

Amy M. Iler (McKinney)

Conservation Scientist
Chicago Botanic Garden
1000 Lake Cook Rd
Glencoe, IL 60022
847-835-6966
ailer@chicagobotanic.org
<http://amymarieiler.weebly.com>

ACADEMIC APPOINTMENTS

- 2016– Conservation Scientist (Assistant-level) Glencoe, IL
Chicago Botanic Garden
Adjunct Assistant Professor
Northwestern University
- 2014–2016. Marie Curie-Cofund Research Fellow Aarhus, Denmark
Aarhus Institute of Advanced Studies
Aarhus University
- 2010–2014. Postdoctoral Research Associate College Park, MD
University of Maryland & Crested Butte, CO
Rocky Mountain Biological Laboratory
- 2009-2010. Instructor of Record Columbus, OH
The Ohio State University
Organismal Diversity Laboratory

EDUCATION

- 2005–2010. Ph.D. Evolution, Ecology, & Organismal Biology (*summa cum laude*) Columbus, OH
The Ohio State University
Advisor: Dr. Karen Goodell
- 2001–2005. B.S. Conservation Science (*summa cum laude*) New Concord, OH
Muskingum College
Advisor: Dr. James L. Dooley

RESEARCH PROFILE

I am interested in how species interactions, population dynamics, and the timing of biological events respond to environmental change. My work so far has investigated the consequences of climate change and species invasions for plant-pollinator mutualisms and plant communities.

PUBLICATIONS

Compagnoni A, AJ Bibian, BM Ochocki, HS Rogers, E Schultz, ME Sneek, BD Elder, **AM Iler**, DW Inouye, H Jacquemyn and TEX Miller. (*in press*) The effect of demographic correlations on the stochastic population dynamics of perennial plants. *Ecological Monographs* DOI: 10.1002/ecm.1228

Li XE, LL Jiang, FD Meng, SP Wang, HS Niu, **AM Iler et al.** (2016) Responses of sequential and hierarchical phenological events to warming and cooling in alpine meadows. *Nature Communications* 7: 12489

Petry WK, JD Soule, **AM Iler**, A Chicas-Mosier, DW Inouye, TEX Miller, and KA Mooney. (2016) Sex-specific responses to climate change in plants alter population sex ratio and performance. *Science* 353: 69–71

Iler AM. Invited Book Review for *Ecology*. (2014) Post, Eric. 2013. Ecology of climate change: The importance of biotic interactions. Monographs in Population Biology Series, Number 52. Princeton University Press, Princeton, New Jersey. xxii + 373 p. \$59.50, ISBN: 978-0-691-14847-2

Iler AM and K Goodell. (2014) Relative floral density of an invasive plant affects pollinator foraging behavior on a native plant. *Journal of Pollination Ecology* 13: 174-183.

CaraDonna PJ*, **AM Iler***, and DW Inouye (2014) Shifts in flowering phenology reshape a subalpine plant community. *Proceedings of the National Academy of Sciences, USA* 111: 4916–4921 [*Science* Editor's Choice Article]

*Authors contributed equally, listed alphabetically



Iler AM, DW Inouye, TT Høye, AJ Miller-Rushing, LA Burkle, and E Johnston. (2013) Maintenance of temporal synchrony between syrphid flies and their floral resources despite differential phenological responses to climate. *Global Change Biology* 19: 2348–2359

Rafferty NE, PJ CaraDonna, LA Burkle, **AM Iler**, and JL Bronstein. (2013) Phenological overlap of interacting species in a changing climate: an assessment of available approaches. *Ecology & Evolution* 3: 3183–3193

Iler AM, TT Høye, DW Inouye, and NM Schmidt. (2013) Nonlinear phenological responses to climate: are species approaching their limits of phenological change? *Philosophical Transactions of the Royal Society B* 368: 20120489

Iler AM, TT Høye, DW Inouye, and NM Schmidt. (2013) Long-term trends mask variation in the direction and magnitude of short-term phenological shifts. *American Journal of Botany* 100: 1398–1406 [Invited contribution to special climate change issue.]

Iler AM and DW Inouye. (2013) Effects of climate change on mast-flowering cues in a clonal montane herb, *Veratrum tenuipetalum* (Melanthiaceae). *American Journal of Botany* 100: 519–525

McKinney AM, PJ CaraDonna, DW Inouye, B Barr, CD Bertelsen, and NM Waser. (2012) Asynchronous changes in phenology of migrating Broad-tailed Hummingbirds and their early-season nectar resources. *Ecology* 93: 1987–1993 [Cover article]

Anderson J, DW Inouye, **AM McKinney**, RI Colautti, and T Mitchell-Olds. (2012) Phenotypic plasticity and adaptive evolution contribute to advancing flowering phenology in response to climate change. *Proceedings of the Royal Society of London B* 279: 3843–3852



Inouye DW and **AM McKinney**. (2012) Community Phenology. In Oxford Bibliographies Online: Ecology. Ed. David Gibson. New York: Oxford University Press.

