

DR. CHRISTINE A. BAHLAI

RESEARCH ASSOCIATE, DEPARTMENT OF INTEGRATIVE BIOLOGY

MICHIGAN STATE UNIVERSITY

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EDUCATION

Ph.D.	School of Environmental Sciences	University of Guelph	2012
M.Sc.	Department of Environmental Biology	University of Guelph	2007
B.Sc.	Department of Physics	University of Guelph	2004

RESEARCH EXPERIENCE

2016-	Research Associate, Department of Integrative Biology, Michigan State University
2015-	Associate Scientist, Kellogg Biological Station Long Term Ecological Research project
2015-2016	Mozilla Fellow for Science
2012-2015	Research Associate, Department of Entomology, Michigan State University
2007-2012	Graduate research assistant, School of Environmental Sciences, University of Guelph
2010-2011	Species at Risk Consultant, Nature Conservancy of Canada.
2007	Research technician, Department of Plant Agriculture, Ridgetown College
2005-2007	Graduate research assistant, Department of Environmental Biology, University of Guelph

PUBLICATIONS

*mentored graduate student, **mentored undergraduate student

Published or in press

- 26) Fox, A.F, T.N. Kim, **C.A. Bahlai**, J.M. Woltz, C. Gratton, and D.A. Landis. **In press**. Cover crops have neutral effects on predator communities and biological control services in annual cellulosic bioenergy cropping systems. **Agriculture, Ecosystems and the Environment**.
- 25) Landis, D.A., N. Saidov, A. Jaliov, M. El Bouhssini, M. Kennelly, **C. Bahlai**, J.N. Landis, K. Maredia. **2016**. Demonstration of an Integrated Pest Management Program for Wheat in Tajikistan. **Journal of Integrated Pest Management**. DOI: <http://dx.doi.org/10.1093/jipm/pmw010>
- 24) **Bahlai, C.A.** and D.A. Landis. **2016**. Predicting plant attractiveness to pollinators with passive crowdsourcing. **Royal Society Open Science**. DOI: 10.1098/rsos.150677
- 23) *Carson, B.D., **C.A. Bahlai**, J. Gibbs, and D.A. Landis. **2016**. Flowering phenology influences bee community dynamics in old fields dominated by the invasive plant *Centaurea stoebe*. **Basic and Applied Ecology**. DOI:10.1016/j.baae.2016.04.004
- 22) M.J. Spasojevic, **C.A. Bahlai**, B.A. Bradley, B.J. Butterfield, M.N. Tuanmu, S. Sistla, R. Wiederholt, and K.N. Suding. **2016**. Scaling up the diversity-resilience relationship with trait databases and remote sensing data: the recovery of productivity after wildfire. **Global Change Biology**. DOI: 10.1111/gcb.13174
- 21) **Bahlai, C.A.**, W. van der Werf, M.E. O'Neal, L. Hemerik, and D.A. Landis. **2015**. Dual regime shifts in dynamics of an invasive predator are linked to the invasion and insecticidal control of its prey. **Ecological Applications**. <http://dx.doi.org/10.1890/14-2022.1>

