

Mark D. Hunter, Curriculum Vitae

Summary

Mark Hunter is the Earl E. Werner Distinguished University Professor of Ecology and Evolutionary Biology at the University of Michigan. He received his bachelor's degree in 1984 and his doctorate in 1988, both from the University of Oxford in England. After serving as a NATO International Fellow and an NSERC International Fellow, he joined the faculty of the University of Georgia in 1995. While at UGA, he served as Professor in the Institute of Ecology and as founding Director of the Center for Biodiversity and Ecosystem Processes. He joined the University of Michigan in January 2006. His research interests include population biology, environmental change, plant-animal interactions, ecosystem ecology, and biodiversity. Professor Hunter has published over 170 research articles and written or edited six books. He is the recipient of both a CAREER Award and an OPUS Award from the National Science Foundation, and in 2014 was elected a Fellow of the Ecological Society of America. From 2007 to 2012, he served as the first Director of the award-winning Frontiers Master's Program in Ecology and Evolutionary Biology, which fosters graduate student diversity at the University of Michigan. Media coverage of his research includes The BBC, CNN, CBC, ABC, The Times, The Business Standard, The LA Times, The San Francisco Chronicle, Science Podcast, Nature World News, The National Geographic, Scientific American, Natural History Magazine, Science News, Science Magazine, The Smithsonian, United Press International, and National Public Radio/Public Radio International.

Education

1984-1988: University of Oxford, Oxford, UK. Ph.D. Ecology.

1981-1984: University of Oxford, Oxford, UK. B.A. (Honors) Zoology.

Employment

2017 – present:	Earl E. Werner Distinguished University Professor, University of Michigan
2010 – present:	Henry A. Gleason Collegiate Professor, University of Michigan
2006 – present:	Professor, Ecology & Evolutionary Biology, University of Michigan
2006 – present:	Professor, SNRE and SEAS
2002 – 2005:	Director, Center for Biodiversity and Ecosystem Processes University of Georgia, Athens, GA
2005 – 2006:	Professor, Institute of Ecology, University of Georgia, Athens, GA
2000 – 2005:	Associate Professor, Institute of Ecology, University of Georgia, Athens, GA
1995 – 2000:	Assistant Professor, Institute of Ecology, University of Georgia, Athens, GA
1992 – 1995:	NSERC International Research Fellow, Department of Biology, Laval University, Canada.
1989 – 1992:	NATO Research Fellow, Department of Entomology, Pennsylvania State University, USA.
1988 – 1989:	Research Fellow, Department of Zoology, University of Oxford, United Kingdom.

Major Grants Awarded

- 2016-2019: Immunity in an ecological context: the intersection of host physiology, medicinal food plants, and microbiomes in a natural butterfly-parasite system. Co-PIs Jaap de Roode & Nicole Gerardo (Emory University). NSF Competitive Research Grant, IOS, \$868,533.
- 2017-2018: Renewal: Enhancing long-term carbon sequestration in soils by mycorrhizal fungi. Co-PI Timothy James. Energy Institute Competitive Grant, \$20,000.
- 2016-2017: Enhancing long-term carbon sequestration in soils by mycorrhizal fungi. Co-PI Timothy James. Energy Institute Competitive Grant, \$20,000.
- 2013-2016: Collaborative Research: Influence of below-ground species interactions on dynamics above ground: Trait-mediated indirect effects from soils to parasites of leaf-feeding herbivores. Co-PI Jaap De Roode (Emory University). NSF Competitive Research Grant, Ecology, \$750,000.
- 2008-2013: Whose phenotype is it anyway? The complex role of mycorrhizal fungi in the expression of plant defense. NSF Competitive Research Grant, Ecology, \$650,000.
- 2010-2013: Collaborative Research. Geographic Variation in Plant-Herbivore-Parasite Interactions: Self-Medication in Monarch Butterflies. Co-PI Jaap De Roode (Emory University) NSF Competitive Research Grant, Population and Community Ecology, \$647,519.
- 2012-2014: OPUS: Trophic Interactions, Plant Quality, and the Integration of Above and Belowground Processes. NSF Competitive Research Grant, Population and Community Ecology, \$185,214.
- 2010-2014: Building bridges, creating community, and wise mentoring: building capacity to enhance diversity in the STEM disciplines. NSF Competitive Research Grant, Innovation through Institutional Integration, \$1,250,000. PI Abigail Stewart, Co-PI Mark D. Hunter.
- 2006-2008: Managing forests under global environmental change: Soil food web controls of carbon storage. McIntire-Stennis U.S. Forest Service Competitive Research Grant, \$60,000. Co-PI D.R. Zak.
- 2004-2008: Environmental gradients and variation in the strength of bird predation on oak herbivores. NSF Competitive Research Grant, Ecology, \$350,556. Co-PI, R. Cooper.
- 2002-2007: Long-term consequences of biochemical and biogeochemical changes in the Horseshoe Bend Agroecosystem. NSF LTREB Competitive Research Grant, Ecosystem Studies, \$300,000. Co-Pi's D.C. Coleman and P.F. Hendrix.
- 2003-2007: Causes, consequences, and control of outbreaks of the hemlock woolly adelgid. USDA Forest Service, \$125,000.
- 2004-2006: Ecological circuitry collaboratory. NSF Competitive Research Grant, Ecosystem Ecology, \$24,000.
- 2001-2005: Changes in leaf chemistry, insect herbivory, leaf abscission and decomposition between ambient and elevated CO₂. SERC-NIGEC, \$430,000. Co-PI, P. Stiling.
- 2000-2004: Nitrogen controls of below-ground carbon allocation and fates at ecosystem levels. USDA-NRI Competitive Research Grant, \$400,000. Co-Pi's J.J. Hendricks and R.J. Mitchell.
- 1999-2004: Canopy herbivory and soil processes in a temperate and tropical forest. NSF Competitive Research Grant, Ecosystem Ecology, \$420,000. Co-Pi's M.D. Lowman and T.D. Schowalter.
- 2002-2008: Regional scale consequences of global change: Anticipating the supply of ecosystem services. NSF Long-Term Ecological Research. \$6,720,000. With 31 CO-PI's.
- 1998-2001: Is genetic diversity redundant for ecosystem function? Linking genotype and decomposition. Andrew W. Mellon Foundation, \$130,000.

- 1999-2001: Top-down and bottom-up effects on herbivores: Nutrient availability and the trophic interactions of insects on oak. NSF Competitive Research Grant, Ecology, \$70,000.
- 1999-2000: Identification of biochemical messengers in herbivores that modulate plant growth and development. NSF Competitive Research Grant, Ecological and Evolutionary Physiology. \$41,560. Co-Pi's M.I. Dyer and M.R. Brown.
- 1999-2000: Coweeta LTER Equipment and Cross-Site Supplement. NSF Long-Term Ecological Research, \$35,000. Co-Pi's D.C. Coleman, B.D. Kloeppel, and C.M. Pringle.
- 1998-1999: Genetics of stress resistance traits in turkey oak, *Quercus laevis*. International Society of Arboriculture Research Trust. \$8,800. Co-Pi L.A. Donovan.
- 1996-1998: Short- and long-term effects of hurricane Opal on a forest ecosystem. NSF SGER Grant, Long-term studies in environmental biology program, \$24,961.
- 1996-1999: Environmental heterogeneity and the relative roles of top-down and bottom-up forces in oak herbivore communities. NSF CAREER Award, Ecology, \$120,000.
- 1997-2000: Genome Analysis Facility Grant, UGARF, University of Georgia, \$750,000. Collaborative grant with 18 CO-PI's.
- 1996-2001: Long-term studies of disturbances as they affect ecological processes in landscapes of the southern Appalachians. NSF Competitive Research Grant, Ecosystem Studies (LTER), \$6,030,489. With 31 CO-PI's.
- 1992-1994: The role of host-plant variability in the induction of insect diapause: proximal mechanisms and ecological consequences. NSERC International Research Fellowship, \$58,000, Laval University.
- 1990-1993: Impact of damage-induced changes in oak leaves on susceptibility of gypsy moth to a baculovirus. NSF Competitive Research Grant, Ecology, \$200,000. Co-Pi J.C. Schultz, Pennsylvania State University.
- 1991-1993: Novel tactics in apple IPM to manage OP resistance and biological control. USDA IPM Competitive Grants Program, \$150,000. Co-Pi's L.A. Hull, B.A. McPherson & G.M. Greene, Pennsylvania State University.
- 1991-1994: Supplement grant for research at a National Science Foundation long-term ecological research site, Jornada, New Mexico. NSF Supplement, \$50,000. Co-Pi J.C. Schultz, Pennsylvania State University.
- 1990-1991: Exploiting natural insecticides in apple cultivars to control tufted apple bud moth. PSU College of Agriculture Competitive Grant, \$47,504. Co-Pi L.A. Hull, Pennsylvania State University.
- 1989-1991: Interactions between the gypsy moth, host plant chemistry, and susceptibility to a nuclear polyhedrosis virus. NATO Research Fellowship, \$46,000. Pennsylvania State University.
- 1987-1989: The potential for outbreaks of the winter moth in plantations of Sitka Spruce in Scotland. Scottish Forestry Trust/Barbinder Trust Joint Competitive Research Grant, \$44,000. University of Oxford.
- 1983: A study of pass migration of Passerine birds in the North Western Himalayas. Royal Geographical Society/British Broadcasting Corporation Joint Competitive Research Grant, \$20,000. University of Oxford.