McKinney AM and K Goodell. (2011) Plant pollinator interactions between an invasive and native plant vary between sites with different flowering phenology. *Plant Ecology* 212: 1025–1035

McKinney AM and K Goodell. (2010) Shading by invasive shrub reduces seed production and pollinator services in a native herb. *Biological Invasions* 12: 2751–2763

Goodell K, **AM McKinney**, and CH Lin. (2010) Pollen limitation and local habitat-dependent pollinator interactions in the invasive shrub *Lonicera maackii*. *International Journal of Plant Sciences* 171: 63–72

GRANTS & AWARDS

2014-2016. Marie Curie COFUND Fellowship. Aarhus Institute of Advanced Studies. Aarhus University, Denmark. ‘Mechanisms underlying interspecific variation in flowering responses to climate change: the roles of abiotic drivers and phenotypic plasticity’. ~ **\$200,000**

2015. Rocky Mountain Biological Lab Research Fellowship. ‘Phenology, floral albedo, & soil moisture: a positive feedback between vegetation and climate change?’ **\$750**

2014. 10th Annual Early Career Scientists Symposium, University of Michigan. One of seven early career scientists nominated to present research and participate in a panel discussion on ‘Humans as a Force of Ecological and Evolutionary Change’.

2014-2019. NSF LTREB Renewal, DEB 1354104: ‘Drivers and consequences of phenological change at high altitudes’. Co-written with D. Inouye (PI), R. Irwin (co-PI), B. Inouye (co-PI), N. Underwood (co-PI), and B. Barr (co-PI). **\$450,000**

2009. Ray Travel Award. The Council of Graduate Students, The Ohio State University. **\$750**

2008. Alumni Grants for Graduate Student Research. The College of Arts and Sciences, The Ohio State University. ‘Effects of invasive plants on pollination of native plants’. **\$1000**

2008. Supplemental Research Grant. The Office of the Executive Dean of the Colleges of the Arts and Sciences, The Ohio State University. ‘The spatial scale of interactions between invasive and native plants for pollinators’. **\$200**

2007. Janice Carson Beatley Award for graduate student research. The Department of EEOB Beatley Fund, The Ohio State University. ‘Effects of invasive plants on pollination of native plants’. **\$800**

PRESENTATIONS

Invited Seminars

(18 since 2009)

2015. Ohio University
Chicago Botanic Garden
Dartmouth College
Ursinus College
Holden Arboretum
Utah State University
Purdue University
Rochester Institute of Technology
2014. University of Michigan: Early Career Scientist Symposium
Ohio State University Webinar (over 300 attendees)
Pace University
2013. Stanford University
USA National Phenology Network
2012. Rice University
Aarhus University (2)
Rocky Mountain Biological Laboratory
2009. Muskingum University

Invited Organized Session Talks

(7 since 2010)

- Iler AM** and Tsong R*. (2014) Consequences of intraspecific variation in flowering phenology: evidence for different flowering strategies. Joint British & French Ecological Society Conference. Lille, France *undergraduate author
- Iler, AM.** (2014) Intraspecific variation in plant reproductive schedules: individual flowering times & population-level flowering curves. Ecological Society of America Annual Conference. Sacramento, CA
- Iler, AM, TEX Miller, JL Williams, DW Inouye.** (2013) Positive and negative effects of climate change on the demography of a subalpine wildflower. Ecological Society of America Annual Conference. Minneapolis, MN
- Iler AM, DW Inouye, NM Schmidt, TT Høye.** (2012) Non-linear responses to climate: flowering phenology in snow-dominated environments. Tundra Change Conference. Aarhus, DK
- McKinney AM** et al. (2012) Asynchronous changes in phenology of migrating Broad-tailed Hummingbirds and their early-season nectar resources. Phenology & Conservation Symposium. Botanical Society of America Annual Conference. Columbus, OH
- Rafferty NE, PJ CaraDonna, Burkle LA, **McKinney AM**, Bronstein JB. (2012) The phenology of species interactions in a changing world: an assessment and illustration of approaches. Botanical Society of America Annual Conference. Columbus, OH