- 20) **Bahlai, C.A.**, M. Colunga-Garcia, S.H. Gage, and D.A. Landis. **2015**. The role of exotic species in the decline of native ladybeetle populations: evidence from long-term monitoring. **Biological Invasions**. 17: 1005-1024. DOI: 10.1007/s10530-014-0772-4
- 19) *Carson, B.D., **C.A. Bahlai** and D. A. Landis. **2014**. Establishment, impacts, and current range of spotted knapweed (*Centaurea stoebe* ssp. *micranthos*) biological control insects in Michigan. **The Great Lakes Entomologist** 47:129-148.
- 18) *Safarzoda, S., **C.A. Bahlai**, A.F. Fox, and D.A. Landis. **2014**. The role of natural enemy foraging guilds in controlling cereal aphids in Michigan wheat. **PLOS ONE**: 10.1371/journal.pone.0114230
- 17) *Brunke, A.J., **C.A. Bahlai**, J. Klimaszewski, and R.H. Hallett. **2014**. Rove beetles (Coleoptera: Staphylinidae) in Ontario soybean agroecosystems: assemblage diversity, composition, seasonality and habitat use. **The Canadian Entomologist** 146:652-670. DOI 10.4039/tce.2014.19
- 16) *Lettow, M., L.A. Brudvig, **C.A. Bahlai** and D.A. Landis. **2014** Oak savanna management strategies and their differential effects on vegetative structure, understory light and flowering forbs. **Forest Ecology and Management** 329: 89-98.
- 15) **Bahlai, C.A.**, A.W. Schaafsma, D. Lagos, D. Voegtlin, J.L. Smith, J.A. Welsman, Y. Xue, C. DiFonzo, and R.H. Hallett. **2014**. Factors inducing migratory forms of soybean aphid and an examination of North American spatial dynamics of this species in the context of migratory behavior. **Agriculture and Forest Entomology** 16: 240-250.
- 14) Hallett, R., **C. Bahlai**, Y. Xue, and A. Schaafsma. **2014**. Incorporating natural enemy units into a dynamic action threshold for the soybean aphid, *Aphis glycines* (Hemiptera: Aphididae). **Pest Management Science** 70:879-888
- 13) **Bahlai, C.A.**, M. Colunga-Garcia, S.H. Gage, and D.A. Landis. **2013**. Long-term functional dynamics of an aphidophagous coccinellid community remain unchanged despite repeated invasions. **PLOS ONE** 8: e83407.
- 12) **Bahlai, C.A.**, R.M. Weiss and R.H. Hallett. **2013**. A mechanistic model for a tritrophic interaction involving soybean aphid, its host plants, and multiple natural enemies. **Ecological Modelling** 254:54-70.
- 11) *Brunke, A.J., **L. O'Keefe, **C. Bahlai**, M. Sears and R. Hallett. **2012**. Guilty by association: An evaluation of millipedes as pests of sweet potatoes and carrots. **Journal of Applied Entomology** 136: 772-780.
- 10) Xue, Y., **C. A. Bahlai**, A. Frewin, C. M. McCreary, L. E. Des Marteaux, A. W. Schaafsma and R. H. Hallett. **2012**. Intraguild predation of the aphid parasitoid *Aphelinus certus* by *Coccinella septempunctata* and *Harmonia axyridis*. **Biocontrol**. 57:627-634.
- 9) **Bahlai, C.A.**, Y. Xue, **C. McCreary, A.W. Schaafsma and R.H. Hallett. **2010**. Choosing organic pesticides over synthetic pesticides may not effectively mitigate environmental risk in soybeans. **PLOS ONE** 5(6): e11250. doi:10.1371/journal.pone.0011250.
- 8) **Bahlai, C.A.**, S. Sikkema, J. Newman, R.H. Hallett and A.W. Schaafsma. **2010**. Modeling distribution and abundance of soybean aphid in soybean fields using measurements from the surrounding landscape. **Environmental Entomology**. 39: 50-56.
- 7) **Bahlai, C.A.** and M.K. Sears. **2009**. Population dynamics of *Harmonia axyridis* and *Aphis glycines* in Niagara peninsula soybean fields and vineyards. **Journal of the Entomological Society of Ontario** 14: 27-39
- 6) **Brunke, A.J., **Bahlai, C.A.**, Sears, M.K. and R.H. Hallett. **2009**. Generalist predators (Coleoptera: Carabidae, Staphylinidae) associated with millipede populations in sweet potato and carrot fields, and implications for millipede management. **Environmental Entomology** 38: 1106-1116

- 5) Xue, Y., **Bahlai, C.A.**, Frewin, A., Sears, M.K., Schaafsma, A.W. and R.H. Hallett. **2009**. Predation by *Coccinella septempunctata* and *Harmonia axyridis* (Coleoptera: Coccinellidae) on *Aphis glycines* (Homoptera: Aphididae). **Environmental Entomology** 38:708-714.
- 4) **Bahlai, C.A.**, J.A. Welsman, *E.C. Macleod, A. Schaafsma, R.H. Hallett and M.K. Sears. **2008**. The role of visual and olfactory cues from agricultural hedgerows in the foraging behaviour of *Harmonia axyridis* (Coleoptera: Coccinellidae). **Environmental Entomology** 37: 973-979.
- 3) **Bahlai, C.A.**, J.A. Welsman, A. Schaafsma and M.K. Sears. **2007**. Development of the soybean aphid on its primary host *Rhamnus cathartica* L. **Environmental Entomology** 36: 998-1006.
- 2) Welsman, J.A., **C.A. Bahlai**, M. K. Sears, and A. Schaafsma. **2007**. Decline of soybean aphid (Homoptera: Aphididae) egg populations from autumn to spring on the primary host, *Rhamnus cathartica*. **Environmental Entomology** 36: 541-548.
- 1) **Bahlai, C.A.**, S.A. Goodfellow, D.E. Stanley-Horn and R.H. Hallett. **2006**. Endoparasitoid assemblage of the pea leafminer, *Liriomyza huidobrensis* (Diptera: Agromyzidae), an exotic vegetable pest in Southern Ontario. **Environmental Entomology** 35: 351-357.

