

Curriculum Vitae
NICOLE E. RAFFERTY

P.O. Box 646382 | Washington State University | Pullman, WA 99164
509.335.0453 | nicole.rafferty@wsu.edu | www.nicolerafferty.org

Education

- Ph.D. in Zoology (2011)
University of Wisconsin-Madison
Advisor: Anthony Ives
- M.S. in Zoology (2006)
University of Wisconsin-Madison
Advisor: Janette Boughman
- B.S. in Ecology, Evolution, and Conservation Biology (2003)
University of Washington
Advisor: Dee Boersma
magna cum laude, Distinction in Biology, Phi Beta Kappa

Professional Appointments

- 2016-present *Research Associate*
Department of Entomology
Washington State University
- 2015-2016 *Postdoctoral Fellow*
Department of Ecology and Evolutionary Biology
University of Toronto
Mentor: James Thomson
- 2011-2014 *NIH Fellow*
Postdoctoral Excellence in Research and Teaching Program
Department of Ecology and Evolutionary Biology; Center for Insect Science
University of Arizona
Mentor: Judith Bronstein
- 2013 *Adjunct Instructor* {overall rating: 4.8/5}
Biology 105: Environmental Biology (integrated lecture & lab)
Department of Biology
Pima Community College
- 2007-2011 *Teaching Assistant* {overall ratings: 4.1-4.6/5}
Biocore 302: Ecology, Evolution, and Genetics (writing-intensive lab & discussion)
Biocore 324: Organismal Biology (writing-intensive lab & discussion; 2 semesters)
Biology 152: Introductory Biology (writing-intensive lab)
Zoology 102: Animal Biology (lab; 3 semesters)
Zoology 260: Introductory Ecology (discussion)
University of Wisconsin

2004-2007 *NSF Fellow*
Graduate Research Fellowship Program
Department of Zoology
University of Wisconsin

Publications

* indicates mentored student

Published or In Press

Rafferty, N.E., C.D. Bertelsen, and J.L. Bronstein. In press. Later flowering is associated with a compressed flowering season and reduced reproductive output in an early season floral resource. Oikos.

Rafferty, N.E., P.J. CaraDonna, and J.L. Bronstein. 2015. Phenological shifts and the fate of mutualisms. Oikos 124:14-21.

- *Recommended by Faculty of 1000*
- *Journal cover photo (credit: David W. Inouye)*



Rafferty, N.E. 2013. Pollination Ecology. For Oxford Bibliographies in Ecology. Ed. D.J. Gibson. New York: Oxford University Press.

Rafferty, N.E., and A.R. Ives. 2013. Phylogenetic trait-based analyses of ecological networks. Ecology 94:2321-2333.

Rafferty, N.E., and N.M. Waser. 2013. Book review: *Evolution of Plant-Pollinator Relationships*, ed. S. Patiny. Quarterly Review of Biology 88:238-239.

Rafferty, N.E., P.J. CaraDonna, L.A. Burkle, A.M. Iler, and J.L. Bronstein. 2013. Phenological overlap of interacting species in a changing climate: an assessment of available approaches. Ecology and Evolution 3:3183-3193.

Scaven, V.L.*, and **N.E. Rafferty**. 2013. Physiological effects of climate warming on flowering plants and insect pollinators and potential consequences for their interactions. Current Zoology 59:418-426.

Rafferty, N.E., and A.R. Ives. 2012. Pollinator effectiveness varies with experimental shifts in flowering time. Ecology 93:803-814.

- *Featured on journal cover*

Gilman, R.T., N.S. Fabina, K.C. Abbott, and **N.E. Rafferty**. 2012. Evolution of plant-pollinator mutualisms in response to climate change. Evolutionary Applications 5:2-16.

- *Journal cover photo*
- *Popular press by Science Daily and Treehugger*



Rafferty, N.E., and A.R. Ives. 2011. Effects of experimental shifts in flowering phenology on plant-pollinator interactions. Ecology Letters 14:69-74.

- *Journal cover photo*



Rafferty, N.E., and J.W. Boughman. 2006. Olfactory mate recognition in a sympatric species pair of three-spined sticklebacks. Behavioral Ecology 17:965-970.

Rafferty, N.E., P.D. Boersma, and G.A. Rebstock. 2005. Intraclutch egg-size variation in Magellanic penguins. Condor 107:921-926.

