

# Dr. Aubrie James, PhD

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## EDUCATION

**Cornell University**, Ithaca, NY, USA 2020

PhD, Department of Ecology and Evolutionary Biology

Dissertation title: Pollinator sharing and spatial partitioning affect flowering plant coexistence

Advisor: Dr. Monica Geber

Committee: Dr. Anurag Agrawal and Dr. Stephen Ellner

**Massachusetts Institute of Technology**, Cambridge, MA, USA 2024

MS in Art, Culture, and Technology, Department of Architecture

Thesis title: What is ecology?

Advisor: Nida Sinnokrot

Committee: Dr. Ellie Irons and Tobias Putrih

**Iowa State University**, Ames, IA, USA 2012

BS in Animal Ecology

*Summa Cum Laude*

## PUBLICATIONS

### Published and accepted papers

[11] James, A.R.M.\*, Mayfield, M.M., Bimler, M.\* 2025. *Facilitation thinking for coexistence theory*. Ecology Letters 28(6): e701050. <https://doi.org/10.1111/ele.70150>

[10] James, A.R.M., Geber, M. A. 2025. *The contribution of pollinator-mediated vs pollinator-independent interactions to plant reproduction*. Ecological Monographs 95(1): e1649. <https://doi.org/10.1002/ecm.1649>

[9] Simha, A.\*, **James, A.R.M.\***, Monk, J. D., Zou, H-X., Ke, P-J., Wright, A., Bimler, M. D., Moore, C. M., Pierre, S., Carley, L.N., Kandlikar, G. 2024. *When the window is a mirror: how do dominant theories limit our understanding of nature? (ESA 2023 INS23)*. The Bulletin of the Ecological Society of America 0(o):e02145. <https://doi.org/10.1002/bes2.2145>

[8] Arenas-Castro, H., Berdejo-Espinola, V., Chowdhury, S., Rodríguez-Contreras, A., **James, A.R.M** and 31 co-authors. 2024. *Academic publishing requires linguistically inclusive policies*. Proceedings of the Royal Society B. 291:20232840. <https://doi.org/10.1098/rspb.2023.2840>

[7] James, A.R.M., Mayfield, M. M., Dwyer, J.M. 2023. *Patterns of frequency and density dependence are highly variable in diverse annual flowering plant communities*. Ecology 104(5):e4021. <https://doi.org/10.1002/ecy.4021>

[6] James, A.R.M. 2023. *Inter-annual facilitation via pollinator support arises with species-specific germination rates in a model of plant-pollinator communities*. Proceedings of the Royal Society B. 290(990). <https://doi.org/10.1098/rspb.2022.1485>

[5] James, A.R. M.\* , Geber, M. A., Toews, D.P.L.\* . 2022. *Molecular assays of pollen use consistently reflect pollinator visitation patterns in a system of flowering plants*. Molecular Ecology Resources 22(1): 361-374. <https://doi.org/10.1111/1755-0998.13468>

[4] Anderson, A.C.\*\* , **James, A.R.M.\***, Magno, E.A.\* , Geber, M.A. 2021. *Bee species exhibit different phenological trajectories in communities of annual flowering plants in the genus Clarkia*. Climate Change Ecology 2, 100031. <https://doi.org/10.1016/j.ecochg.2021.100031>

[3] James, A. R.M., Burnette, T.E.\* , Mack, J.\* , James, D.E., Eckhart, V.M., Geber, M.A. 2020. *Species-specific variation in germination rates contributes to spatial coexistence more than adult plant water use in four closely-related annual flowering plants*. Journal of Ecology 108 (6) 1365-2745.13408, 2584-2600. doi: 10.1111/1365-2745.13408

#### **Postdoctoral Excellence Award**

[2] Shoemaker, L., Sullivan, L., Donohue, I., Sarmiento Cabral, J., Williams, R., Mayfield, M.M., Chase, J., Chu, C., Harpole, W., Huth, A., HilleRisLambers, J., **James, A. R.M.**, Kraft, N., May, F., Muthukrishnan, R., Satterlee, S., Taubert, F., Wang, X., Weigand, T., Yang, Q., Abbott, K.C. 2019. *Integrating the underlying structure of stochasticity into community ecology*. Ecology 101(2): e02922. doi: 10.1002/ecy.2922

[1] James, A.R.M. and Abbott, K.C. 2014. *Phenological and geographical shifts have interactive effects on migratory bird populations*. The American Naturalist 183: 40-53. doi: 10.1086/674129

#### Papers under revision or review

[12] James, A.R.M., Kandlikar, G., Simha, A. Under review. *Hearing the material: dealing with indeterminacy in plant ecology*.