Professional Awards/Distinctions

- 2019: Teaching Excellence Award, Program in Biology, University of Michigan.
- 2018/2019: Science Communication Fellow, University of Michigan.
- 2017: The Earl E. Werner Distinguished University Professorship from the University of Michigan.
- 2017: Inaugural Outstanding Teacher Award, Department of Ecology & Evolutionary Biology, University of Michigan.
- 2016: Secured 18th consecutive NSF grant to complete 30 years of continuous NSF funding (1990 through 2019).

- 2014: Honorary Fellow of the Ecological Society of America. For contributions to research, education and/or outreach in the ecological sciences.
- 2013: Rackham Master's Mentoring Award. For contributions to Master's education at the University of Michigan through the Frontiers Master's Program.
- 2012: OPUS Award, National Science Foundation.
- 2011: Honorary Membership and Keynote Speaker, Golden Key International Honour Society.
- 2010: The Henry A. Gleason Collegiate Professorship from the College of Literature, Science and the Arts, University of Michigan.
- 2010: Excellence in Education Award for special contributions to the educational mission, College of Literature, Science and the Arts, University of Michigan.
- 2010: Imes and Moore Faculty Award for exceptional contributions toward increasing student diversity. College of Literature, Science and the Arts, University of Michigan.
- 2010: Choice Award from the American Library Association for Outstanding Academic Title (for "The Ecology of Insects: Concepts and Applications. 2nd Edition." Wiley-Blackwell, Oxford).
- 2009: Dwight M. DeLong Distinguished Speaker, The Ohio State University.
- 2009: Distinguished Diversity Leaders (Team Award) from the University of Michigan. For the Frontiers Master's Program in Ecology & Evolutionary Biology.
- 2008: Opening Plenary Speaker, The Entomological Society of Argentina, Cordoba, Argentina.
- 2005: Plenary Speaker. National Academy of Sciences, Irvine, CA. Understanding factors that allow biodiversity to evolve and to persist.
- 2005: College of Environment and Design, Outstanding Teacher Award.
- 2004: Plenary Speaker. AIBS Annual Meeting/Workshop on Invasive Species, Washington DC.
- 2003: Institute of Ecology Outstanding Instructor Award.
- 1999 – 2004: Honorary Research Fellow, Marie Selby Botanical Gardens, Sarasota, FL.
- 1999: "Eminent Ecologist", Kellogg Biological Station.
- 1999: University of Georgia Creative Research Medal.
- 1999: Bobby C. Pass Award for Inspiring Scientific Creativity of Graduate Students, University of Kentucky.
- 1998: Plenary Speaker, Annual Meeting of the Entomological Society of Canada, Quebec, PQ, Canada.
- 1996-1998: University of Georgia Lilly Teaching Fellowship.
- 1996-1998: NSF CAREER Award.
- 1992-1994: NSERC International Research Fellowship.
- 1989-1991: NATO International Research Fellowship.
- 1988: Wain Fellowship, British Agriculture and Food Research Council.

Administrative Responsibilities

2007 to 2012: Director, Frontiers Master's Program in Ecology and Evolutionary Biology. The goal of the Frontiers program is to increase participation by underrepresented groups in the graduate study of ecology and evolutionary biology at the University of Michigan and beyond. The Frontiers Program received a Distinguished Diversity Leaders Award from the University of Michigan in 2009, the Imes & Moore Faculty Award for exceptional contributions toward increasing student diversity from the College of Literature, Science and the Arts, in 2010, and the Rackham Master's Mentor Award in 2013.

2012. Interim Chair, Department of Ecology & Evolutionary Biology, University of Michigan.

October 2002 to December 2005: Founding Director of the Center for Biodiversity and Ecosystem Processes, University of Georgia. Facilitated research activities of over 50 faculty from 11 departments and 4 colleges. The Center's mission is to conduct fundamental research into the role of biodiversity in sustaining the ecosystem services that support life, and to

disseminate research findings within and beyond the scientific community. Raised \$1.8 million for Center activities.

Other Key Service Roles:

2020: Provost's Office. Review of UM Tenure & Promotion Dossiers.
 2019: Provost's Office. Review of UM Tenure & Promotion Dossiers.
 2017: Provost's Office. Review of UM Tenure & Promotion Dossiers.
 2015-2016: LSA Deans Advisory Task Force on Promoting Faculty Diversity.
 2013-2019: Rackham Graduate School MORE Committee (Mentoring Others Results in Excellence). A program to build a culture of mentoring at the University of Michigan.
 2013-2014: UM Comprehensive Studies Program, Review Task Force. The Comprehensive Studies Program aims to support and retain a diverse undergraduate student body at the University of Michigan.
 2012: Chair, External Review Committee, James Hutton Institute, Scotland.

Editorial Boards: Ecological Reviews (British Ecological Society), Ecological Entomology, Agricultural and Forest Entomology,

Courses Taught

Undergraduate Level: Introductory Biology, General Ecology, Population and Community Ecology, Ecosystem Ecology, Entomology, Pests and Diseases, Human Physiology, Ecological Basis of Environmental Issues, Biodiversity, Plant-Animal Interactions.
 Graduate Level: Community Ecology, Population Ecology, Ecosystem Ecology, Herbivory, Ecological Applications, Pharm-Ecology.

Graduate Students Supervised

1. Rebecca E. Forkner. Variation in the impact and diversity of predaceous terrestrial arthropods as a function of resource heterogeneity, habitat structure, and trophic interactions. Ph.D. dissertation, graduated fall 1998.
2. Barbara C. Reynolds. Canopy herbivory and soil processes in a temperate forest. Ph.D. dissertation, graduated spring 2000.
3. Rebecca D. Klaper. The role of genotype and environment in the expression of phenolic defenses in turkey oak, *Quercus laevis*. Ph.D. dissertation, graduated spring 2000.
4. Katherine D. Kearns. Chemical mediation of interactions between cyanobacteria and green algae in freshwater lakes. Ph.D. dissertation, graduated spring 2000.
5. Alissa K. Salmore. Tradeoffs between defense and reproduction in *Sanguinaria canadensis* (Papaveraceae) along an altitudinal gradient. M.S. dissertation, graduated spring 2000.
6. Michael D. Madritch. Is genetic diversity redundant for ecosystem function? Linking genotype and decomposition. Ph.D. dissertation, graduated fall 2002.
7. Sandra E. Helms. The influences of plant quality and intraguild predation on *Asclepias* insects. M.S. dissertation, graduated fall 2005.
8. Christopher J. Frost. Canopy herbivores and nutrient cycling in forest ecosystems. Ph.D. dissertation, graduated fall 2005.
9. M.Carmen Hall. Effects of elevated concentrations of atmospheric carbon dioxide on insect herbivores and decomposition processes. Ph.D. dissertation, graduated fall 2005.

10. Caralyn B. Zehnder. Influences of plant quality and maternal environment on the performance and population dynamics of a phloem-feeding insect herbivore. Ph.D. dissertation, graduated fall 2006.
11. Becky Ball. Disentangling effects of litter diversity on ecosystem processes: non-random species loss, cross-system linkages, and ecosystem function. Ph.D. dissertation, graduated fall 2007.
12. Kyle Wickings (with J. Ruberson). Arthropod biodiversity in a Georgia cotton agroecosystem: the role of Bt cotton, tillage, cover crops and red imported fire ants. Ph.D. dissertation, graduated fall 2007.
13. Kristine Crous. Plant nitrogen partitioning during photosynthesis under elevated atmospheric carbon dioxide. Ph.D. dissertation, graduated fall 2008.
14. Susan Kabat. Genetic structure of the common milkweed, *Asclepias syriaca* L. MS thesis, graduated spring 2010.
15. Rachel Hessler. Induced dispersal strategies in plants attacked by herbivores. MS student, graduated spring 2010.
16. Nathan Haan. Ecological restoration of roadsides: Examining ecological and organizational feasibility. MS thesis, graduated fall 2010.
17. Rachel Vannette. The role of mycorrhizae in complex ecological interactions. Ph.D. dissertation, graduated summer 2011.
18. Elizabeth Wason. The genetic basis of volatile defenses in plants. Ph.D. dissertation, graduated spring 2012.
19. Leiling Tao. A tale of two elements. Effects of foliar nitrogen and phosphorus stoichiometry on plant-insect interactions. Ph. D. dissertation, graduated summer 2013.
20. Huijie Gan (with D.R. Zak). Oribatid mite communities in soil: structure, function and response to global environmental change. Ph. D. dissertation, graduated fall 2013.
21. Holly Andrews. Drought stress and milkweed defense in a changing world. MS thesis, graduated spring 2015.
22. Johanna Nifosi. Effects of rising temperature on interactions between monarch butterflies and their parasites. MS thesis, graduated spring 2016.
23. Kristel Sanchez. Toxins or medicines? Algal diets mediate parasitism in a freshwater host-parasite system. MS thesis graduated spring 2017.
24. Katherine Crocker. The past is never dead: it isn't even past: Maternal environment affects multiple generations of offspring via hormone provisioning. Ph. D. dissertation, graduated spring 2018.
25. Leslie Decker. Plant quality mediates the response of disease to global environmental change. Ph. D. dissertation, graduated spring 2018.
26. Amanda Meier. The influence of mutualisms below ground on multitrophic interactions above ground. Ph.D. dissertation, graduated summer 2018.
27. Abigail Potts. Unraveling the roles of genotype and environment in the expression of plant defense phenotypes. MS thesis, graduated spring 2020.