In review

- *Davidson-Lowe, E., *B. Eshchanov, *S. Hermann, *A. Myers, *L. Rowe, *S. Xue, and C.A. Bahlai. Thermally moderated firefly activity is delayed by precipitation extremes. Submitted to **Royal Society Open Science**. Preprint available: <http://dx.doi.org/10.1101/074633>
- *Lettow, M.C., L.A. Brudvig, **C.A. Bahlai**, J. Gibbs, R. Jean, and D.A. Landis. Bee community responses to a gradient of oak savanna restoration. Submitted to **Restoration Ecology**.
- *McCreary, C.M., **C.A. Bahlai**, A.W. Schaafsma, and R.H. Hallett. Temperature-dependent development and degree day requirements of bean leaf beetle, *Cerotoma trifurcata*, under constant temperature regimes. In revision at **Environmental Entomology**.

Other contributions

- Pulfer, T.L., **C. Bahlai** and L. Mousseau. **2011**. Recovery strategy for Laura's Clubtail (*Stylurus laurae*) in Ontario. Ontario Recovery Strategy Series. Ontario Ministry of Natural Resources, Peterborough, Ontario. v + 23 pp. (**peer reviewed**)
- Hallett, R. T. Baute and **C. Bahlai**. **2011**. Aphid Advisor app for the Blackberry smartphones. Available online: <http://www.aphidapp.com/about.aspx>
- Farrell, T., C. Copeland and **C. Bahlai**. **2010**. Recovery strategy for the Northern Barrens Tiger Beetle (*Cicindela patruela*) in Ontario. Ontario Recovery Strategy Series. Ontario Ministry of Natural Resources, Peterborough, Ontario. vi + 17 pp. (**peer reviewed**)
- Hallett, R. H., Heal, J. D. and **Bahlai, C.A.** **2003**. Relative efficacy of synthetic insecticides and nematodes for control of pea leafminer on celery, 2003. 2003 Pest Management and Research Report, 2003 Growing Season. Agriculture and Agri-Food Canada. pp 28-29

FELLOWSHIPS AND GRANTS

- "Mozilla Fellow for Science"** Mozilla Foundation, supported by the Leona M. and Harry B. Helmsley Charitable Trust. **2015**. \$60,000 plus travel and childcare allowances.
- "Exploiting the landscape of fear as an insect control tactic."** **C. Bahlai**, D. Landis and Z. Szendrei. SEED grant, Project GREEN (Generating Research and Extension to meet Economic and Environmental Needs), MSU AgBioResearch. **2015**, \$37,900

“Laura’s Clubtail draft recovery strategy” T. Pulfer, **C. Bahlai** and L. Mousseau. Research grant from the Ontario Ministry of Natural Resources. **2010**, CAD\$6,132.

“Northern Barrens Tiger Beetle draft recovery strategy” T. Farrell, **C. Bahlai** and C. Copeland. Research grant from the Ontario Ministry of Natural Resources. **2010**, CAD\$6,132.

“Biotic and abiotic factors influencing distribution and abundance of soybean aphid, an introduced pest” Fellowship from Japan Society for Promotion of Science/ Natural Sciences and Engineering Research Council of Canada **2010**, ¥692,500 + CAD\$3000 (*declined for medical reasons preventing travel*)

“Sustainable management of the soybean aphid” Fellowship from Natural Sciences and Engineering Council of Canada: **2008**. CAD\$63,000

TEACHING EXPERIENCE

2016 **Instructor, Open Science and Reproducible Research.** This is a completely novel seminar course designed to expose graduate students to reproducible research tools, techniques and philosophy. **Enrollment: 6 graduate students**

2013 **Co-instructor, Biological Control.** Graduate level theory and practice of biological control. Department of Entomology. Michigan State University. **Enrollment ~15 students**

2009-2010 **Course Consultant:** Developed teaching materials for web-based senior environmental sciences courses. School of Environmental Sciences, University of Guelph.

2007-2009 **Instructor, Natural Chemicals in the Environment.** Senior undergraduate chemical ecology course delivered via online learning format. Department of Environmental Biology, University of Guelph. **Enrollment ~100-125 students per semester**

Teaching assistant

Insect Diversity and Biology. 2006, 2007.

Natural Chemicals in the Environment. 2005, 2006, 2007.

Food Production and the Environment. 2006, 2007.

Insects and Weed Pests of Turf. 2005, 2006.

