

Gordon Fitch

Curriculum vitae

Assistant Professor
Department of Biology
York University
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EDUCATION

University of Michigan

Ph.D., Ecology and Evolutionary Biology
M.S., Ecology and Evolutionary Biology

Ann Arbor, MI
August 2021
May 2015

Brown University

B.A., Biology
Honors: cum Laude

Providence, RI
May 2007

PUBLICATIONS

Published peer-reviewed articles

Vaidya C*, Fitch G*, Dominguez Martinez GH, Oana AM†, Vandermeer J. 2023. Management practices and seasonality affect stingless bee colony growth, foraging activity, and pollen diet in coffee agroecosystems. *Agriculture, Ecosystems and Environment* 353:108552.

*Shared first authorship; †Undergraduate mentee.

Fitch G, Gonzalez J†, Oana AM†, Oliver M†, Vandermeer JH. 2022. Integrating interactions for pollination and for abiotic resources to understand neighbor effects on a mass-blooming crop in a complex agroforest. *Biotropica* 54 (1226-1237). †Undergraduate mentee.

Fitch G, Figueroa LL, Koch H, Stevenson PC, Adler LS. 2022. Understanding effects of floral products on bee parasites: mechanisms, synergism, and ecological complexity. *International Journal for Parasitology – Parasites and Wildlife* 17 (244-256).

Fitch G, Vandermeer J. 2021. Can conflicting selection from pollinators and nectar-robbing antagonists drive adaptive pollen limitation? A conceptual model and empirical test. *The American Naturalist* 198:5 (576-589).

Fitch G*, Vaidya C*. 2021. Roads pose a significant barrier to bee movement, mediated by road size, traffic, and bee identity. *Journal of Applied Ecology* 58:6 (1177-1186). *Shared first authorship.

- Featured in [Popular Science](#), [Academic Times](#), the [Applied Ecologist](#) blog, and [Issues in the Environment](#) on [WEMU News](#).

Fitch G, Vandermeer J. 2021. Changes in partner traits, more than partner densities, drive heterogeneity in interaction intensity between a flowering plant and its nectar robbers across habitats. *Basic and Applied Ecology* 53 (1-11).

Fitch G, Vandermeer J. 2020. Light availability influences the intensity of nectar robbery and its effects on reproduction in a tropical understory shrub via multiple pathways. *American Journal of Botany* 107:11 (1-10).

- Featured on [BotanyOne](#) blog.

Fitch G*, Wilson CJ*, Glaum P, Vaidya C, Simao M-C, Jamieson MA. 2019. Does urbanization favor exotic bee species? Implications for the conservation of native bees in cities. *Biology Letters* 15 (20190574). *Shared first authorship.

Vandermeer J, [...] **Fitch G**, [...] Perfecto I. 2019. The community ecology of herbivore regulation in an agroecosystem: lessons from complex systems. *BioScience* 69:12 (974-995).

Fitch G*, Glaum P*, Simao M-C*, Vaidya C*, Iuliano B, Matthijs J, Perfecto I. 2019. Changes in adult sex ratio in wild bee communities are linked to urbanization. *Scientific Reports* 9:3767 (1-10). *Shared first authorship.

- *Sci Rep* Top 100 ecology article for 2019; featured in: [ScienceDaily](#); [Michigan Radio NPR](#); Issues in the Environment, WEMU News; Michigan News.

Fitch G. 2017. Urbanization-mediated context dependence in the effect of floral neighborhood on pollinator visitation. *Oecologia* 185:4 (713-723).

Glaum, P, Simao M-C, Vaidya C, **Fitch G**, Iuliano B. 2017. Big city *Bombus*: using natural history and land-use history to find significant environmental drivers in bumble-bee declines in urban development. *Royal Society Open Science* 4:5 (e170156).

- Featured in: [PBS NewsHour](#); ScienceDaily; Michigan News.

Published book chapters

Ong TW, **Fitch G**. 2020. How to study the ecology of food in the city: an overview of natural science methodologies. In: *Urban Agroecology: Interdisciplinary Approaches to Understand the Science, Practice, and Movement*, Cohen H and Egerer MH, eds. Boca Raton, Florida: CRC Press.

Submitted, under review, or in revisions

Perfecto I, [...] **Fitch G**, [...] Vandermeer J. Zoonosis and the agroecological matrix. In revisions, *One Earth*.

PRESENTATIONS

2023 Do bumble bees self-medicate? Infection-induced changes in foraging preferences and consequences for pollination. Contributed poster, International Conference on Pollinator Biology, Health and Policy, State College, PA.

2022 Why didn't the bee cross the road?: The influence of urbanization on pollinator movement. Invited talk, Protecting Pollinators in Urban Landscapes conference, Athens, GA.

Management practices affect stingless bee colony growth, foraging activity, and pollen diet in coffee agroecosystems. Contributed talk, Entomological Society of America annual meeting, Montreal QC, Canada.