[13] Siu, W.M.\* , Eckersley, J., Dwyer, J.M., Mayfield, M.M.°, and James, A.R.M.° Under review. *Linking species performance and community composition to environmental heterogeneity: insights into spatial coexistence in annual plant communities*.

\* Undergraduate or graduate research mentee

\* Equal contributions

◊ Shared senior authorship

## EXHIBITIONS

*Material <> Digital*, Red Materia, Antigua, Guatemala 2025

*Land Portal*, DeCordova Sculpture Park and Museum, Lincoln MA 2025

*Surficial Geology of Madrid: Anthropic Rock Formation Relies on Cycling Material in Urban Environments*, Espacio Enredo, Madrid, Spain 2025  
Solo Exhibition

*The Whole Star is a Moving Skin*, MIT ACT Gallery, Cambridge, MA 2024

*shore/lime/line/light*, Weisner Gallery, Cambridge, MA 2024  
Solo Exhibition

*zero.zerozerozerozerozerozerozerozerozerozero*, MIT.nano, Cambridge, MA 2023

*Eros Feeding Thanatos Feeding (Eros)*, MIT ACT Gallery, Cambridge, MA 2023  
Solo Exhibition

*Counteractions: ACT Thesis exhibition*, Distillery Gallery, Boston, MA 2023

*Counteractions: ACT Thesis screening*, MIT Museum, Cambridge, MA 2023

## TEACHING AND MENTORING

**Professor**, Ecology and Environmental Issues, Fashion Institute of Technology 2025

**Graduate Research mentor**, University of Melbourne 2023-present  
PhD candidate studying the relationship of plant community composition and demographic performance as a function of soil microbial communities, and spatial turnover in soil nutrients [13]

**Teaching Assistant**, Creating Art, Thinking Science, MIT 2023

**Teaching Assistant**, Art in the Public Sphere: Hybridity and Monstrosity, MIT 2023

**Lecturer**, Biostatistics and Experimental Design, University of Queensland 2022

**Graduate Research mentor**, University of Queensland 2021

Master's of Conservation student, who studied traits associated with facilitative plant interactions for the research component of her work.

**Instructor**, Writing Workshop, University of Queensland 2021

**Undergraduate Research mentor**, Cornell University 2016- 2021

Three undergraduate students. Two worked on exploratory data analysis and writing the results of the analysis for a [4]. One also worked on identifying and pinning bees collected in this project for donation to the Cornell University Insect Collection. The third helped design and implement field sample collection and analysis of soil samples and was an author on [3].

**Teaching Assistant**, Current Topics in Ecology and Evolution, Cornell University 2019

**Teaching Assistant**, Ecology and the Environment (Writing in the Majors)  
Cornell University 2017- 2018

**Teaching Assistant**, Evolutionary Biology and Diversity, Cornell University 2017

**Teaching Assistant**, Cornell Prison Education Program  
Cayuga and Auburn Correctional Facilities 2014-2015

**Tutor**, Introductory Biology, Iowa State University 2011

**Supplemental Instruction Leader**, Introductory Biology, Iowa State University 2010

## RESEARCH EXPERIENCE

**Postdoctoral Fellow**, University of Queensland

Brisbane, Queensland, Australia

Supervisors: John Dwyer and Margie Mayfield January 2020- September 2022

- Postdoctoral research studying pollinator-mediated density- and frequency-dependence, facilitation, and spatial coexistence in flowering annual plant populations [7, 8, 11, 13]

**Research Assistant** Iowa State University September 2011-June 2013

Supervisor: Karen Abbott

- Built a population model of a long-distance avian migrant in Matlab to understand the role of phenology in shaping the demographic consequences of climate change [1]

**Co-Principle Investigator**

The Vascular Flora of Anderson State Prairie

September 2011-May 2013

Supervisors: William Norris and Thomas Rosburg

- Conducted a floristic inventory of Anderson Prairie State Preserve in Emmet County, Iowa for the Iowa State Preserves Board

**NSF Undergraduate Research Fellowship** Harvard Forest  
Research Experiences for Undergraduates Program, Harvard Forest  
Supervisors: Elizabeth Crone and Greg Breed

May 2012-August 2012

- Study investigating the morphology and movement ecology of a Massachusetts population of the butterfly *Euphydryas phaeton* (Baltimore Checkerspot)

