

KATHERINE EISEN

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Education

PhD in Ecology and Evolutionary Biology

2020

Cornell University, Ithaca, NY, USA

Advisor: Dr. M. A. Geber

Committee Members: Dr. A. A. Agrawal, Dr. R. A. Raguso

Dissertation title: Species interactions affect the distribution and evolution of multiple floral traits in California native wildflowers

Bachelor of Arts in Environmental Studies, *magna cum laude* with Distinction

2012

Amherst College, Amherst, MA, USA

Advisor: Dr. J. S. Miller

Honors thesis: Forty-two years of forest measurements support the continuation of the Northeastern carbon sink

Professional Experience

NSF Postdoctoral Fellowship in Biology, Rules of Life track

2021-2024

Lund University, Lund, Sweden

Supervisors: Drs. Magne Friberg and Anna Runemark

Maternity Leave

Spring 2021

Research Associate

2012-2014

University of Guelph, Ontario, Canada

Caruso and Maherali Labs, Department of Integrative Biology

Peer-Reviewed Publications

10. **Eisen, K. E.**, Siegmund, G.-F., Watson, M. A., and M. A. Geber. **2021**. Variation in the location and timing of experimental severing demonstrates that the persistent rhizome serves multiple functions in a clonal forest understory herb. *Functional Ecology* doi: 10.1111/1365-2435.13970
9. **Eisen, K. E.**, Geber, M. A., and R. A. Raguso. **2021**. Emission rates of species-specific volatiles vary across communities of *Clarkia* species: Evidence for multi-modal character displacement. *The American Naturalist* doi: 10.1086/715501
8. Godsoe, W., **Eisen, K. E.**, Sirianni, K., and D. Stanton. **2021**. Transmission bias's fundamental role in biodiversity change. *Theoretical Ecology* doi: 10.1007/s12080-020-00478-3
7. **Eisen, K. E.**, Wruck, A.C., and M. A. Geber. **2020**. Floral density and co-occurring congeners alter patterns of selection in annual plant communities. *Evolution* 74: 1682-1698.
6. **Eisen, K. E.**, Campbell, D. R., Richards, E., and M. A. Geber. **2019**. Differences in flowering phenology are likely not the product of competition for pollination in *Clarkia* communities. *International Journal of Plant Sciences* 180: 974-986. **Special issue on floral trait evolution**
5. Caruso, C. M., **Eisen, K. E.**, Martin, R. A., and N. Sletvold. **2019**. A meta analysis of the agents of selection on floral traits. *Evolution* 73: 4-14.
4. **Eisen, K. E.**, and M. A. Geber. **2018**. Ecological sorting and character displacement in communities of coexisting *Clarkia* species. *Journal of Evolutionary Biology* 31: 1440-1458.
3. **Eisen, K. E.**, Case, A. L., and C. M. Caruso. **2017**. Variation in pollen presentation in *Lobelia siphilitica*. *International Journal of Plant Sciences* 178: 79-84. **Featured Cover Article**

2. Caruso, C. M., **Eisen, K. E.**, and A. L. Case. **2016**. A phylogenetic analysis of gynodioecy and its correlates in the flowering plants. *International Journal of Plant Sciences* 177: 115–121. **Featured Cover Article**
1. **Eisen, K.** and A. Barker Plotkin. **2015**. Forty years of forest measurements support steadily increasing aboveground biomass in a maturing, *Quercus*-dominant northeastern forest. *Journal of the Torrey Botanical Society* 142: 97–112.

Book Reviews and Digests

3. **Eisen, K. E. 2018**. Digest: A new approach to an old question: using experimental evolution to investigate the evolution of generalized pollination. *Evolution* 72: 2825–2827.
2. **Eisen, K. E. 2017**. Digest: Trait variation in *Mimulus* provides new evidence for the joint action of ecological sorting and character displacement. *Evolution* 71: 1425–1427.
1. Petipas, R. H.* and **K. E. Eisen.* 2016**. The Roots and Shoots of Plant Evolutionary Ecology. A review of G. P. Cheplick 2015. *Approaches to Plant Evolutionary Ecology*. *Trends in Ecology & Evolution* 31: 409–410.
*Authors contributed equally.