Grants, Fellowships, and Awards

2015-2016 Research Grant, British Ecological Society (\$23,515)
2015-2016 Ecology and Evolutionary Biology Departmental Postdoctoral Fellowship, University of Toronto
2011-2014 Postdoctoral Excellence in Research and Teaching Fellowship, NIH
2011 John Jefferson Davis Travel Award, University of Wisconsin (\$400)
2010 John and Virginia Emlen Award for Outstanding Graduate Work in Zoology, University of Wisconsin (\$4,500)
2010 John Jefferson Davis Travel Award, University of Wisconsin (\$400)
2009 Carl A. Bunde Graduate Research Award, University of Wisconsin (\$4,500)
2004-2007 Graduate Research Fellowship, NSF
2006 Research Grant, American Society of Primatologists (\$1,445)
2006 Graduate Research Grant, University of Wisconsin (\$1,315)
2003 Research Apprenticeship Grant, Friday Harbor Marine Labs (\$3,000)
2002 Mary Gates Research Scholarship, University of Washington

Presentations

Rafferty, N.E. Forthcoming in 2016. Invited talk, Botanical Society of America Annual Meeting, Savannah, Georgia.

Rafferty, N.E., and J.D. Thomson. 2015. Climate change-induced shifts in flowering phenology: consequences for floral traits, plant-pollinator interactions, and reproductive output of plants. Invited talk, Entomological Society of America Pacific Branch Annual Meeting, Coeur d'Alene, Idaho.

Rafferty, N.E. 2015. Plant-pollinator interactions in a changing climate. Department of Ecology and Evolutionary Biology Seminar, University of Toronto.

Rafferty, N.E., P.J. CaraDonna, and J.L. Bronstein. 2014. Characteristics predicted to predispose mutualisms to phenological mismatches. Invited talk, Ecological Society of America Annual Meeting, Sacramento, California.

Rafferty, N.E. 2014. Plant-pollinator interactions in a changing climate. Invited talk, USA National Phenology Network Headquarters, Tucson, Arizona.

Rafferty, N.E. 2014. Plant-pollinator interactions in a changing climate. Invited talk, Department of Biology Seminar, Eastern Michigan University.

Rafferty, N.E., and J.L. Bronstein. 2013. The consequences of delayed flowering phenology in a sky-island plant, pointleaf manzanita. Invited talk, Ecological Society of America Annual Meeting, Minneapolis, Minnesota.

Rafferty, N.E., and J.L. Bronstein. 2012. Reproduction varies with flowering time in pointleaf manzanita. Contributed poster, Phenology Research and Observations of Southwest Ecosystems Symposium, Tucson, Arizona.

Rafferty, N.E., P.J. CaraDonna, L.A. Burkle, A.M. Iler, and J.L. Bronstein. 2012. Phenology of species interactions in a changing climate: an assessment and illustration of approaches. Invited talk, Botanical Society of America Annual Meeting, Columbus, Ohio.

- Rafferty, N.E. 2011. Climate change and shifts in flowering time: effects on plant-pollinator interactions. Department of Ecology and Evolutionary Biology Seminar, University of Arizona.
- Rafferty, N.E., and A.R. Ives. 2011. Pollinator effectiveness and composition vary with experimental shifts in flowering time. Contributed talk, Ecological Society of America Annual Meeting, Austin, Texas.
- Rafferty, N.E. 2011. Climate change and shifts in flowering time: effects on plant-pollinator interactions. Ph.D. exit talk, Biology Colloquium, University of Wisconsin.
- Rafferty, N.E. 2010. Effects of experimental shifts in flowering phenology on plant-pollinator interactions. Contributed talk, Ecological Society of America Annual Meeting, Pittsburgh, Pennsylvania.
- Gilman, R.T., N.S. Fabina, K.C. Abbott, and N.E. Rafferty. 2009. Evolution and robustness of plant-pollinator mutualisms in a changing environment. Contributed talk, Society for the Study of Evolution Annual Meeting, Moscow, Idaho.

Professional Service

Associate Editor, *Journal of Ecology* (2013-present)

Manuscript Reviewer, *American Journal of Botany* / *American Naturalist* / *Annals of Botany* / *Biological Conservation* / *Current Zoology* / *Ecology* / *Ecology Letters* / *Ecosphere* / *Evolution* / *Functional Ecology* / *Global Change Biology* / *International Journal of Insect Science* / *International Journal of Plant Sciences* / *Journal of Animal Ecology* / *Journal of Ecology* / *Journal of the Torrey Botanical Society* / *Nature Climate Change* / *New Phytologist* / *Oikos* / *Quarterly Review of Biology*

Ad Hoc Proposal Reviewer, Population and Community Ecology Program, Division of Environmental Biology, NSF (2015, 2012)

