

KATHERINE EISEN

Naturvetarvägen 6A, 223 62 Lund, Sweden

☎ +1 781-697-7825 +46 073 897 00 87 ✉ katherine.eisen@biol.lu.se 🌐 kate-eisen.github.io/ 🐙 github.com/kate-eisen

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

+ indicates author was a mentee

12. **Eisen, K. E.***, Powers, J. M.*, Raguso, R. A., and D. R. Campbell. **2022**. An analytical pipeline to support robust research on the ecology, evolution, and function of floral volatiles. Accepted 20 September 2022 at *Frontiers in Ecology and Evolution*, Research Topic: “Methods in Chemical Ecology.” *Authors contributed equally.
11. **Eisen, K. E.**, Ma, R., and R. A. Raguso. **2022**. Among- and within-population variation in floral morphology and scent in a hawkmoth pollinated plant. *American Journal of Botany*: doi: 10.1002/ajb2.16030 **Special issue** on “Approaches to the Study of Quantitative Fitness-Related Traits.”
10. **Eisen, K. E.**, Geber, M. A., and R. A. Raguso. **2022**. Emission rates of species-specific volatiles vary across communities of *Clarkia* species: Evidence for multi-modal character displacement. *The American Naturalist* 199: 824-840. doi: 10.1086/715501 **Focused topic** on “Species coevolution and the evolution of complex traits.”
9. **Eisen, K. E.**, Siegmund, G.-F., Watson, M. A., and M. A. Geber. **2022**. 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* 36: 356-367. doi: 10.1111/1365-2435.13970
8. Godsoe, W., **Eisen, K. E.**, Sirianni, K., and D. Stanton. **2021**. Transmission bias’s fundamental role in biodiversity change. *Theoretical Ecology* 14: 367-379. 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. doi: 10.1111/evo.13960; **digest covering this paper**, doi: 10.1111/evo.14055.

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. doi: 10.1086/705607 **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. doi: 10.1111/evo.13639
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. doi: 10.1111/jeb.13365
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. doi: 10.1086/688961 **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. doi: 10.1086/684260 **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. doi: 10.3159/TORREY-D-14-00027.1

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

Fellowships and Awards

Postdoctoral Fellowship in Biology, Rules of Life track	2021–2024
National Science Foundation	
Outstanding Graduate Teaching Assistant	Spring 2020
Cornell University Department of Ecology and Evolutionary Biology	
Ed Ricketts Student Talk Award	January 2018
American Society of Naturalists Stand-Alone Meeting, Pacific Grove, CA	

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

Swedish Phytogeographical Society Research Scholarship Swedish Phytogeographical Society	2022
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 Seminars

Department of Ecology & Evolution University of Chicago, Chicago, IL	October 2021
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Biology Department

University of Turku, Turku, Finland

October 2021

Biodiversity, Earth & Environmental Science Department

Graduate Student Seminar Series

Drexel University, Philadelphia, PA

March 2020

Academy Research Seminar

Academy of Natural Sciences, Philadelphia, PA

March 2020

Invited Conference Presentations

43rd New Phytologist Symposium, (Oral and Poster Presentation), Zurich, Switzerland

July 2019

II Joint Congress on Evolutionary Biology, Montpellier, France

August 2018

Contributed Presentations (since 2014)