Undergraduate Research Students Supervised

Kim Holton, Jason Leathers, Rich Wawrzonek, Doug Marcinek, Russell Scarborough, Katie Kurkjian, Michael Mamay, Jennifer Jarrell, Abigail Feinstein, Matt Wood, Alia Azhar, Meg Andrew, Kim Deal, Alex Reynolds, Jeffrey Etherton, Catherine Ramsay, Emily Franzen, Robert Zinzen, Scott Connelly, Scott Eustis, Valerie Njiri, Sabrina White, Oren Kleinberger, Sandy Helms, Katie Stepp, Alan Grosse, Tricia Rodriguez, Jace Nelson, Rose Cannon, Tom Greenstone, Hannah Smith, Chad Jennison, Candace Stockdale, Ryan Malloy, Paige Doty, Melissa Parris, David Egetter, Ashley Whitaker, Blake Joyce, Josh Booker, Lisa Choi, Sarah Breed, Jayna Berger, Sarah Wheeler, Brooke Nanna, Lindsey MacDonald, Molly Wagner, Kara Steeland, Katrina Diaz, Ian Grettenberger, Barbara Wagner, Hannah DeRose-Wilson, Simeen Kahn, Kinsey Brock, Grace Honik, Ariel Bond, Katryn Williams, Allison Ho, Rihana Bokhari, Fulla Abdul-Jabbar, Paul Rink, Sydney Johnson, Nicholas Orr, Ingrid Slette, Anvi Shah, Sasha Berns. Mary Kate Cartmill, Jessica Schroeder, Skye Huerta, Riley Peterson, Jordan McMahon, Samuel Clinton, Callie Chappell, Elizabeth Oeller, Yitong Yang, Abrianna Soule, Kendall Schissler, Kathleen Moriarty, Abigail Potts, Graham Bevier, Jacqueline Kristofik, Hannah Fuller, Tori Varnau, Isabelle Katz, Stephanie Roskowski, Brennan Schilling, Kamren Johnson, Anne Bonds, Abigail Randal, Lydia Rooney.

Publications

(Google scholar: <http://scholar.google.com/citations?user=KxLzEI4AAAAJ&hl=en>)

Books Written

- 2016 Hunter, M.D. **The Phytochemical Landscape: Linking Trophic Interactions and Nutrient Dynamics**. Princeton University Press, Monographs in Population Biology.
- 2008 Speight, M.R., M.D. Hunter, and A.D. Watt. **The Ecology of Insects: Concepts and Applications. 2nd Edition**. Wiley-Blackwell, Oxford.
- 1999 Speight, M.R., M.D. Hunter, and A.D. Watt. **The Ecology of Insects: Concepts and Applications**. Blackwells Scientific, Oxford.

Research Articles

- 2021 Meier, A.R. & M.D. Hunter. Variable effects of mycorrhizal fungi on predator-prey dynamics under field conditions. **Journal of Animal Ecology** 90: 1341-1352. DOI: 10.1111/1365-2656.13459.
- 2021 Decker, L.E., C.S. Jeffrey, K.M. Ochsenrider, A.S. Potts, J.C. de Roode, A.M Smilanich & M.D. Hunter. Elevated atmospheric concentrations of CO₂ increase endogenous immune function in a specialist herbivore. **Journal of Animal Ecology** 90: 628-640. DOI: 10.1111/1365-2656.13395.
- 2021 Potts, A.S. & M.D. Hunter. Unraveling the roles of genotype and environment in the expression of plant defense phenotypes. **Ecology and Evolution** 11: 8542-866. DOI: 10.1002/ece3.7639.
- 2020 Decker, L.E. & M.D. Hunter. Interspecific variation and elevated CO₂ influence the relationship between plant chemical resistance and regrowth tolerance. **Ecology and Evolution** 10: 5416-5430. DOI: 10.1002/ece3.6284.

- 2020 Soule, A., L.E. Decker & M.D. Hunter. Effects of diet and temperature on monarch butterfly wing morphology and flight ability. **Journal of Insect Conservation** DOI: 10.1007/s10841-020-00267-7.
- 2019 Sanchez, K.F., N. Huntley, M.A. Duffy & M.D. Hunter. Toxins or medicines? Phytoplankton diets mediate host and parasite fitness in a freshwater system. **Proceedings of the Royal Society B** 286: 20182231. DOI: 10.1098/rspb.2018.2231.
- 2019 Hunter, M.D. & Kozlov, M.V. The relative strengths of rapid and delayed density dependence acting on a terrestrial herbivore change along a pollution gradient. **Journal of Animal Ecology** 88: 665-676. DOI: 10.1111/1365-2656.12930.
- 2019 Decker, L.E., A. Soule, J.C. de Roode & M.D. Hunter. Phytochemical changes in milkweed induced by elevated CO₂ alter wing morphology but not toxin sequestration in monarch butterflies. **Functional Ecology** 33: 411-421. DOI: 10.1111/1365-2435.13270.
- 2019 Zvereva, E.L., M.D. Hunter, V. Zverev, O.Y. Kruglova & M.V. Kozlov. Climate warming leads to decline in frequencies of melanic individuals in subarctic leaf beetle populations. **Science of the Total Environment** 673: 237-244. DOI: 10.1016/j.scitotenv.2019.03.458.
- 2019 Meier, A.R. & M.D. Hunter. Mycorrhizae alter constitutive and herbivore-induced volatile emissions by milkweeds. **Journal of Chemical Ecology** 45: 610-625. DOI: 10.1007/s10886-019-01080-6.
- 2019 Tan, W-H, T. Acevedo, E.V. Harris, T.Y. Alcaide, J.R. Walters, M.D. Hunter, N.M. Gerardo & J.C. de Roode. Transcriptomics of monarch butterflies reveals strong differential gene expression in response to host plant toxicity, but weak response to parasite infection. **Molecular Ecology** 28: 4845-4863. DOI: 10.1111/mec.15219.
- 2019 de Roode, J.C. & M.D. Hunter. Self-medication in insects: when altered behaviors of infected insects are a defense instead of a parasite manipulation. **Current Opinion in Insect Science** 33: 1-6. DOI: 10.1016/j.cois.2018.12.001.
- 2019 Gan, H., D.R. Zak & M.D. Hunter. Scale dependency of dispersal limitation, environmental filtering and biotic interactions determine the diversity and composition of oribatid mite communities. **Pedobiologia** 74: 43-53. DOI: 10.1016/j.pedobi.2019.03.002.
- 2019 Sharma, R., M. Zhou, M.D. Hunter & X. Fan. Rapid in-situ analysis of plant emission for disease diagnosis using a portable gas chromatography device. **Journal of Agricultural and Food Chemistry** 67: 7530-7537. DOI: 10.1021/acs.jafc.9b02500.
- 2019 de Roode, J.C., S. Altizer & M.D. Hunter. Multi-trophic interactions and migration behavior determine the ecology and evolution of parasite infection in monarch butterflies. Pp 480-510 In: **Wildlife disease ecology: Linking theory to data and application** (eds K. Wilson, A. Fenton, & D. Tompkins). University of Cambridge Press.
- 2018 Decker, L.E., J.C. de Roode, & M.D. Hunter. Elevated atmospheric concentrations of carbon dioxide reduce monarch tolerance and increase parasite virulence by altering the medicinal properties of milkweeds. **Ecology Letters** 21: 1353-1363. DOI: 10.1111/ele.13101.
- 2018 Satterfield, D.A, J.C. Maerz, M.D. Hunter, D.T.T. Flockhart, K.A. Hobson, D.R. Norris, H. Streit, J.C. de Roode, & S. Altizer. Migratory monarchs that encounter resident monarchs show life-history changes and higher rates of parasite infection. **Ecology Letters** 21: 1670-1680. DOI: 10.1111/ele.13144.