Applied Entomology. 2006.

Workshops taught

Software Carpentry/Data Carpentry

MSU BEACON Center. 2014

University of Michigan Women in Science. 2015

Kellogg Biological Station 2016

Guest lecturer

Agricultural Ecology. 2015.

Plant Health and the Environment. 2012

Insect Behaviour. 2010

Climate Change Ecology. 2008, 2009

Biology of Plant Pests. 2006.

MENTORSHIP EXPERIENCE

Graduate students

Andrew Myers. PhD. **Expected completion 2020.**

Sara Hermann. PhD. **Expected completion 2020.**

Sara’s research was partially supported by my GREEN grant.

Marissa Schuh. MS. **2016.**

Shahlo Safarzoda. MS. **2014**.
Brendan Carson. MS. **2013**.
Mitchell Lettow. MS. **2013**.
Cara McCreary. MSc. **2013**.
Adam Brunke. MSc. **2009**

Undergraduate students

Jessica Kalin. **Supervisor**. BS Honors thesis. **2016**.

Niamh Wall. **Co-supervisor**. BBRM Honours thesis. **2012**.
Cara McCreary (non-degree student) **2010**.
Emily McLeod BSc. **2007**.
Liane O'Keefe. BSc. **2006**.
Adam Brunke. BSc. **2006**.

PRESENTATIONS

Invited presentations

- 2016** Mozfest- The Mozilla Festival. Ravensbourne, London, United Kingdom
Ignite Symposium: Hacking Ecology 2.0. 101st Meeting of the Ecological Society of America. Fort Lauderdale, FL.
Open science symposium: iHub DATA JAM. Nairobi, Kenya.
Site representative presentation, The Long Term Ecological Research Science Council meeting. Santa Barbara, CA.
Seminar, Michigan State University Department of Entomology, East Lansing, MI.
Lecture, The Working Open Workshop. Mozilla Science Lab, Berlin, Germany
- 2015** Symposium: What Are the Costs and Benefits for Neonicotinoid Seed Treatments in Field Crops? Entomological Society of America Annual meeting, Minneapolis, MN.
- 2014** Seminar, Louisiana State University, Department of Entomology, Baton Rouge, LA.
Seminar, University of California, Davis. Department of Entomology and Nematology, Davis, CA.
Seminar, University of Maryland College Park. Department of Entomology, College Park, MD.
Seminar, Auburn University, Department of Entomology and Plant Pathology, Auburn, AL.
- 2013** Kellogg Biological Station Long Term Ecological Research site review by National Science Foundation, Hickory Corners, MI.
- 2012** Seminar, Michigan State University, Department of Entomology, East Lansing, MI.
- 2010** Southwest Agricultural Conference, Ridgetown, ON.
Ontario Agri-Business Association Eastern Ontario Meeting, Winchester, ON.
Eastern Ontario Crop Conference, Kemptville, ON.
- 2008** Symposium: invasive species. Joint Annual Meeting of the Entomological Societies of Canada and Ontario. Ottawa, ON.
Symposium: Grape research. Ontario Fruit and Vegetable Convention and Trade Show. St. Catharines, ON.
- 2005** Seminar. Toronto Entomological Association, Toronto, ON.

Contributed presentations

- 2016** International Long Term Ecological Research 1st Open Science Meeting, Skukuza, South Africa
- 2015** Long Term Ecological Research All Scientists Meeting. Estes Park, CO.
- 2009** Southwest Agricultural Conference, Ridgetown, ON.
- 2008** Annual Meeting of the Entomological Society of America. Reno, NV.
Ontario Pest Management Conference, Guelph, ON.
- 2006** Annual Meeting of the Entomological Society of America. Indianapolis, IN. **Winner of President's Prize**.
Ontario Pest Management Conference. Guelph, ON.
143rd Annual Meeting of the Entomological Society of Ontario. Guelph, ON.