Goodell K and **AM McKinney**. (2010) Invasions and plant-pollinator interactions. Ohio Invasive Plants Research Conference. Columbus, OH

Contributed Session Talks

(20 since 2008)

Iler, AM, TEX Miller, JL Williams, and DW Inouye. (2015) Population decline in response to climate change-induced earlier flowering phenology. British Ecological Society Annual Meeting. Edinburgh, Scotland

Iler, AM. (2015) Temporal variation in pollen limitation in subalpine plants. Scandinavian Association for Pollination Ecology annual conference. Silkeborg, Denmark

Iler AM, TT Høye, DW Inouye, and NM Schmidt. (2015) Evidence of phenotypic plasticity and spurious relationships in responses of flowering phenology to climate change. Ecological Society of America Annual Conference. Baltimore, MD

Iler AM and TT Høye. (2015) The role of phenotypic plasticity in flowering phenology under climate change. OIKOS-DK Annual Meeting. Aarhus, Denmark

Compagnoni A, Bibian AJ, Elderd BD, **Iler AM** et al. (2014) The effect of temporal heterogeneity on the dynamics of plant populations. Ecological Society of America Annual Conference. Sacramento, CA

Inouye, DW, and **AM Iler**. (2013) Phenological and ecological consequences of changes in winter snowpack. Annual meeting of the Ecological Society of Germany, Austria, and Switzerland (GfÖ). Potsdam, Germany

CaraDonna, PJ, **AM Iler**, and DW Inouye. (2013) Shifts in flowering phenology, community-level patterns, and implications for pollinators. Ecological Society of America Annual Conference. Minneapolis, MN

Iler, AM and DW Inouye. (2012) Phenology of species interactions in response to climate change: two case studies of plant-pollinator interactions using long-term data. AGU 2012. San Francisco, CA

Inouye, DW and **AM Iler**. (2012) Phenological and ecological consequences of changes in winter snowpack. AGU 2012. San Francisco, CA

Iler, AM. (2012) Climate change and plant-pollinator temporal synchrony. Aarhus University Biodiversity Workshop. Femmøller, Denmark

Inouye, DW and **AM Iler**. (2012) Interactions of light snowpack, early snowmelt, late frost, flowering, pollinators, and seed-eating animals. MtnClim 2012. Estes Park, CO

McKinney AM and DW Inouye. (2012) Long-term flowering phenology shifts in a sub-alpine plant community. Ecological Society of America Annual Meeting. Portland, OR

Petry WK, **AM McKinney**, DW Inouye, KA Mooney, and JD Soule. (2012) Warming up to changing trait frequencies: Rapid, climate change-induced shifts in population sex ratios along an elevation gradient. Ecological Society of America Annual Meeting. Portland, OR

Inouye DW, **McKinney AM**, et al. (2012) Asynchronous changes in phenology of migrating Broad-tailed Hummingbirds and their early-season nectar resources. North American Ornithological Conference. Vancouver, BC

Inouye DW and **AM McKinney**. (2012) Long-term flowering phenology shifts in a sub-alpine plant community. Botanical Society of America Annual Conference. Columbus, OH

McKinney AM and DW Inouye. (2011) Flowering decisions in a clonal mast-flowering herb, *Veratrum tenuipetalum*. Ecological Society of America Annual Meeting. Austin, TX

McKinney AM (2010) Pollinator-mediated interactions between an invasive shrub and native herbs. Graduate Seminar. Rocky Mountain Biological Laboratory. Gothic, CO

Goodell K, CH Lin, **AM McKinney**, B Bloetscher, S Byrd, and N Cavender. (2010) Restored and remnant habitat patches influence bee and butterfly communities in adjacent degraded habitat. Ecological Society of America Annual Meeting. Pittsburgh, PA

McKinney AM and K Goodell. (2009) Facilitation of pollination of a native herb attenuates with distance from a plant invasion front. Ecological Society of America Annual Meeting. Albuquerque, NM

McKinney AM (2008) Pollinator-mediated interactions between *Lonicera maackii* and native herbaceous perennials. Buckeye Ecologists Symposium. Columbus, OH

Posters

(7 since 2005)

Inouye DW, **AM Iler**, AJ Miller-Rushing, LA Burkle, and E Johnston. (2012 & 2013) Increasing temporal synchrony between syrphid flies and their floral resources despite differential phenological responses to climate. Ecological Society of America Annual Meeting. Portland, OR; Annual meeting of the Ecological Society of Germany, Austria, and Switzerland (GfÖ). Potsdam, Germany

