhD): Graduated 2023, Biology, Kent State University

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

1. Amber Stiller (MS): Entomology
2. Aaron Tayal (MS): Entomology
3. Hannah Dehus (MS): Environmental Sciences Graduate Program

#### **Undergraduate Students Research Adviser (Current students listed, total of 18 students advised)**

1. Paul Osborn, Entomology, Research with Distinction, The Ohio State University, 9/24-present
2. Addison Copen, Entomology, Research with Distinction, The Ohio State University, 1/24-present
3. David Narayanan, EEOB, Research with Distinction, The Ohio State University, 1/23-present

## **TEACHING**

### **Degree Program Development**

OSU Environmental Science Graduate Program and Pontifica Universidad Catholica de Chile Dual Degree Program

I am leading the development of this dual degree in Environmental Sciences and Agricultural Science. This effort began in 2022, and we are aiming to launch the program beginning in 2025.

## Curriculum Development

Redesigned the graduate curriculum for the Environmental Science Graduate Program. This curriculum was approved by The Ohio State University Office of Academic Affairs in 3/2024 and was launched in 9/2024 (<https://esgp.osu.edu/current-students/specializations>).

## 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, S2023)

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, F2023)

ENTMLGY 8800: Graduate Student Orientation. (1 credit hour) (F2019, F2020)

ENVSCI 7899: Issues in Environmental Science (1 credit hour) (F2020, S2021, F2021, S2022, F2022, S2023, F2023, S2024, F2024)

## Guest Lectures: 16 given

## 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. (2019-2022)

### Extension Publications

#### *4H Curricula*

1. Turo, K.J. et al. 2019. **Insect Adventures 1.** (<https://extensionpubs.osu.edu/insect-adventures-1/>)
2. Turo, K.J. et al. 2019. **Insect Adventures 2.** (<https://extensionpubs.osu.edu/insect-adventures-2/>)
3. Turo, K.J. et al. 2019. **Insect Adventures 3.** (<https://extensionpubs.osu.edu/insect-adventures-3/>)
4. Turo, K.J. et al. 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.

### ***Videos***

**Identifying and Enhancing Natural Enemies in Vegetable Crops.** 2011. Produced by C. Dicus, The Ohio State University Communications and Technology (<http://www.youtube.com/user/OARDC>) (1,670 views)

**Buckthorn Watch.** 2011. Produced by C. Dicus, The Ohio State University Communications and Technology (<http://www.youtube.com/user/OARDC>) (225 views)

**The Buckeye Lady Beetle Blitz Program Video.** 2009. Produced by C. Dicus, The Ohio State University Communications and Technology (<http://www.youtube.com/user/OARDC>) (2,088 views)

### ***Smart Phone Applications***

Jasinski, J., C. Welty and M.M. Gardiner. GoodBugs+ for Apple iPhone. Completed, 1/13

### **Outreach and Extension Presentations**

#### ***Webinars and You Tube (Last 5 years listed, total of 23)***

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 (9.6K 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 (642 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 (198 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 (668 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 (1.2K 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 (127 Views: [https://www.youtube.com/watch?v=S6Jg1t\\_zAtk](https://www.youtube.com/watch?v=S6Jg1t_zAtk))
17. Gardiner, M.M. Conservation in the city: Vacant land as bee habitat. Hosted by University of Minnesota 2020 Pollinator Summit Series. (9/15/2020)
18. Gardiner, M.M. Beyond Bees: Supporting other good garden bugs at home. Hosted by The American Electric Power Company (7/15/2020)
19. Gardiner, M.M. The Dandelion Detectives Program. Hosted by The Ohio State University Bee Lab (6/24/2020)
20. Gardiner, M.M. Gardening for pollinators. Pollinator Week Webinar Series American Electric Power Company (6/23/2020)
21. Gardiner, M.M. Rights-of-Way: A potential conservation resource. Hosted by the Electric Power Research Institute (9/5/2019)