- 2018 Faldyn, M.J., M.D. Hunter, & B.D. Elderd. Climate change and an invasive tropical milkweed: An ecological trap for monarch butterflies. **Ecology** 99: 1031-1038. DOI: 10.1002/ecy.219.
- 2018 Meier, A.R. & M.D. Hunter. Arbuscular mycorrhizal fungi mediate herbivore-induction of plant defenses differently above and belowground. **Oikos** 127: 1759-1775. DOI: 10.1111/oik.05402.
- 2018 Meier, A.R. & M.D. Hunter. Mycorrhizae alter toxin sequestration and performance of two specialist herbivores. **Frontiers in Ecology and Evolution** 6: 33. DOI: 10.3389/fevo.2018.00033.
- 2018 Crocker, K.C. & M.D. Hunter. Social density, but not sex ratio, drives ecdysteroid hormone provisioning to eggs by female house crickets (*Acheta domestica*). **Ecology and Evolution** 8: 10257-10265. DOI: 10.1002/ece3.4502.
- 2018 Crocker, K.C. & M.D. Hunter. Environmental causes and transgenerational consequences of ecdysteroid hormone provisioning in *Acheta domestica*. **Journal of Insect Physiology** 109: 69-78. DOI: 10.1016/j.jinsphys.2018.06.003.
- 2018 Tan, W-H, L. Tao, K.M. Hoang, M.D. Hunter, & J.C. de Roode. The effects of milkweed induced defense on parasite resistance in monarch butterflies, *Danaus plexippus*. **Journal of Chemical Ecology** 44: 1040-1044.
- 2017 Hoang, K., L. Tao, M.D. Hunter, and J. de Roode. Host diet affects the morphology of a butterfly parasite. **Journal of Parasitology** 103: 228-236.
- 2017 Tao, L., M.D. Hunter, & J.C. de Roode. Microbial root mutualists affect the predators and pathogens of herbivores above ground: Mechanisms, magnitudes, and missing links. **Frontiers in Ecology and Evolution** 5: 160.
- 2016 Tao, L., K.M. Hoang, M.D. Hunter & J.C. de Roode. Fitness costs of animal medication: anti-parasitic plant chemicals reduce fitness of monarch butterfly hosts. **Journal of Animal Ecology** 85: 1246-1254.
- 2016 Tao, L., A. Ahmad, J.D. de Roode & M.D. Hunter. Arbuscular mycorrhizal fungi affect plant tolerance and chemical defenses to herbivory through different mechanisms. **Journal of Ecology** 104: 561-571.
- 2016 Zvereva, E.L., M.D. Hunter, V. Zverev, & M.V. Kozlov. Factors affecting population dynamics of leaf beetles in a subarctic region: the interplay between climate warming and pollution decline. **Science of the Total Environment** 566-567: 1277-1288.
- 2015 Tao, L., C.D. Gowler, A. Ahmad, M.D. Hunter & J.C. de Roode. Disease ecology across soil boundaries: effects of belowground fungi on aboveground host-parasite interactions. **Proceedings of the Royal Society of London B** DOI: 10.1098/rspb.2015.1993.
- 2015 Sternberg, E.D., J.C. de Roode, & M.D. Hunter. Trans-generational parasite protection associated with paternal diet. **Journal of Animal Ecology** 84: 310-321.
- 2015 Tao, L. & M.D. Hunter. Effects of soil nutrients on the sequestration of plant defense chemicals by the specialist insect herbivore, *Danaus plexippus*. **Ecological Entomology** 40: 123-132.
- 2015 Riolo, M.A., P. Rohani, & M.D. Hunter. Local variation in plant quality influences large-scale population dynamics. **Oikos** 124: 1160-1170.
- 2015 Price, P.W. & M.D. Hunter. Population dynamics of an insect herbivore over 32 years are driven by precipitation and host-plant effects: Testing model predictions. **Environmental Entomology** 44: 463-473.

- 2015 Gowler, C.D., K.E. Leon, M.D. Hunter, & J.C. de Roode. Secondary defense chemicals in milkweed reduce parasite infection in monarch butterflies, *Danaus plexippus*. **Journal of Chemical Ecology** 41: 520-523.
- 2015 Oberhauser, K.S., M. Anderson, S. Anderson, W. Caldwell, A.P. DeAnda, M.D. Hunter, M. Kaiser, & M.J. Solensky. Lacewings, wasps, and flies—oh my: insect enemies take a bite out of monarchs. Pages 71-82 In: **Monarchs in a Changing World: Biology and Conservation of an Iconic Insect** (eds K.S. Oberhauser, S. Altizer & K. Nail). Cornell University Press, Ithaca, NY.
- 2014 Hunter, M.D., M.V. Kozlov, J. Itämies, E. Pulliainen, J. Bäck, E-M. Kyrö, & P. Niemelä. Current temporal trends in moth abundance are counter to predicted effects of climate change in an assemblage of subarctic forest moths. **Global Change Biology** 20: 1723-1737.
- 2014 Hunter, M.D. Linking population processes and ecosystem processes through changes in plant chemistry. **Bulletin of the Ecological Society of America** 95: 214-215.
- 2014 Vannette, R.L. & M.D. Hunter. Genetic variation in plant below-ground response to elevated CO₂ and two species of herbivores. **Plant and Soil** DOI 10.1007/s11104-014-2203-9.
- 2014 Gan, H., D.R. Zak & M.D. Hunter. Trophic stability of soil oribatid mites in the face of environmental change. **Soil Biology & Biochemistry** 68: 71-77.
- 2014 Tao, L., A.R. Berns & M.D. Hunter. Why does a good thing become too much? Interactions between foliar nutrients and toxins determine performance of an insect herbivore. **Functional Ecology** 28: 190-196.
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Papers Given at Meetings/Universities

- 2022: “Self-medication in monarch butterflies.” Plenary speaker, Michigan Entomological Society, Petoskey, MI.
- 2019: “The phytochemical landscape: Linking trophic interactions and nutrient dynamics.” Colloquium at the University of Wisconsin, Madison, WI.
- 2019: “Animal pharm: The ecology and evolution of medication behaviors in animals.” Distinguished University Professor Lecture Series, University of Michigan, Ann Arbor, MI.
- 2019: “The ecology and evolution of medication behaviors in animals.” Colloquium at Louisiana State University, Baton Rouge, LA.
- 2019: “Arbuscular mycorrhizal fungi alter herbivore-predator interactions.” Meier, A.R. & M.D. Hunter. Gordon Research Conference in Plant-Animal Interactions, Ventura, CA.
- 2019: “Arbuscular mycorrhizal fungi alter herbivore-predator interactions.” Meier, A.R. & M.D. Hunter. Gordon Research Early Career Seminar, Ventura, CA.
- 2019: “Effects of elevated CO₂ on environmentally-mediated immunity in a specialist herbivore.” Decker, L.E., J.C. de Roode, A.S. Potts & M.D. Hunter. Annual Meeting of the Ecological Society of America, Louisville, KY.
- 2019: “Arbuscular mycorrhizal fungi mediate herbivore-predator interactions.” Meier, A.R. & M.D. Hunter. Annual Meeting of the Entomological Society of America, St. Louis, MO.
- 2018: “How monarch butterflies use milkweeds as medicines.” Colloquium at Michigan State University, East Lansing, MI.
- 2018: “Self-medication by animals in the great green pharmacy.” Colloquium at the University of Montana, Missoula, MT.
- 2018: “Trait variation and trait diversity on the phytochemical landscape: The importance of spatial variation.” Annual Meeting of the Ecological Society of America, New Orleans, LA.
- 2018: “Arbuscular mycorrhizal fungi determine the susceptibility of milkweed herbivores to their predators and parasites.” Annual Meeting of the Entomological Society of America, Vancouver, BC.
- 2018: “Evidence for maternal hormone provisioning as an adaptive response to social density in an insect.” Crocker, K.C. and M.D. Hunter. Annual Meeting of the Animal Behavior Society, Milwaukee, WI.
- 2018: “Monarch butterflies hijack host plant defensive chemicals as a defense against their parasites.” De Roode, J.C., L. Tao, & M.D. Hunter. Annual Meeting of the Ecological Society of America, New Orleans, LA.
- 2018: “Toxins or medicines? Algal diets mediate parasitism in a freshwater host-parasite system.” Sanchez, K.F., N. Huntley, M.A. Duffy, & M.D. Hunter. Annual Meeting of the Ecological Society of America, New Orleans, LA.
- 2017: “Effects of plant chemistry on the susceptibility of herbivores to disease.” Annual Student Invited Speaker, Mississippi State University, Starkville, MS.
- 2017: “The phytochemical landscape: Linking trophic interactions and nutrient dynamics.” Colloquium at Purdue University, West Lafayette, IN.
- 2017: “The phytochemical landscape: Linking trophic interactions and nutrient dynamics.” Colloquium at the University of Georgia, Athens, GA.
- 2017: “Self-medication by animals in the great green pharmacy.” Osher Lifelong Learning