Goodell K, CH Lin, **AM McKinney**, S Byrd, N Cavender. (2011) Can floral diversity rescue pollination services to prairie forbs on reclaimed mined land? Ecological Society of America Annual Meeting. Austin, TX

McKinney AM (2008) Pollinator-mediated interactions between an invasive shrub, *Lonicera maackii*, and native herbaceous perennials. Ecological Society of America Annual Meeting and The Ecology and Evolution of Plant-Pollinator Interactions Conference. Milwaukee, WI

Goodell K and **AM Iler** (2007) Reproductive biology and habitat-dependent pollinator services in *Lonicera maackii*. Ohio Invasive Plants Research Conference. Delaware, OH

Iler AM (2005) A comparison of butterfly biodiversity between two habitats in an anthropogenically altered habitat in the Wilds, Cumberland, Ohio. Ohio Academy of Science Conference. Youngstown, OH

TEACHING & MENTORING

- *Mentor for Undergraduate Research, Rocky Mountain Biological Laboratory*
2014. Undergraduate Independent Research Project, Aaron Anderson. Experimental examination of early snowmelt-induced water stress in *Helianthella quinquenervis*: effects on demographic vital rates.
2014. Undergraduate Independent Research Project, Rachel Tsong. Temporal variation in pollen limitation in *Hydrophyllum fendleri* (Hydrophyllaceae) individuals.
2013. Undergraduate Independent Research Project, Brooke Palmer. Species-specific responses of plant traits to experimental warming.
2013. NSF Research Experience for Undergraduates Project co-mentor, James Cunningham. Temporal patterns in plant-pollinator interaction networks throughout a growing season.
2012. Undergraduate Independent Research Project, Samantha Bruce. Syrphid fly–flower associations along an elevation gradient in the Rocky Mountains.
2012. Undergraduate Independent Research Project co-mentor, Valerie Milici. Factors relating to nesting activity in Megachilid bees.
2011. Undergraduate Independent Research Project, Kari Spiegelhalter. The effects of climate change on plant traits and phenology of *Delphinium nuttallianum*.
- *Guest Lecturer, University of Copenhagen*
2016. Climate Change and Biodiversity
- *Guest Lecturer, Ursinus College*
2015. BIO 415 Ecology– Biogeochemical & Nutrient Cycles
- *Guest Lecturer, Rochester Institute of Technology*
2015. ENVS 301 Environmental Science Field Skills– Measuring primary production in montane ecosystems
- *Guest Lecturer, Rocky Mountain Biological Laboratory*
2014. University of Ottawa Subalpine Field Ecology Course – Effects of climate change on plant population dynamics
2013. Western State Colorado University Ecology Course field trip– Climate change and the phenology of species-interactions
2013. University of Ottawa Subalpine Field Ecology Course – Phenology and mast-flowering ecology
- *Guest Lecturer, University of Arizona*
2014. ECOL 467/567 Pollination Biology– Global change & plant-pollinator interactions
2013. ECOL 472/572 Plant Taxonomy– Co-lead a field botany overnight field trip
2012. ECOL/RNR 406 Conservation Biology– Guest lecture series on biological responses to climate change (two class periods and a plant biodiversity overnight field trip)
- *Instructor of Record, The Ohio State University*
2009-2010. EEOB 405.02 Organismal Diversity Laboratory (4)
- 2006–2010. *Graduate Teaching Associate, The Ohio State University*
EEOB 661 Conservation Biology
EEOB 410 Animal Form & Function (2)
EEOB 400 Evolution (2)
EEOB 370 Extinction (2)

EEOB 232 Human Physiology (4)
BIO 101 Introductory Biology for non-majors (2)

- *Undergraduate Teaching Associate, Muskingum College*
2004. CVSC 330 Conservation Biology