Teaching Experience

Teaching Associate Evolution for non-majors online (BioEE 1180), Cornell University	Summer 2020
Module Developer & Guest Instructor Evolution for non-majors (BioEE 1180), Cornell University	Fall 2019
Guest Lecturer Chemical Ecology (BioEE 3690), Cornell University	Spring 2019
Teaching Assistant Chemical Ecology (BioEE 3690), Cornell University	Spring 2019
Teaching Assistant Introduction to Evolutionary Biology & Diversity (BioEE 1780), Cornell University	Fall 2015, Fall 2018

Fellowships and Awards

Postdoctoral Fellowship in Biology, Rules of Life track National Science Foundation	2021–2024
Outstanding Graduate Teaching Assistant Cornell University Department of Ecology and Evolutionary Biology	Spring 2020
Ed Ricketts Student Talk Award American Society of Naturalists Stand-Alone Meeting, Pacific Grove, CA	January 2018
Paul Fellowship for Study and Research in Absentia Cornell University Department of Ecology and Evolutionary Biology;	Spring 2016
Graduate Research Fellowship National Science Foundation	2015–2020
Lloyd I. Rosenblum Memorial Fund for Graduate Study Amherst College	2014–2017
Presidential Life Sciences Fellowship Cornell University	2014–2015

External Grants

Erik Philip-Sörensens research grant Erik Philip-Sörensens stiftelse	2021
Fysiografen Research Grant Royal Physiographic Society of Lund	2021
Fysiografen Travel Grant Royal Physiographic Society of Lund	2021
43rd Symposium Travel Grant New Phytologist Trust	2019
Graduate Student Research Fellowships, First Prize Torrey Botanical Society	2017
Lewis and Clark Fund for Exploration and Field Research American Philosophical Society	2017
Rosemary Grant Award for Graduate Student Research Society for the Study of Evolution	2015
Graduate Student Research Award Botanical Society of America	2015

Cornell University Grants

Sustainable Biodiversity Fund (Atkinson Center for a Sustainable Future)	2017
Research Travel Grant (Graduate School)	2017
Betty Miller Francis ‘47 Fund (E&EB Department)	2016
Sigma Xi Grant in Aid of Research, Cornell Chapter Award	2015, 2018
Conference Travel Grant , (Graduate School)	2015, 2017, 2018, 2019
Paul P. Feeny and Richard B. Root Funds (E&EB Department)	2015, 2016, 2017
Andrew W. Mellon Student Research Grant (CALS)	2015, 2016, 2018
Orenstein Fund (E&EB Department)	2015

Invited & Selected Presentations

Department of Ecology & Evolution University of Chicago, Chicago, IL Departmental Seminar. Drivers of variation in floral traits: from species interactions to molecular mechanisms.	October 2021
Biology Department University of Turku, Turku, Finland Departmental Seminar. Drivers of variation in floral traits: from species interactions to molecular mechanisms.	October 2021
Biodiversity, Earth & Environmental Science Department Drexel University, Philadelphia, PA Invited oral presentation to Graduate Student Seminar Series. Ecological and evolutionary interactions between pollinator-sharing plants.	March 2020

- Academy Research Seminar** **March 2020**
Academy of Natural Sciences, Philadelphia, PA
Invited oral presentation. Character displacement across multiple phenotypic axes in *Clarkia*.
- 43rd New Phytologist Symposium** **July 2019**
Zurich, Switzerland
Selected oral presentation & poster presentation. Emission rates of species-specific volatiles change across communities of *Clarkia* species: Evidence for character displacement in floral scent.
- II Joint Congress on Evolutionary Biology** **August 2018**
Montpellier, France
Selected oral presentation. Does sharing pollinators affect floral trait evolution? Stories from the *Clarkia* system.