- Institute Distinguished Lecture Series, Ann Arbor, MI.
- 2017: "Interactions among environmental change, plant chemistry, and disease transmission: Disease dynamics in our phytochemical future." Annual Meeting of the Ecological Society of America, Portland, OR.
- 2017: "Effects of arbuscular mycorrhizal fungi on aboveground multitrophic interactions." Meier, A.R. and M.D. Hunter. Annual Meeting of the Ecological Society of America, Portland, OR.
- 2017: "Diet quality-induced changes in host tolerance to infection and parasite virulence under elevated atmospheric CO₂." Decker, L.E., J. de Roode, and M.D. Hunter. Annual Meeting of the Ecological Society of America, Portland, OR.
- 2017: "Impacts of arbuscular mycorrhizal fungi on interactions between plants and herbivores." Meier, A.R. and M.D. Hunter. Gordon Research Conference, Ventura, CA.
- 2017: "Changes in plant chemistry induced by elevated atmospheric CO₂ concentrations alter both resistance and tolerance of monarch butterflies to parasites." Decker, L.E., J de Roode, and M.D. Hunter. Gordon Research Conference, Ventura, CA.
- 2017: "Pick your poison: Resource ecology trade-offs influence parasitism in an invertebrate system." Sanchez, K.F., M.A. Duffy and M.D. Hunter. Benthics Ecology Meeting, Myrtle Beach, SC.
- 2017: "Changes in monarch host tolerance and parasite virulence under elevated atmospheric CO₂. Decker, L.E., J.C. de Roode, and M.D. Hunter. Annual Meeting of the North Central Branch of the Entomological Society of America, Indianapolis, Indiana.
- 2016: "The effects of elevated atmospheric CO₂ concentration on a parasite of monarch butterflies." Decker, L.E., J. de Roode, and M.D. Hunter. Annual Meeting of the Ecological Society of America, Fort Lauderdale, Florida.
- 2016: "Climate change and disease: Effects of rising temperature on interactions between monarch butterflies and their parasites." J. Nifosi, L.E. Decker, and M.D. Hunter. Annual Meeting of the Ecological Society of America, Fort Lauderdale, Florida.
- 2016: "Impacts of arbuscular mycorrhizal fungi on interactions between plants and herbivores." Meier, A.R., and M.D. Hunter. Annual Meeting of the Ecological Society of America, Fort Lauderdale, Florida.
- 2015: "Plants as drugs: Self-medication in animal populations. Colloquium at the Swedish Agricultural University, Uppsala, Sweden.
- 2015: "Impacts of induced plant responses on interactions between an herbivore and its parasite." Tao, L., M.D. Hunter, & J.C. de Roode. Annual Meeting of the Ecological Society of America, Baltimore, Maryland.
- 2015: "Gifts that keep on giving: Variable provisioning of ecdysteroids to eggs has long-term consequences." Crocker, K.C., M.D. Hunter, & E.A. Tibbetts. International Insect Hormones Workshop, Kolymbari, Crete, Greece.
- 2015: "Times Change: Environmental causes and transgenerational consequences of variable hormone deposition in an insect." Crocker, K.C., M.D. Hunter, & E.A. Tibbetts. Animal Behavior Society Conference, Anchorage, AK, USA.
- 2014: "Effects of arbuscular mycorrhizal fungi on plant-mediated interaction between the monarch butterfly and its protozoan parasite" Tao, L., C. Gowler, M.D. Hunter & J.C. de Roode. Annual Meeting of the Ecological Society of America, Sacramento, California.
- 2014: "Do host plant toxic compounds predict parasite infection in migratory butterflies?" Satterfield, D.A., M.D. Hunter, J.C. de Roode, A.K. Fritzsche & S. Altizer. Annual

- Meeting of the Ecological Society of America, Sacramento, California.
- 2014: "Herbivory and the common milkweed: A study of the effects of herbivory on plant fitness." Moore, A.C. & M.D. Hunter. Annual Meeting of the Ecological Society of America, Sacramento, California.
- 2014 "Self medication in animals." Colloquium at Bowling Green State University, Bowling Green, Ohio.
- 2013: "The role of plant quality in the ecology of animal disease." Colloquium at the Centre for Ecology & Hydrology, Edinburgh, UK.
- 2013: "The role of food quality in the epidemiology of animal disease." Colloquium at the University of Nevada, Reno, NV, USA.
- 2013: "Effects of plant carbon, nitrogen and phosphorus stoichiometry on the efficacy of chemical defenses." Tao, L. & M.D. Hunter. Gordon Research Conference on Plant-Herbivore Interactions, Ventura, CA, USA.
- 2012: "Maintaining feedback between population and ecosystem processes in forests under climate change." Invited Speaker, Workshop on Forests Under Climate Change, Centre for Ecology & Hydrology, London, UK.
- 2012: "Atmospheric nitrogen deposition and soil fauna: the effect on litter decay processes." Gan, H., D.R. Zak & M.D. Hunter. Annual meeting of the Ecological Society of America, Portland, Oregon.
- 2012: "Effects of plant carbon, nitrogen and phosphorus stoichiometry on the efficacy of chemical defenses." Tao, L. & M.D. Hunter. Annual meeting of the Ecological Society of America, Portland, Oregon.
- 2011: "Plant quality as an organizing variable in linking trophic interactions with ecosystem processes." Colloquium at UC Davis, Davis, California. Graduate Student Storer Seminar Invitee.
- 2011: "The role of plant quality in the epidemiology of animal disease." Colloquium at the University of Missouri, Columbia, Missouri.
- 2011: "Does anthropogenic nitrogen deposition induce phosphorus limitation in herbivorous insects?" Tao, L. & M.D. Hunter. 27th New Phytologist Symposium on Stoichiometric Flexibility in Terrestrial Ecosystems Under Global Change. Biosphere 2, Oracle, AZ.
- 2011: "Chronic atmospheric nitrogen deposition decreases microarthropod density in a northern hardwood ecosystem." Gan, H., M.D. Hunter & D.R. Zak. Annual Meeting of the Ecological Society of America, Austin, Texas.
- 2011: "Mycorrhizal abundance nonlinearly affects plant growth, plant defense, and caterpillar performance." Vannette, R.L. & M.D. Hunter. Annual Meeting of the Ecological Society of America, Austin, Texas.
- 2011: "Plants make scents: Latitudinal and intraspecific variation in plant volatile organic chemical emissions." Wason, E.L., A.A. Agrawal & M.D. Hunter. Annual Meeting of the Ecological Society of America, Austin, Texas.
- 2011: "Invasive spotted knapweed alters insect communities on native common milkweed." Slette, I & M.D. Hunter. Midstates Consortium for Math and Science Undergraduate Research Conference, Washington University, St. Louis, Missouri.
- 2010: "The effects of plant quality on the population ecology of herbivores." Colloquium at Kellogg Biological Station, Michigan State University, Hickory Corners, Michigan.
- 2010: "The effects of plant quality on the population dynamics of insects on plants." Colloquium at Emory University, Atlanta, Georgia.
- 2010: "The effects of plant quality on the population ecology of herbivores." Colloquium at the University of Western Ontario, London, Ontario.
- 2010: "Whose phenotype is it anyway? Mycorrhizal fungi as mediators of plant defense against herbivores." Invited Speaker, Gordon Research Conference on Plant Herbivore Interactions, Galveston, Texas.