SERVICE

- *Editorial Board Member*
2015–2018. Associate editor for *Journal of Ecology*. Subject area: population & community ecology (phenology, invasive species, climate change, and pollination)
- *Manuscript Reviewer*
Total manuscripts reviewed: 41
2016. *Ecology Letters*, *Plant Ecology & Evolution*
2015. *Plant Ecology*, *Global Ecology & Biogeography*, *Functional Ecology*, *American Journal of Botany*, *Methods in Ecology & Evolution* (2)
2014. *Global Change Biology*, *PLOS ONE*, *Ecology* (2), *Oikos* (3), *New Phytologist*, *Annals of Botany*, *Current Zoology* (2), *Population Ecology* (2), *Functional Ecology*, *Biological Conservation*
2013. *Journal of Ecology* (2), *New Phytologist* (2), *Basic and Applied Ecology* (2), *American Journal of Botany*, *Functional Ecology*, *International Journal of Biometeorology* (2)
2012. *Proceedings of the Royal Society of London B*, *American Journal of Botany*, *Biological Invasions*, *Functional Ecology*
2011. *Ecology*, *Journal of Ecology*, *Diversity & Distributions*
2010. *International Journal of Plant Sciences*
- *Proposal Reviewer*
2016. External reviewer, USA National Science Foundation
2012-2013. USA National Science Foundation, REU Proposals, RMBL
2012. External reviewer, USA National Science Foundation
2011. Reviewer, *Encyclopedia of Life* Rubenstein Fellowship Proposals
2011. Review Panelist, USA National Science Foundation
- *Educational Outreach*
2015. ‘Friday’s in the Garden’ public lecture series, Cleveland Botanical Garden, OH
Led a visual design workshop for undergraduate/graduate students. RMBL, Gothic, CO
2014. Taught two public adult education programs: The importance of timing in ecology & Responses of plants and animals to climate change. RMBL, Gothic, CO
Educated 3rd graders about pollination as an ecosystem service for Sam Hughes Elementary School Earth Day program, Tucson, AZ
Taught outdoor education sessions on pollination & seed dispersal at Kid’s Nature Camp, RMBL, Gothic, CO
2013. Taught a biological responses to climate change workshop for the public during Geek Week at RMBL, Gothic, CO
Taught outdoor education sessions on pollination at Kid’s Nature Camp, RMBL, Gothic, CO
2012. Arizona Insect Festival Volunteer, Pollination Station, Univ. Arizona, Tucson, AZ
Taught outdoor education sessions on pollination at Kid’s Nature Camp, RMBL, Gothic, CO

- Co-taught a workshop titled 'The Heat is On' at an Expanding Your Horizons conference targeting middle school girls & science careers, Seattle Univ., Seattle, WA
2011. Taught a one-day field biology course to Crested Butte 7th grade class: stream properties station, RMBL, Gothic, CO
Led a wildflower walk for citizens during the Crested Butte Wildflower Festival, RMBL, Gothic, CO
Taught outdoor education sessions on pollination at Kid's Nature Camp, RMBL, Gothic, CO
2010. Girls Excelling in Math & Science (GEMS) club presentation on a career as a biologist, Daniel's Run Elementary School, Fairfax, VA
Led an invasion biology and bee natural history field trip for students enrolled in the Columbus College of Art & Design biology course
- *Professional Service*

2013. Invited member, Borderlands Restoration Initiative working group, Santa Rita Experimental Range

2012. Invited member to the 2nd annual National Phenology Network working group meeting

2011. Review committee for the Editor-in-Chief, Bulletin of the Ecological Society of America

2007–2009. Elected as Graduate Ecology & Evolution Students social committee chair, OSU

2006–2007. Elected as Graduate Ecology & Evolution Students fundraising chair, OSU

PROFESSIONAL DEVELOPMENT

2015. Visual Design Principles for Scientific Data Workshop. Led by Martin Krzywinski. Århus, DK
2014. Science Teaching Pedagogy Workshop. Led by Dr. Ed Prather. Univ. Arizona
2014. Science Teaching Discussion Group. Bi-monthly meetings. Univ. Arizona
2012. Science Communication Workshop. Led by Dr. Pat Kocielek. RMBL
2011. AIC and Model Selection: two-day statistical workshop. Led by Dr. David Anderson. Univ. Maryland
2010. Science: Becoming the Messenger workshop. One day NSF workshop on communicating science to the public. George Washington Univ.
2009. Teaching introductory biology seminar. Led by Dr. Diane Ebert-May. Ohio State Univ.
Suicide prevention training. Ohio State Univ. Center for Teaching & Learning

MEDIA COVERAGE OF RESEARCH

- *Printed news:* New York Times, Science News, Los Angeles Times, Earthweek: A Diary of the Planet, Seattle Conservation Magazine, & various local newspapers
- *Online news:* Time Magazine, The Christian Science Monitor, National Geographic News, New York Times (2), LA Times, Mother Jones/Climate Desk/Grist, Scientific American, NBC (USA National Broadcasting Corporation), Live Science, AAAS (American Association for the Advancement of Science) blog, Salon, Climate Wire, High Country News blog (The Goat), French Tribune, Europa Press
- *Press releases:* National Science Foundation (3), Univ. Maryland (2), Univ. Arizona
- *Radio coverage:* Public Radio International (USA), iSeeChange Climate Change Radio Report: featured in Yale's Forum on Climate & the Environment
- *Television coverage:* Local Seattle Television News coverage of the Urban Pollination Project