Contributed Presentation (since 2014)

- Scandinavian Association of Pollination Ecologists (SCAPE)**, Warsaw, Poland **October 2021**
Oral presentation. The repeatability of floral scent across a geographic mosaic of coevolution in *Oenothera cespitosa* ssp. *marginata*.
- American Society of Naturalists**, Pacific Grove, CA **January 2020**
Oral presentation. Are changes in flower size associated with changes in plant size and physiology?
- Evolution**, Providence, RI **June 2019**
Oral presentation. Emission rates of species-specific volatiles change across communities of *Clarkia* species: Evidence for character displacement in floral scent.
- American Society of Naturalists**, Pacific Grove, CA **January 2018**
Oral presentation. Does sharing pollinators affect floral trait evolution? Stories from the *Clarkia* system.
- Ecological Society of America**, Portland, OR **August 2017**
Oral presentation. Ecological sorting and character displacement in communities of pollinator-sharing *Clarkia* species.
- Botany**, Edmonton, AB, Canada **July 2015**
Oral presentation. Sources of variation in pollen dispensing schedules of *Lobelia siphilitica*.
- Evolution**, Raleigh, NC **June 2014**
Oral presentation. A phylogenetic analysis of gynodioecy and its correlates in the flowering plants.

Outreach & Mentoring Activities

- Diversity Preview Weekend** **2017-2020**
Cornell University
- Coordinated participants' housing, ran workshop on NSF GRFP, provided feedback on personal statements.
- Scientist Mentor Fellow** **2016-2018**
Digging Deeper Project, PlantingScience
- Attended pedagogical training session with secondary-school teachers; worked intensively with teachers on program implementation
- Undergraduate mentoring & supervising** **2015-2020**
Cornell University
- Supervised and mentored two students conducting independent research projects and one work-study student.
- Master Plant Science Team Member** **2015-2016**
PlantingScience
- Served as a classroom liaison between teachers and scientist mentors

Instructor Graduate Student School Outreach Program (GRASSHOPR), Cornell University <ul style="list-style-type: none">Designed and taught short course on biodiversity to a fourth-grade class	2014-2015
Volunteer Educator Let's Talk Science, University of Guelph <ul style="list-style-type: none">Presented interactive activities on a range of STEM topics to classrooms and community groups	2012-2014
Undergraduate mentoring & supervising University of Guelph <ul style="list-style-type: none">Supervised eight work study students and mentored two honors thesis students.	2012-2014

Professional Activities

Reviewer (37 total manuscripts): *Evolution* (9); *Oecologia* (5); *American Journal of Botany* (4); *Journal of Ecology* (3); *Annals of Botany* (2); *Biological Invasions* (2); *International Journal of Plant Sciences* (2); *New Phytologist* (2); *Evolutionary Ecology* (1); *Frontiers in Plant Science* (1); *Journal of Plant Ecology* (1); *Journal of Plant Research* (1); *Nordic Journal of Botany* (1); *Plant Ecology & Diversity* (1); *Trees* (1)

Graduate Student Representative, faculty search in Organismal Biology, Cornell University (2019-2020)

Meeting Organizer, *ECR*² Online 2020; Cornell Ecology and Evolutionary Biology December Symposium (2015, 2016, 2017); Ontario Ecology, Ethology, and Evolution Colloquium (2014)

Member, American Society of Naturalists Graduate Council (2019-2022)

Member, American Society of Naturalists Diversity Committee (2019-2022)

Member, Botanical Society of America; California Botanical Society; California Native Plants Society; Ecological Society of America; Sigma Xi; American Society of Naturalists; Society for the Study of Evolution; Torrey Botanical Society

Special Skills & Training

Writing 7101: Writing in the Majors Seminar Cornell University <ul style="list-style-type: none">Received training on teaching writing; discussed challenges associated with working with student writing.	Spring 2019
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GET SET Certificate in “Understanding Undergraduate Learners” Center for Teaching Innovation, Cornell University <ul style="list-style-type: none">Participated in a series of workshops on fostering inclusivity and diversity in the classroom, facilitating effective discussions, and how to support struggling students.	2018
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Colman Leadership Program Cornell University	January 2018
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Leadership Development for Life Scientists (ALS 5100) Cornell University	Spring 2017
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Geometric Morphometrics in R Transmitting Science, Barcelona, Spain Instructor: Dr. Julien Claude, Assistant Professor, ISEM, France	Spring 2016
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Scientific Communication Workshop (COMM 5660) Cornell University	Fall 2015
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