Suburbs as 'natural experiment': understanding how socioecological correlates of urbanization affect species interactions. Contributed poster, Integrating society, ecology, evolution, and plasticity to advance urban evolutionary ecology (SEEP) workshop, Arizona State University, Tempe AZ.

Land use, disease, and disruption: Effects of environmental stressors on bee-plant interactions. Invited seminar, Department of Biology, University of Massachusetts Lowell, Lowell MA.

Effects of environmental stressors on bee-plant interactions. Invited seminar, Department of Biology, York University, Toronto ON, Canada.

2019 What are the drivers of habitat-based heterogeneity in nectar robbery by stingless bees (*Trigona* spp.)? Contributed talk, Entomological Society of America annual meeting, Saint Louis MO.

Do traits mediating both pollinator and nectar robber attraction respond plastically to nectar robbery in a pollen-limited iteroparous plant? Contributed talk, Ecological Society of America (ESA) annual meeting, Louisville KY.

Agriculture and the climate crisis. Guest lecture, Food, Energy, and Environmental Justice, University of Michigan, Ann Arbor MI.

2018 Can adaptive response to conflicting pressures from pollinators and antagonists help explain strong pollen limitation? Poster, Green Life Sciences Symposium, University of Michigan, Ann Arbor MI.

Conflicting selection by pollinators and nectar robbers on floral traits and its relationship to pollen limitation. Contributed talk, ESA annual meeting, New Orleans LA.

2017 Causes and consequences of spatial heterogeneity in nectar robbing intensity. Contributed talk, ESA annual meeting, Portland OR.

2016 Avian ecology. Guest lecture, Ornithology, University of Michigan, Ann Arbor MI.

2015 Does urbanization alter pollinator-mediated plant interactions? Contributed talk, ESA annual meeting, Baltimore MD.

2014 Problem areas in the study of plant-pollinator mutualisms. Guest lecture, Population and Community Ecology, University of Michigan, Ann Arbor MI.

GRANTS, AWARDS, AND FELLOWSHIPS

2021	NSF Postdoctoral Research Fellowship in Biology	\$138,000
	UM EEB Justice, Equity, Diversity & Inclusion Award	\$500
2020	UM Rackham Predoctoral Fellowship	\$47,047
	UM EEB Nancy Walls Award	\$1,890
2019	Helen Olson Brower Memorial Fellowship in Environmental Studies	\$11,700
	UM EEB Nancy Walls Award	\$2,272
	UM Matthaei Botanical Garden Winifred B. Chase Fellowship	\$1,000
2018	UM EEB Edwin Edwards Scholarship	\$11,564
	UM EEB Nancy Walls Award	\$1,765
	UM International Institute Rackham International Research Award	\$6,000
2017	UM EEB Nancy Walls Award	\$1,765
	UM Rackham Graduate Student Research Grant	\$1,500
2016	UM EEB Emma J. Cole Fellowship	\$1,105
2015	UM EEB Matthaei Botanical Garden Research Grant	\$1,500
2014	UM Rackham Graduate Student Research Grant	\$1,500
2007	Howard R. Swearer International Service-Research Fellowship	\$5,000

PROFESSIONAL EXPERIENCE: RESEARCH

2021–2023	NSF Postdoctoral Fellow, Rules of Life program University of Massachusetts–Amherst
	<ul style="list-style-type: none">• Project title: Parasitism-induced changes in host behavior across scales: linking molecular basis to community impacts
2016–2021	Researcher, Biodiversity and trophic interactions in coffee agroecosystems group University of Michigan
	<ul style="list-style-type: none">• Conducted research on effects of agricultural management practices on bee-plant interactions, including pollination and nectar robbery.• Research techniques included: pollen supplementation, reciprocal translocation, pollen deposition analysis, transect surveys
2014–2020	Researcher, Urban pollinator ecology group University of Michigan
	<ul style="list-style-type: none">• Conducted research on bee community composition and bee-plant interactions in urban community gardens and along roadways.• Research techniques included: pan trapping, aerial netting, vegetation surveys, bee specimen preparation, sentinel plant observations, use of pollen analogs.
2013	Black-capped Vireo Field Technician University of Washington/Fort Hood TX
	<ul style="list-style-type: none">• Conducted surveys, territory mapping, nest searching, and banding of Black-capped Vireos.

PROFESSIONAL EXPERIENCE: TEACHING

2020–2021	Graduate Student Instructional Consultant Center for Research on Learning and Teaching, University of Michigan
	<ul style="list-style-type: none">• Provided consultations for graduate student instructors on teaching, including practices to promote inclusivity, use of technology, and development of teaching philosophy statements.
2019	Graduate Student Instructor, BIOLOGY 101: Food, Energy, and Environmental Justice University of Michigan
	<ul style="list-style-type: none">• Led discussions based on popular science texts from a variety of sources, with an emphasis on developing critical thinking and argumentation.• Assisted with writing and grading of course assignments and exams.
2017–2018	Graduate Student Instructor, EEB 485: Population and Community Ecology University of Michigan
	<ul style="list-style-type: none">• Graduate-level course; led discussion of primary literature and simulation-based labs.• Wrote several labs covering core models in Population Ecology using R.• Assisted with grading and writing of course assignments and exams.
2016	Graduate Student Instructor, EEB 461: Ornithology University of Michigan
	<ul style="list-style-type: none">• Organized and co-led specimen-based labs for this new course.• Assisted in writing and grading exams and lab assessments.
2014–2015	Graduate Student Instructor, BIOLOGY 173: Introductory Biology Lab University of Michigan
	<ul style="list-style-type: none">• Led laboratory investigations of core topics in Biology.• Graded lab-based assignments and exams.