**In-Person Presentations (Last 5 years listed, total of 83 presentations)**

1. Gardiner, M.M. *Establishing an urban forest within lower income parklands*. Hamilton County Extension. Hamilton, OH (4/2/24)
2. Gardiner, M.M. *The benefits of vacant land for conservation and ecosystem services*. Texas Tree Conference. International Society of Arboriculture. Waco, TX (9/20/23)
3. Gardiner, M.M. *Writing successful grant proposals*. Texas Tree Conference. International Society of Arboriculture. Waco, TX (9/22/23)
4. Gardiner, M.M. *Role of community science in Entomology*. GardenWise, Penn State Extension, York, PA (3/11/23)
5. Gardiner, M.M. *Insect biodiversity: What is it and why does it matter?* GardenWise, Penn State Extension, York, PA (3/11/23)
6. Gardiner, M.M. *Vacant lots as bee habitat*. Trumbull County Master Gardener Volunteer Program (3/29/22)
7. Gardiner, M.M. *Beneficial insect biodiversity: What is it and why it matters*. Trumbull County Ohio Volunteer Certified Naturalists Program (3/29/22)
8. Gardiner, M.M. *Vacant lots as bee habitat*. Trumbull County Ohio Volunteer Certified Naturalists Program (3/29/22)

9. Gardiner, M.M. *The balancing act of urban conservation: Can vacant land support native pollinators?* Franklin County Master Gardeners Day of Education. Chadwick Arboretum, The Ohio State University. Columbus, OH. (2/1/20) (300 participants)
10. Gardiner, M.M. *Dandelion detectives: A youth citizen science program focused on the value of weeds.* One Day Insect University. The Ohio State University. Columbus, OH. (10/29/19) (400 participants)
11. Gardiner, M.M. *The value of vacant land for urban bee conservation.* From Blight to Bight Program. Cleveland Museum of Natural History. Cleveland, OH. (8/19/19) (60 participants)
12. Gardiner, M.M. *The value of vacant land for urban bee conservation.* Pickaway County Master Gardeners Founders Day Event. Circleville, OH. (6/12/19) (50 participants)
13. Gardiner, M.M. *Vacant land for bees: From potential to practical: Vacant Land for Insect Conservation.* Stewardship Network of NE Ohio Earth Day Event. Cleveland Museum of Natural History. Cleveland, OH. (4/28/19) (150 participants)
14. Gardiner, M.M. *The balancing act of urban conservation: Can vacant land support biodiversity and ecosystem services?* The OSU Pollinator Summit. (4/1/19) (300 participants)
15. Gardiner, M.M. *Identifying good garden bugs.* Columbus Dispatch Home and Garden Show Columbus, OH. (3/1/19) (50 participants)

**Workshops and Field Days Organized (Last 10 years listed, total of 43 events)**

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)
6. Hops First Friday Tour. Wooster, OH (9/4/2015) (15 participants)
7. Hops Production Field Night. Piketon, OH (7/30/15) (50 participants)
8. Hops Production Field Night. Wooster, OH (7/23/15) (50 participants)
9. Hops Bine Training Workshop. Wooster, OH (5/13/2015) (9 participants)
10. Hops First Friday Tour. Wooster, OH (5/1/2015) (17 participants)
11. Hops Spring Pruning Workshop. Wooster, OH (4/21/2015) (9 participants)
12. Hops First Friday Tour. Wooster, OH (4/3/2015) (12 participants)
13. Ohio Hops Conference and Trade Show held in partnership with the Ohio Craft Brewers Conference. Wooster, OH. (2/5 and 2/6/15). (350 participants)

14. Laying the Foundation for Successful Hops Production. Wooster, OH. (2/4/15) (50 participants)
15. Secret Lives of Good Garden Bugs & Buckeye Lady Beetle Blitz Volunteer Round-Up, Cincinnati, OH (5/16/14) (16 participants)
16. Secret Lives of Good Garden Bugs & Buckeye Lady Beetle Blitz Volunteer Round-Up, Cleveland, OH (5/15/14) (35 participants)
17. Secret Lives of Good Garden Bugs & Buckeye Lady Beetle Blitz Volunteer Round-Up, Wooster, OH (5/14/14) (50 participants)
18. Hops Production Workshop, Wooster, OH (2/15/14) (380 participants)

**K-12 School Programs: 9 programs given**

**PROFESSIONAL SERVICE**

**Leadership in Professional Organizations**

Governing Board, Entomological Society of America, North Central Branch Representative (2023-present)  
 Entomological Society of America North Central Branch Past President (2022-2023)  
 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: 10**

**External Review Panels**

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

**University and College Committees**

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, OSU Entomology Graduate Studies Committee (2010-present)  
Member, OSU Entomology Seminar Committee (2010-2017)  
Member, OARDC Beautification Committee (following tornado) (2010-2011)

**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