- 2010: "The herbivore's prescription: A pharmacological perspective on host plant use by herbivores." Forbey, J.S. & M.D. Hunter. Invited Symposium Speaker, British Ecological Society, University of Sussex, UK.
- 2010: "Effects of elevated CO₂ and above-ground herbivory on belowground defense and mycorrhizal interactions." Vannette, R.L. & M.D. Hunter. Annual Meeting of the Ecological Society of America, Pittsburgh, Pennsylvania.
- 2010: "Plant-mediated interactions between insect herbivores and mycorrhizal fungi." Vannette, R.L. and M.D. Hunter. Gordon Research Conference on Plant Herbivore Interactions, Galveston, Texas.
- 2010: "Volatile organic compound emission by milkweed plants in response to herbivore damage by monarch caterpillars." Wason, E.L. & M.D. Hunter. Gordon Research Conference on Plant Herbivore Interactions, Galveston, Texas.
- 2010: "Eastern Hemlock in Southern Appalachian Forests and the Impacts of Hemlock Woolly Adelgid on Nutrient Pools and Cycling." Knoepp, J.D., J.M. Vose, B.D. Clinton & M.D. Hunter. Fifth Symposium on Hemlock Woolly Adelgid in the Eastern United States, Asheville NC.
- 2009: "Plant Quality and the Population Dynamics of Insects on Plants." Dwight M. DeLong Distinguished Lecture, The Ohio State University, Wooster/Columbus, Ohio.
- 2009: "Variation in Plant Quality and the Population Dynamics of Insect Herbivores." Colloquium at Cornell University, Ithaca, NY.
- 2009: "Strange Fruit in the Garden of Eden: How the Quality of Plants Drives the Ecology of Life." Colloquium at Wright State University, Dayton, Ohio.
- 2009: "Effects of elevated CO₂ on induction of chemical defenses by two herbivore species on *Asclepias syriaca*." Vannette, R.L. & M.D. Hunter. Annual meeting of the Ecological Society of America, Albuquerque, NM.
- 2008: "The role of plant quality in the population dynamics of insect herbivores." Opening Plenary Lecture, Entomological Society of Argentina, Cordoba, Argentina.
- 2008: "Linking population dynamics and ecosystem processes in forest systems." Colloquium at the University of Córdoba, Córdoba, Argentina.
- 2008: "Insects as regulators of forest ecosystem processes: Routes of feedback in cybernetic systems." Invited symposium speaker, Annual meeting of the Entomological Society of America, Reno, NV.
- 2008: "Strange Fruit in the Garden of Eden: How the Quality of Plants Drives the Ecology of Life." University-Wide Invited Lecture, University of Wisconsin, Madison, WI.
- 2008: "Relative effects of genotype, mycorrhizal colonization, and elevated CO₂ on the defensive phenotype of *Asclepias syriaca*." Vannette, R.L. & M.D. Hunter. Annual meeting of the Ecological Society of America, Milwaukee, WI.
- 2008: "Litter processing in terrestrial and aquatic ecosystems: Importance of species composition and trait persistence." Kominoski, J.S., C.M. Pringle, B.A. Ball, D.C. Coleman, M.D. Hunter & B.J. Mattsson. Annual meeting of the Ecological Society of America, Milwaukee, WI.
- 2007: "Variation in top-down and bottom-up forces on oak herbivores along an elevational gradient." Zehnder, C.B., K.W. Stodola, R. J. Cooper & M.D. Hunter. Gordon Research Conference, Ventura, CA.
- 2007: "Nutrient cycling in southern Appalachian riparian forests: Impacts of hemlock woolly adelgid infestation and hemlock mortality." Knoepp, J., J. Vose & M.D. Hunter. Soil Science Society of America Annual Meeting, New Orleans, LA.
- 2006: "Linking population dynamics and ecosystem ecology." Colloquium at University of California, Davis, CA.
- 2006: "The population ecology of insects and their role in ecosystems." Colloquium at Western Michigan University, Kalamazoo, MI.
- 2006: "Bird predation on oak herbivores along an environmental gradient." Cooper, R.J., K.W. Stodola, C.B. Zehnder & M.D. Hunter. Annual meeting of the American Ornithologists Union, Veracruz, Mexico.

- 2006 “Long-term consequences of biochemical and biogeochemical changes in the Horseshoe Bend LTREB agroecosystem, Athens, GA.” Coleman, D.C., M.D. Hunter, P.F. Hendrix, D.A. Crossley, S. Arce-Flores, B. Simmons, & K. Wickings. Annual meeting of the Ecological Society of America, Memphis, TN.
- 2006 “Environmental gradients and variation in the strength of bird predation on oak herbivores.” Zehnder, C.B., K. Stodola, R. Cooper, & M.D. Hunter. Annual meeting of the Ecological Society of America, Memphis, TN.
- 2006 “The effects of leaf litter species diversity on decomposition in a forested watershed in the southern Appalachians.” Ball, B., J. Kominoski, M.D. Hunter, C.M. Pringle, D.C. Coleman, & M. Bradford. Annual meeting of the Ecological Society of America, Memphis, TN.
- 2006 “A community genetics perspective on plant competition.” Dinnage, R., A. Zhou, M. Johnson, & M.D. Hunter. Annual meeting of the Ecological Society of America, Memphis, TN.
- 2006 “Environmental gradients and variation in the strength of bird predation on oak herbivores.” Zehnder, C.B., K. Stodola, R. Cooper, & M.D. Hunter. Annual meeting of the Coweeta LTER Program, Coweeta, NC.
- 2006 “The effects of leaf litter species diversity on decomposition in a forested watershed in the southern Appalachians.” Ball, B., J. Kominoski, M.D. Hunter, C.M. Pringle, D.C. Coleman, & M. Bradford. Annual meeting of the Coweeta LTER Program, Coweeta, NC.
- 2006 “Positive non-additive effects of species richness and composition on ecosystem function.” Kominoski, J., C.M. Pringle, B. Ball, M. Bradford, D.C. Coleman, D. Hall, & M.D. Hunter. Annual meeting of the Ecological Society of America, Memphis, TN.
- 2006 “The effects of leaf litter species diversity on decomposition in a forested watershed in the southern Appalachians.” Ball, B., J. Kominoski, M.D. Hunter, C.M. Pringle, D.C. Coleman, & M. Bradford. LTER All Scientists Meeting, Estes Park, CO.
- 2006 “Positive non-additive effects of leaf litter species diversity on breakdown dynamics in a detrital-based stream.” Kominoski, J., C.M. Pringle, B. Ball, M. Bradford, D.C. Coleman, D. Hall, & M.D. Hunter. LTER All Scientists Meeting, Estes Park, CO.
- 2006 “The relative effects of Bt cotton, tillage strategy, and cover crop identity on above and below-ground arthropod communities.” Wickings, K.G. & M.D. Hunter. Annual meeting of the Entomological Society of America, Indianapolis, IN.
- 2006: “Phenolics and tannins: Plant chemical defenses vary seasonally and with altitude in striped maple, *Acer pensylvanicum*.” Joyce, B.L., C.B. Zehnder & M.D. Hunter. Southeastern Ecology and Evolution Conference.
- 2006 “Effects of maternal age, density and host plant species of vital rates of *Aphis nerii*, the milkweed-oleander aphid.” Parris, M.A., C.B. Zehnder & M.D. Hunter. Southeastern Ecology and Evolution Conference.
- 2006 “Effects of an elevational gradient and seasonal changes on striped maple (*Acer pensylvanicum*) leaf chemistry.” Egetter, D.J., C.B. Zehnder & M.D. Hunter. Southeastern Ecology and Evolution Conference.
- 2005: “Understanding factors that allow biodiversity to evolve and to persist.” Plenary Speaker, National Academy of Sciences, Irvine, CA.
- 2005 “Insect population dynamics meets ecosystem ecology: Lessons for ecological sustainability.” Colloquium at the University of Michigan.
- 2005 “Insect population dynamics meets ecosystem ecology: Lessons for ecological sustainability.” Colloquium at the University of Maryland.
- 2005 “Linking population dynamics and ecosystem ecology.” Colloquium at Virginia Polytechnic Institute and State University, Blacksburg, Virginia.
- 2005 “A comparison of maternal effects and current environment on vital rates of *Aphis nerii*, the milkweed-oleander aphid.” Zehnder, C.B. and M.D. Hunter. Annual meeting of the Ecological Society of America, Montreal, Quebec.
- 2005 “Effects of leaf litter species diversity on decomposition in a forested watershed in the southern Appalachians, USA.” Kominoski, J.S., B.A. Ball, C.M. Pringle, M.D. Hunter,