Proposal Reviewer, Functioning and Adaptation of Species, Agro-ecosystems, and Marine and Continental Ecosystems Program, French National Research Agency (2015)

Proposal Reviewer, National Fellowship Program, Sigma Delta Epsilon/Graduate Women in Science (2015)

Book Manuscript Reviewer jointly with J.L. Bronstein and J.L. Barker, *What Every Science Student Should Know*, University of Chicago Press (2014)

Book Proposal Reviewer, Ecology and Conservation Program, Springer (2014)

Co-organizer, Women in Natural Sciences, Panel discussions and seminars on professional issues for women in ecology and related disciplines, Department of Ecology and Evolutionary Biology, University of Arizona (2013-2014)

Participant, Pollination Ecology and Restoration Meeting, Co-organized by Hummingbird Monitoring Network and Arizona-Sonora Desert Museum, Santa Rita Experimental Range Headquarters, Arizona (2013)

Invited Participant, USA National Phenology Network Research Coordination Network Meeting, Milwaukee, Wisconsin (2012)

Primary Contact, Zoology Graduate Student Organization, University of Wisconsin (2008-2010)

Professional Development

Science Communication Workshop, University of Toronto (2015)

Pedagogy Workshop on Effective Teaching Strategies and the Student Experience, University of Arizona (2014)

An Introduction to Evidence-Based Undergraduate STEM Teaching, Massive Open Online Course, Center for the Integration of Research, Teaching, and Learning (2014)

Next Generation Ecologists in Global Change Research: Current Status and Future Directions Workshop, Ecological Society of America Annual Meeting, Minneapolis, Minnesota (2013)

NIH Institutional Research and Academic Career Development Award National Conference, Atlanta, Georgia (2013)

NSF Professional Grant Development Workshop, University of Arizona (2013)

The American Museum of Natural History Bee Course, Southwestern Research Station, Portal, Arizona (2012)

Pedagogy Workshop on Interactive Teaching, University of Arizona (2012)

NIH Institutional Research and Academic Career Development Award National Conference, Philadelphia, Pennsylvania (2012)

Pedagogy Workshop on Writing-Intensive Courses, University of Wisconsin (2007, 2009)

Undergraduate Mentoring

University of Arizona:

Victoria Scaven (2012-2014)

Assisted with projects on plant-pollinator interactions in the field, lab, and greenhouse; co-authored publication

Devon Makki (2014)

Assisted with project to measure how flowering phenology and floral traits are affected by different light, temperature, and moisture treatments

Meghan Iacueli (2013)

Conducted independent project on environmental factors affecting flowering phenology in *Arctostaphylos pungens*; presented research poster

Introductory Biology (Biology 181) Honors Students (2011)

Conducted group project to test the hypothesis that autogamous plants are more likely to show shifts in flowering time; prepared oral presentation and written report

Xi Chen (2011)

Assisted with fieldwork to determine how floral bud fate changes over the season in *Datura wrightii*

University of Wisconsin:

Abigail Smith (2008-2009)

Conducted independent project on the effects of neighboring plants on the pollination of *Tradescantia ohiensis*; received research grant (\$1,500)

Public Service, Outreach, and Guest Lectures

Judge, Ecology and Evolutionary Biology Undergraduate Poster Session, University of Arizona (2014)

Guest Lecturer jointly with A.M. Iler, “Plant-pollinator interactions and climate change”, Pollination Biology: Ecological and Evolutionary Perspectives, Department of Ecology and Evolutionary Biology, University of Arizona (2014)

Volunteer, Arizona Insect Festival, University of Arizona (2014, 2013)

Judge, Flowing Wells High School Science Fair, Tucson, Arizona (2012)

Invited Speaker, “Climate change and shifts in flowering time: effects on plant-pollinator interactions”, 11th Annual Science Day, University of Wisconsin Arboretum (2011)

Invited Speaker, “Effects of experimental shifts in flowering phenology on plant-pollinator interactions”, 10th Annual Science Day, University of Wisconsin Arboretum (2010)

Guest Lecturer, “Plant-pollinator mutualisms”, Primate Conservation Biology, Department of Anthropology, University of Wisconsin (2010)

Invited Speaker, “Climate change-induced shifts in flowering phenology and plant-pollinator interactions”, 9th Annual Science Day, University of Wisconsin Arboretum (2009)

Guest Lecturer, “Plant-pollinator mutualisms”, Primates in Ecological Communities, Department of Anthropology, University of Wisconsin (2008)

Volunteer Tutor, Greater University Tutoring Service, University of Wisconsin (2007)

Professional Memberships

American Society of Naturalists
British Ecological Society
Ecological Society of America