Scandinavian Association of Pollination Ecologists (SCAPE), Gimo, Sweden

October 2022

European Society for Evolutionary Biology (Poster), Prague, Czech Republic

August 2022

Scandinavian Association of Pollination Ecologists (SCAPE), Warsaw, Poland

October 2021

American Society of Naturalists, Pacific Grove, CA

January 2020

Evolution, Providence, RI

June 2019

American Society of Naturalists, Pacific Grove, CA

January 2018

Ecological Society of America, Portland, OR

August 2017

Botany, Edmonton, AB, Canada

July 2015

Evolution, Raleigh, NC

June 2014

Mentoring Experience

Ph.D. students–informal mentoring

Laura Hildesheim, *Lund University*

2021–Present

Kalle Nilsson, *Lund University*

2021–Present

Zachery Nolen, *Lund University*

2021–Present

Hanna Thosteman, *Lund University*

2021–Present

Masters students–co-supervised with Magne Friberg

Xuefei Cheng (thesis student), *Lund University*

Spring 2022–Present

Clara Montgomery (thesis student), *Lund University*

Spring 2022–Present

Jule Salfeld (project student), *Lund University*

Summer 2022

Undergraduate and post-baccalaureate students

One undergraduate internship student, *Lund University*

2021–2022

Two independent research project students and one work-study student, *Cornell University*

2015–2020

Eight work-study students and two honors thesis students, *University of Guelph*

2012–2014

High school students

Sixteen teams of students completing inquiry-based projects, *PlantingScience Program*

2015–2021

Service & Outreach

Diversity & Inclusion

Vice Chair, American Society of Naturalists Diversity Committee **2022**

Member, American Society of Naturalists Diversity Committee **2019-2021**

Diversity Preview Weekend, Cornell University **2017-2020**

- Coordinated participants' housing, ran workshop on NSF GRFP, provided feedback on personal statements.

Outreach

Scientist Mentor Fellow **2016-2018**

Digging Deeper Project, PlantingScience

- Attended pedagogical training session with secondary-school teachers; worked intensively with teachers on program implementation

Master Plant Science Team Member **2015-2016**

PlantingScience

- Served as a classroom liaison between teachers and scientist mentors

Instructor **2014-2015**

Graduate Student School Outreach Program (GRASSHOPR), Cornell University

- Designed and taught short course on biodiversity to a fourth-grade class

Volunteer Educator **2012-2014**

Let's Talk Science, University of Guelph

- Presented interactive activities on a range of STEM topics to classrooms and community groups

Society & Institutional Service

Contributed Symposium Organizer, ESEB 2022 Congress, Prague, Czech Republic **2021-2022**

Member, American Society of Naturalists Graduate Council **2019-2022**

Meeting Organizer, *ECR²* Online 2020 **Summer 2020**

Graduate Student Representative, faculty search, Cornell University **2019-2020**

Meeting Organizer, Cornell Ecology and Evolutionary Biology December Symposium **2015, 2016, 2017**

Meeting Organizer, Ontario Ecology, Ethology, and Evolution Colloquium **2014**

Reviewing

Reviewer for Peer-Reviewed Journals (47 total manuscripts): *Evolution* (10); *American Journal of Botany* (6); *Oecologia* (5); *Journal of Ecology* (4); *International Journal of Plant Sciences* (3); *New Phytologist* (3); *Annals of Botany* (2); *Biological Invasions* (2); *Functional Ecology* (2); *AoB Plants* (1); *Ecology & Evolution* (1); *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); *Proceedings B* (1); *Trees* (1)

Reviewer, American Society of Naturalists Student Research Award (2022)

Professional Memberships

American Society of Naturalists; Botanical Society of America; Ecological Society of America; European Society for Evolutionary Biology; Sigma Xi; Society for the Study of Evolution

Special Skills & Training

Writing 7101: Writing in the Majors Seminar, Cornell University **Spring 2019**

- Received training on teaching writing; discussed challenges associated with working with student writing.

GET SET Certificate in “Understanding Undergraduate Learners” **2018**

Center for Teaching Innovation, Cornell University

- Participated in a series of workshops on fostering inclusivity and diversity in the classroom, facilitating effective discussions, and how to support struggling students.

Colman Leadership Program, Cornell University

January 2018

Leadership Development for Life Scientists (ALS 5100), Cornell University

Spring 2017

Geometric Morphometrics in R

Spring 2016

Transmitting Science, Barcelona, Spain

Instructor: Dr. Julien Claude, Assistant Professor, ISEM, France

Scientific Communication Workshop (COMM 5660), Cornell University

Fall 2015