- and D.C. Coleman. Annual Meeting of the North American Benthological Society, New Orleans, Louisiana.
- 2005 “Effects of leaf litter species diversity on decomposition in a forested watershed in the southern Appalachians, USA.” Ball, B.A., J.S. Kominoski, M.D. Hunter, C.M. Pringle, and D.C. Coleman. Annual Meeting of the Soil Ecology Society, Argonne National Laboratory, Illinois.
- 2005 “Effects of leaf litter species diversity on decomposition in a forested watershed in the southern Appalachians, USA.” Ball, B.A., J.S. Kominoski, M.D. Hunter, C.M. Pringle, and D.C. Coleman. Southeastern Ecology and Evolution Conference, Athens, Georgia.
- 2005 “The effects of density and host plant species within and across generations on population dynamics of *Aphis nerii*, the milkweed-oleander aphid.” Zehnder, C.B. & M.D. Hunter. Southeastern Ecology & Evolution Conference.
- 2004 “Do aphid mothers matter? Maternal density effects in the milkweed-oleander aphid.” Zehnder, C.B. & M.D. Hunter. Southeastern Ecology & Evolution Conference.
- 2004 “The role of NEON in the development of theory in invasive species research.” Plenary Lecture and Panel Member, American Institute of Biological Sciences, Washington, DC.
- 2004 “An ecosystem-level perspective on root-herbivore interactions.” Panel Review Team, University of Reading, Reading, UK.
- 2004 “Insect population dynamics meets ecosystem ecology.” Colloquium at the University of Florida, Gainesville, Florida.
- 2004 “Interactions between insect herbivores and ecosystem processes.” Colloquium in the Department of Plant Biology, University of Georgia, Athens, Georgia.
- 2004 “Chemical ecology as the mediator of interactions between populations and ecosystems.” Pennsylvania State University, State College, Pennsylvania.
- 2004 “Linking population and ecosystem processes through plant foliar quality.” Colloquium at Appalachian State University, Boone, North Carolina.
- 2004 “Nitrogen and carbon inputs from canopy herbivores: Comparing outbreak and endemic levels of herbivory.” Reynolds, B.C. & M.D. Hunter. Annual meeting of the Ecological Society of America, Portland, Oregon.
- 2004 “Late-season insect herbivores use nitrogen recycled from early-season herbivore activity.” Frost, C.F. & M.D. Hunter. Annual meeting of the Ecological Society of America, Portland, Oregon.
- 2004 “Biochemistry intersects biogeochemistry: LTREB study of Bt toxin persistence and organic matter levels in a Georgia agroecosystem.” Coleman, D.C., M.D. Hunter, B. Simmons, & K. Wickings. Annual meeting of the Ecological Society of America, Portland, Oregon.
- 2004 “The effects of canopy herbivory on soil microarthropods in a tropical rainforest.” Rinker, H.B., S.J. Fonte, M.D. Lowman, T.D. Schowalter, & M.D. Hunter. Annual meeting of the Ecological Society of America, Portland, Oregon.
- 2003 “Insects, plants, populations, and ecosystems: complex interactions within ecological systems.” Colloquium at Oklahoma University, Norman, Oklahoma.
- 2003 “Population-ecosystem interactions in south eastern forests.” Colloquium at the School of Forest Resources, University of Georgia, Athens, Georgia.
- 2003 “Insects, plants, populations, and ecosystems: complex interactions within ecological systems.” Colloquium at Tulane University, New Orleans, Louisiana.
- 2003 “Insect outbreaks and forest nutrient dynamics: measuring effects and determining mechanisms.” Colloquium at Indiana University, Bloomington, Indiana.
- 2003 “Linking population-level and ecosystem-level processes: The role of plant phenolics.” Colloquium at the Archbold Biological Station, Lake Placid, Florida.
- 2003 “Effects of variation in plant quality on the interaction between an herbivore and its parasitoid.” Helms, S.E., S.J. Connelly & M.D. Hunter. Annual Meeting of the Ecological Society of America, Savannah, Georgia.

- 2003 "Foliar quality and herbivory as predictors of litter quality under elevated CO₂ conditions in a scrub-oak community." Hall, M.C., P. Stiling, D.C. Moon, & M.D. Hunter. Annual Meeting of the Ecological Society of America, Savannah, Georgia.
- 2003 "Canopy herbivory on red oaks increases soil respiration and soil carbon independent of herbivore-derived inputs." Frost, C.J. & M.D. Hunter. Annual Meeting of the Ecological Society of America, Savannah, Georgia.
- 2003 "Phenotypic diversity influences ecosystem functioning in the presence of another species." Madritch, M.D. & M.D. Hunter. Annual Meeting of the Ecological Society of America, Savannah, Georgia.
- 2002 "Global environmental change: The interface between population processes and ecosystem function." Annual Meeting of the National Institute for Global Environmental Change, Cape Canaveral, Florida.
- 2002 "Interactive effects of intraspecific litter diversity and nitrogen deposition on nutrient cycling." Madritch, M.D. and M.D. Hunter. Annual Meeting of the Ecological Society of America, Tucson, Arizona.
- 2002 "Cascades, indirect effects and interactions: terminology and the development of theory." Annual Meeting of the Ecological Society of America, Tucson, Arizona.
- 2002 "Decomposition of herbivore derived greenfall: The potential influence of phytophagous insects on soil processes." Fonte, S.J., M.D. Hunter, T.D. Schowalter, M.D. Lowman, and H.B. Rinker. Annual Meeting of the Ecological Society of America, Tucson, Arizona.
- 2002 "Nutrients from the canopy: Variations in frass carbon/nitrogen ratios along an elevation gradient in western North Carolina." Reynolds, B.C. and M.D. Hunter. Third International Canopy Conference, Cairns, Australia.
- 2002 "Insect population dynamics in a changing world. Some simple models and predictions." Plenary Lecture at the Workshop on Trophic Interactions in a Changing World." Texel, The Netherlands.
- 2002 "Phenolics, insects, and ecosystem processes." Colloquium at the Institute of Ecosystem Studies, Millbrook, New York.
- 2001 "Feedback loops and forest insect population dynamics." Royal Entomological Society, Aberdeen, Scotland."
- 2001 "From molecules to ecosystems: complex feedback loops among plants, herbivores and the environment." Center of Ecology and Hydrology, Banchory, Scotland.
- 2001 "Decomposition and nutrient cycling in a changing environment: Is genetic diversity redundant to ecosystem function?" Madritch, M.D. and M.D. Hunter. Annual Meeting of the Ecological Society of America, Madison, Wisconsin.
- 2001 "From molecules to ecosystems: complex feedback loops among plants, herbivores and the environment." Gordon Conference on Plant-Herbivore Interactions, Ventura, California.
- 2001 "Canopy herbivory and soil processes in temperate and tropical forests." Lowman, M.D., Rinker, H.B., Hunter, M.D., Schowalter, T.D., and Fonte, S.J. International Conference on Tropical Ecosystems: Structure, Diversity, and Human Welfare, Bangalore, India.
- 2000 "Effects of plant quality on herbivore population dynamics: density-dependent, density-independent, and inverse density-dependent effects." Annual Meeting of the Ecological Society of America, Snowbird, Utah.
- 2000 "Decomposition and nutrient cycling in a changing environment: Is genetic diversity redundant to ecosystem function?" Madritch, M.D. and M.D. Hunter. Annual Meeting of the Ecological Society of America, Snowbird, Utah.
- 2000 "Effects of canopy herbivory on soil respiration." Reynolds, B.C. and M.D. Hunter. Annual Meeting of the Ecological Society of America, Snowbird, Utah.
- 2000 "Insect frass and forest floor processes: If shit happens, what happens to shit?" Long-Term Ecological Research Site All Scientists Meeting, Snowbird, Utah.
- 2000 "Effects of canopy herbivory on soil respiration." Reynolds, B.C. and M.D. Hunter. Long-Term Ecological Research Site All Scientists Meeting, Snowbird, Utah.
- 2000 "The role of fauna in leaf decomposition across gradients in litter quality and habitat type: A cross site comparison." Powell, N, M.D. Hunter, C.M Pringle, D.C. Coleman, S. Adl,