- 2005** Annual Meeting of the Entomological Society of America. Fort Lauderdale, FL. **Honorable mention for President's Prize.**
Ontario Pest Management Conference. Guelph, ON. **Winner of CropLife Canada Award.**
142nd Annual Meeting of the Entomological Society of Ontario. Toronto, ON.
- 2004** 141st Annual Meeting of the Entomological Society of Ontario. St. Catharines, ON. **Winner of President's Prize.**

Contributed presentations (led by mentored students)

- 2016** Myers, A., **C.A. Bahlai** and D.A. Landis. Kellogg Biological Station All Scientist's meeting and Field Tour. Hickory Corners, MI.
- 2015** Hermann, S.L., **C.A. Bahlai**, and D.A. Landis. Long Term Ecological Research All Scientists Meeting. Estes Park, CO.
- 2009** Brunke, A.J., **C. A. Bahlai** and R. H. Hallett. Annual Meeting of the Entomological Society of America. Indianapolis, IN.
- 2008** Brunke, A.J., M.K. Sears, **C.A. Bahlai**, and R.H. Hallett. Annual Meeting of the Entomological Society of America. Reno, NV.
Brunke, A.J., **C.A. Bahlai**, M.K. Sears and R.H. Hallett. Ontario Pest Management Conference, Guelph, ON. **Winner of CropLife Canada Award.**
Brunke, A.J., M.K. Sears, **C.A. Bahlai**, and R.H. Hallett. Joint Annual Meeting of the Entomological Societies of Canada and Ontario. Ottawa, ON.

SCHOLARSHIPS AND AWARDS

Dean's Scholarship, Environmental Biology, University of Guelph, 2009, 2010
Graduate Student Teaching Award of Merit, North American Colleges and Teachers of Agriculture, 2008
Fred W. Presant Award, University of Guelph, 2008
Dean's Tri-Council Scholarship, University of Guelph, 2008
Ontario Graduate Scholarship, Government of Ontario, 2008 (*declined- could not be held concurrently with NSERC fellowship*).
Mary Edmunds Williams Scholarship, University of Guelph, 2007
Keefer Graduate Scholarship, University of Guelph, 2007
Entomological Society of America President's prize: First place, 2006
Entomological Society of America President's prize: Honorable mention, 2005
Crop Life Canada Award, 2005
Entomological Society of Ontario President's Prize, 2004

PROFESSIONAL SERVICE

REFEREE

Agriculture and Forest Entomology
Annals of the Entomological Society of America
Biocontrol Science and Technology
Biological Control
Biological Invasions
Ecological Modelling
Ecology
Ecology Letters
Entomologia Experimentalis et Applicata
Environmental Entomology

Environmental Modelling and Software
European Journal of Entomology
Global Change Biology
Global Ecology and Conservation
Journal of Applied Entomology
Journal of Asia-Pacific Entomology
Journal of Economic Entomology
Journal of Pest Science
Methods in Ecology and Evolution
Northeastern Naturalist

Oikos
PeerJ

PLOS One
Scientific Data

UNIVERSITY AND SOCIETY SERVICE

Michigan State University Department of Entomology Communications and Marketing Committee member, 2014-2015

International Network of Next-Generation Ecologists Open Science advisory panel member, 2014-present

Sigma Delta Epsilon Graduate Women in Science Reviewer, National Fellowships program, 2014

Ecological Society of America Scaling Up! Workshop for Early Career Scientists Participant (competitive: 30 of ~100 applicants were selected to attend). June 2013

Kellogg Biological Station Long Term Ecological Research Information Management Committee member, 2013-present

Entomological Society of Ontario Director 2012-2014, Public Education and Outreach Committee, Student Representative to Board 2005-2006

University of Guelph, School of Environmental Sciences Graduate Program Committee student representative, 2009-2012

Ontario Ministry of Agriculture, Food and Rural Affairs Southwest Crop Diagnostic Days speaker, 2007-2009

PROFESSIONAL AFFILIATIONS

North American Native Plant Society, 2013-

Kellogg Biological Station Long Term Ecological Research site 2012-

Entomological Society of Canada 2011-

International Organization for Biological Control, 2010-

Ecological Society of America, 2010-

Canadian Society for Ecology and Evolution, 2008-

Entomological Society of America, 2005-

Entomological Society of Ontario, 2004-

SELECTED MEDIA COVERAGE

Science Magazine "How climate change may affect fireflies" by Elizabeth Pennisi

<http://www.sciencemag.org/news/2016/09/how-climate-change-may-affect-fireflies>

The Economist "Your holiday snaps can have scientific uses" by Matt Kaplan

<http://www.economist.com/news/science-and-technology/21700355-would-you-spend-10000-smartphone-tom-standage-and-anne-mcelvoy-visit>

Canadian Science Publishing "Women in Science Series: Dr. Christie Bahlai" by Sarah Boon

<http://www.cdnsiencepub.com/blog/women-in-science-series-dr-christie-bahlai.aspx>

Nature "My digital toolbox: Ecologist Christie Bahlai talks data hygiene" by Sylvia Tippman

<http://www.nature.com/news/my-digital-toolbox-ecologist-christie-bahlai-talks-data-hygiene-1.15896>