2013–2015 **Graduate Student Instructor, BIOLOGY 101: Food, Energy, and the Environment**
University of Michigan
• Led discussions based on popular science texts from a variety of sources, with an emphasis on developing critical thinking and argumentation.
• Assisted with writing and grading of course assignments and exams.

2010–2012 **Middle Grades Science Teacher** Learning Community Charter School, Central Falls, RI
• Taught four sections of 7th-8th grade science, using inquiry-based techniques.
• Topics covered included: Astronomy, Physics, Biology.

2004–2008 **Popular Education ESOL Facilitator** English for Action, Providence RI
• Taught participatory ESOL courses for adults using a Freirean popular education framework.

PROFESSIONAL SOCIETIES

2015– Ecological Society of America
2019– Entomological Society of America
2020– Botanical Society of America
2021– Association for Tropical Biology and Conservation

SERVICE AND OUTREACH

SERVICE

2018–2019 Graduate student representative, EEB Executive Committee, University of Michigan
2016–2018 Graduate Community Organizer, EEB department, University of Michigan

Reviewer for: *Agriculture Ecosystems and Environment*, *Arthropod-Plant Interactions*, *BioScience*, *Cities and the Environment*, *Ecological Entomology*, *Ecological Informatics*, *Ecology*, *Ecology Letters*, *Ecosphere*, *Insectes Sociaux*, *Journal of Applied Ecology*, *Landscape Ecology*, *PLoS ONE*, *Scientific Reports*

MENTORING

2021-2022 Mentor, UMass-Amherst senior thesis. Mentee: Brooke Donzelli. Project title: Evaluating the effects of nectar metabolites from multiple *Monarda fistulosa* chemotypes on *Crithidia* infection in bumble bees.

2019-2020 Mentor, UM Undergraduate Research Opportunity Program (UROP).
Mentee: Maggie Oliver. Project title: Impacts of farm management and floral neighborhood on coffee pollination.

2019 Advisor, UM Program in the Environment Summer Internship program.
Advisee: John Gonzalez. Project title: Limnological analysis of Lincoln Pond ecosystem.

2018-2019 Mentor, UM Undergraduate Research Opportunity Program (UROP).
Mentees: John Gonzalez and Hunter Levine. Project title: Impacts of farm management and floral neighborhood on coffee pollination, presented at UROP symposium, April 2019.

2017–2018 Graduate Student Mentor for first-time Graduate Student Instructors, University of Michigan

2015–2016 Mentor, UM UROP program. Mentees: Samantha Toor and Janine Kerr. Project title: How is land use change impacting ground-nesting bees in southeast Michigan?

2014 Undergraduate field research assistants Tiffany Carey, Haley Evans, and Chris Saber, University of Michigan

OUTREACH

2022 Organizer and program lead, Eureka! All About Bees program, Girls, Inc., Holyoke MA

2017–2020 Organizing committee and program leader, Finca Irlanda EcoDía

2015–2019 Planning committee, Detroit Black Community Food Security Network BioBlitz, Detroit MI

- *Recipient of the University of Michigan EEB Department's inaugural Justice, Equity, Diversity and Inclusion Award, 2021*

2017 Facilitator, UM FEMMES Capstone

2014–2017 Site leader, Ann Arbor Natural Areas Protection Breeding Bird Survey

2014 Planning committee, Teach-In +50, University of Michigan

INVITED PUBLIC PRESENTATIONS

2021 The bees in your backyard: Effects of urbanization on wild bees. Washtenaw Community College, Ann Arbor, MI.

2019 Wild spring bees: identification and tips for best management practices. Michigan Professional Stewards Network, Ann Arbor MI.

Wild spring bees! Earth Day event, Washtenaw County Parks, Ann Arbor MI.

2018 Ann Arbor's diverse bees and how to help them. Ann Arbor Natural Areas Program Stewards' Circle, Ann Arbor MI.

Pedal to Pollinators bee walk. Washtenaw County Parks, Ann Arbor MI.

Wild bees of spring. Washtenaw County Parks, Ann Arbor MI.

2017 Bee hikes! Wild bee ID series. Washtenaw County Parks, Ann Arbor MI.

Wild bees in urban gardens. Oakland Audubon Society, Birmingham MI.

2015 Wild bees in your garden. Project Grow, Ann Arbor MI.

Wild bees in urban gardens. Greening of Detroit, Detroit MI.