- and E. Greathouse. Long-Term Ecological Research Site All Scientists Meeting, Snowbird, Utah.
- 2000 "Consequences of variation in phenolic compounds: Preference and performance of herbivores on turkey oak." Klaper, R.D. and M.D. Hunter. Annual Meeting of the Entomological Society of America, Montreal, Canada.
- 2000 "Feedback loops in communities." Colloquium at Northern Arizona University, Flagstaff, Arizona.
- 2000 "Feedback loops between phytophagous insects and their host plants." Colloquium at the University of Auburn, Auburn, Alabama.
- 2000 "Sources of variation in plant quality and their consequences for herbivore population dynamics." Colloquium at Humboldt State University, Arcata, California.
- 1999 "Towards an ecology without boundaries: From molecules to ecosystems." Eminent Ecologist Lecture Series, Annual Invitee. Kellogg Biological Station, Michigan.
- 1999 "Causes and consequences of variation in plant chemistry in ecological systems." Eminent Ecologist Lecture Series, Annual Invitee. Kellogg Biological Station, Michigan.
- 1999 "The role of host plant quality in the population dynamics of insect herbivores." Graduate Student Annual Invitee at the University of Kentucky, Lexington, Kentucky.
- 1999 "Variation in plant quality and the population ecology of herbivores." Colloquium at Western Carolina University, Cullowhee, North Carolina.
- 1999 "Causes and consequences of variation in plant chemistry in non-marine systems." Colloquium at Georgia Institute of Technology, Atlanta, Georgia.
- 1999 "Heterogeneity in plant quality and its impact on the population ecology of insect herbivores." Annual Meeting of the British Ecological Society, Brighton, England.
- 1999 "Estimation of heritability of secondary chemistry in a natural population of *Quercus laevis* using molecular markers." Klaper, R.D., M.D. Hunter, and T.A. Mousseau. Annual Meeting of the Society for the Study of Evolution, Madison, Wisconsin.
- 1999 "Environmental effects on variation in defensive chemistry of the turkey oak, *Quercus laevis*." Klaper, R.D. and M.D. Hunter. Annual Meeting of the Ecological Society of America, Spokane, Washington.
- 1999 "Litter decomposition and microarthropod abundance along an elevation gradient in western North Carolina." Reynolds, B.C., M.D. Hunter, and D.A. Crossley, Jr. Annual Meeting of the Ecological Society of America, Spokane, Washington.
- 1999 "Aboveground forest biomass, net primary productivity, and nitrogen content across a complex gradient at Coweeta Hydrologic Laboratory, North Carolina. Kloeppel, B.D., N.R. Hayden, J.S. Clark, M.D. Hunter, and B.C. Reynolds. Annual Meeting of the Ecological Society of America, Spokane, Washington.
- 1999 "A multifactorial study of population regulation in the mottled sculpin (*Cottus bairdi*). Grossman, G.D., J.T. Petty, R.E. Ratajczak Jr., and M.D. Hunter. Annual Meeting of the American Society of Ichthyologists and Herpetologists, State College, Pennsylvania.
- 1998 "The chemistry of plant-insect interactions: What can we use in IPM?" Annual Meeting of the Entomological Society of Canada, Quebec, PQ, Canada.
- 1998 "Canopy-forest floor interactions in theory and practice." Mark D. Hunter and D.A. Crossley, Jr. Forest Canopies 1998: Global Perspectives, Sarasota, Florida.
- 1998 "Oak chemistry, hurricane damage, and defoliation by insect herbivores." Mark D. Hunter and Rebecca E. Forkner. Annual Meeting of the Ecological Society of America, Baltimore, Maryland.
- 1998 "Environmental heterogeneity and the relative importance of plant quality and predation to oak herbivores." Rebecca E. Forkner and Mark D. Hunter. Annual Meeting of the Ecological Society of America, Baltimore, Maryland.

- 1998 "Hurricane damage influences foliar polyphenolics and subsequent herbivory on surviving trees." Annual Meeting of the Coweeta Long-Term Ecological Research Site Program, University of Georgia.
- 1998 "Decomposition and microarthropod assemblages along an elevation gradient." Kitti Reynolds, D.A. Crossley Jr., and Mark D. Hunter. Annual Meeting of the Coweeta Long-Term Ecological Research Site Program, University of Georgia.
- 1998 "Defense versus reproduction in *Sanguinaria canadensis* (Papaveraceae) along and altitudinal gradient." Alissa K. Salmore and Mark D. Hunter. Annual Meeting of the Coweeta Long-Term Ecological Research Site Program, University of Georgia.
- 1998 "Measuring the effects of plant quality on ecological interactions in space and time." Colloquium at the Joseph Jones Research Center, Ichauway, Georgia.
- 1998 "Plant quality as a template for ecological interactions." Botany Department, University of Georgia.
- 1997 "Causes and consequences of variation in foliar phenolics among individual oak trees." Mark D. Hunter and Rebecca E. Forkner. Conference on Diversity and Adaptation in Oak Species, Pennsylvania State University, Pennsylvania.
- 1997 "Genetic versus environmental effects on the phenolic chemistry of turkey oak, *Quercus laevis*." Rebecca D. Klaper and Mark D. Hunter. Conference on Diversity and Adaptation in Oak Species, Pennsylvania State University, Pennsylvania.
- 1997 "Estimating the relative roles of top-down and bottom-up forces on insect herbivore populations: A classic study re-visited." Annual Meeting of the Ecological Society of America, Albuquerque, New Mexico.
- 1997 "Canopy arthropod effects on soil decomposition processes along an elevation gradient at Coweeta." Barbera C. Reynolds and Mark D. Hunter. Annual Meeting of the Ecological Society of America, Albuquerque, New Mexico.
- 1997 "Why plants matter to the population dynamics of insect herbivores." Colloquium at the University of Maryland, College Park, Maryland.
- 1997 "Plant quality and herbivore population dynamics." Colloquium at the Savannah River Ecology Laboratory, Aiken, SC.
- 1997 "Causes and consequences of variation in levels of insect herbivory at the Coweeta Hydrologic Laboratory." Annual Meeting of the Coweeta Long-Term Ecological Research Site, Georgia State Botanical Gardens, Athens, GA.
- 1996 "Incorporating variation in plant chemistry into a spatially-explicit ecology of phytophagous insects." Mark D. Hunter and Rebecca D. Klaper. Reunion Internacional de Ecologia Quimica. Oaxtepec, Mexico.
- 1996 "Plant phenotype and the population ecology of herbivores." Colloquium at Vanderbilt University, Nashville, Tennessee.
- 1996 "The relative roles of top-down, bottom-up, and lateral forces in the population ecology of forest folivores." The Second Forest Insect Workshop, San Antonio, Texas.
- 1996 "Phyto-centricity and the importance of plant phenotype in ecological systems." Botany Department, University of Georgia.
- 1995 (Meeting Convenor) "Incorporating variation in plant chemistry into a spatially-explicit ecology of phytophagous insects." The 18th Royal Entomological Society Symposium, London, UK.
- 1995 "Does plant quality matter? Searching for effects on herbivore populations and communities in ecological time." Colloquium at the University of Chicago, Chicago, Illinois.
- 1994 "Impacts of disease on insect herbivore populations: need we know more?" Annual Meeting, Ecological Society of America, Knoxville, Tennessee.
- 1994 "The role of plant variability in the population and community ecology of herbivores." Colloquium at Harvard University, Cambridge, Massachusetts.
- 1994 "Artificial boundaries in ecology: Cascading effects of a molecular interaction from the individual to the landscape level of organization." Colloquium at the Institute of Ecosystem Studies, Millbrook, New York.

- 1994 "The Insect Drug Store: Foliage Chemistry Determines the Susceptibility of Forest Pests to their Pathogens." Colloquium at the University of New Brunswick.
- 1994 "Plant variability and herbivore community structure." Colloquium at St Andrews University, Scotland.
- 1993 "Complex ecological interactions and patterns of tree growth: Links between dendrochronology and herbivore population biology." Dendroecological workshop. Tree-growth disturbances: Their triggers and effects. Kuujuaaraapik, Canada.
- 1992 "Insect pathogens and forest pest population dynamics: Host plant quality is the key." XIX International Congress of Entomology, Beijing, China.
- 1992 "What is a pest?" Individuals, Populations and Patterns, University of East Anglia, Norwich, England.
- 1992 "The idiosyncrasies of induction: Host plant-specific chemical changes and guild-specific responses." Gordon Research Conference, Plant-Herbivore Interactions, Oxnard, California.
- 1991 "Defoliation-induced changes in leaf quality protect the gypsy moth from disease." Annual Meeting, Ecological Society of America, San Antonio, Texas.
- 1991 "Causes of foliage quality variation and the consequences for gypsy moth populations." J.C. Schultz, M.C. Rossiter, K.W. Kleiner, M.D. Hunter, M.A. Foster, H.M. Appel and M.D. Abrams. Annual Meeting, Ecological Society of America, San Antonio, Texas.
- 1991 "Induced Plant Defenses Breached? The influence of oak tannins on a nuclear polyhedrosis virus of the gypsy moth." II North American Tannin Conference, Houghton, Michigan.
- 1991 "Foliage quality variation and the consequences for gypsy moth populations." Colloquium at the University of South Carolina.
- 1990 "Interactions within herbivore communities mediated by the host plant: The keystone herbivore concept." V International Congress of Ecology, Yokohama, Japan.
- 1990 "The diversity of insect herbivores in the tropics: Patterns and processes." OTS Course, Costa Rica.
- 1989 "The effects of spring defoliation on the late-season phytophagous insect community of *Quercus robur* L." Population Dynamics of Forest Insects: Natural Environment Research Council's Institute of Terrestrial Ecology Symposium, Edinburgh.
- 1989 (Session Chair) "A reversal of competitive advantage between two species of phytophagous insect on *Quercus robur* L.: Don't get mad, get even!" Society for the Study of Evolution, University Park, PA.
- 1989 "Impact of pre-dose diet on gypsy moth susceptibility to a baculovirus." Ecological Society of America National Conference, San Antonio, Texas.

Media Coverage of Research

Coverage Includes: The Times of London, The BBC, National Public Radio/PRI, The National Geographic, The Kansas City Star, The Times-Picayune, CBS News, Fox News, CBC Radio, The Discovery Channel, The Athens-Banner Herald, The Guardian, Lingua Franca Magazine, NBC, The New Scientist, CNN, Earthwatch Radio, Austrian Public Radio, German Public Radio, Swiss Public Radio, The Dallas Morning News, The Business Standard, The LA Times, Science Podcast, Science Daily, and Nature World News.