## FELLOWSHIPS AND RESIDENCIES

|  |           |
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| Espacio Enredo Artist Residency, Madrid, Spain           | 2025      |
| DeCordova Sculpture Park and Museum Artist Residency     | 2025      |
| University of Queensland Postdoctoral Fellowship         | 2022      |
| Cornell University Andrew and Margaret Paul Fellowship   | 2017      |
| NSF Graduate Research Fellowship                         | 2014-2016 |
| Cornell University Presidential Life Sciences Fellowship | 2013      |

## GRANTS, AWARDS AND HONORS

### Grants

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|--|-----------|
| Council for the Arts at MIT Grant  | 2023      |
| MIT Art, Culture, and Technology Gallery Grant   | 2022      |
| NSF Doctoral Dissertation Improvement Grant  | 2017-2019 |
| Andrew W. Mellon Grant   | 2016      |
| Orenstein Fund Grant   | 2016      |
| President's Council of Cornell Women Microgrant<br>( <i>Symposium on Intersectional Feminism in STEM</i> ) | 2016      |
| American Society of Naturalists Student Grant  | 2016      |
| Atkinson Center Sustainable Biodiversity Grant   | 2016      |
| Betty Miller Francis Grant   | 2016      |
| Iowa Natural Plants Society Grant  | 2012      |
| Iowa State Preserves Board Grant   | 2012      |

### Awards and honors

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|---|------|
| ESA Plant Population Ecology Group Postdoctoral Excellence Award  | 2021 |
| Society of American Naturalists Ruth Patrick Student Poster Award | 2018 |

## PROFESSIONAL SERVICE

**Reviewer:** American Journal of Botany, Ecology, Ecology & Evolution, Ecology Letters, Ecography, Global Ecology and Biogeography, Journal of Ecology, New Phytologist, Oecologia, Oikos, The American Naturalist

**Organizer, Organized Oral Symposium.** *When the window is a mirror: how do dominant theories*

*limit our understanding of nature?*, 2023 Conference for the Ecological Society of America, Portland, Oregon

Co-organizers: Anita Simha and Gaurav Kandlikar

**Organizer, Organized Oral Symposium.** *Examining the Role of Spatial Variation in Maintaining Plant Community Diversity*, 2018 Conference for the Ecological Society of America, New Orleans, Louisiana

Co-organizer: Gaurav Kandlikar

**Executive Board**, Cornell Graduate Women in Science 2016-2018

**Volunteer**, Cornell EEB Diversity Preview Weekend 2016

**Volunteer**, Cornell Insectapalooza 2016

**Visiting Science Educator**, Kern Valley High School 2013-2016

## SELECTED PRESENTATIONS

Unfiguring Conference, Harvard University. 2024

Boston Lead Gardens is an experience in phytoremediation of urban soils  
*with* Luca Smith Senise

Invited Artist's Talk, Northeastern University 2023, 2024  
Boston Lead Gardens

Ecological Society of America. Contributed talk. 2023  
Towards a facilitative world hypothesis.

Ecological Society of America. Contributed Poster. 2022  
Fallen trees structure local species composition and demography in a hyperdiverse annual plant system in Western Australia.

Ecological Society of Australia. Contributed Talk. 2021  
Variation in frequency and density dependence in natural plant communities suggests limited relevance of coexistence models for natural populations.

Case Western Reserve University. Invited Speaker, Department of Biology. 2021  
Balancing natural history and ecological theory: reconciling the role of pollinators in plant species interactions.

University of Queensland. Keynote Speaker, Postgraduate Student Colloquium. 2021  
The role of pollinators in plant species interactions (and some advice for grads).

Cornell University, Department of Ecology and Evolutionary Biology. 2019  
Dissertation seminar: Pollinator sharing and spatial partitioning affect flowering plant coexistence.

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| Ecological Society of America. Contributed Talk.                             | 2018 |
| Pollen limitation and plant interactions in communities of flowering plants. |      |

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|---|------|
| American Society of Naturalists Meeting. Asilomar, Pacific Grove, California. Poster. | 2018 |
| Pollinator phenology depends on level of specialization in Clarkia communities        |      |
| <b>Ruth Patrick Student Poster Award</b>  |      |

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|---|------|
| Ecological Society of America. Contributed Talk.                  | 2017 |
| The effects of pollinator sharing on flowering plant coexistence. |      |

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| Atkinson Center Sustainable Diversity Fund Symposium.  | 2016 |
| Responses of specialist pollinators to diversity and abundance of plants in the genus Clarkia. |      |

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| sNiche working group, German Center for Integrative Biodiversity.              | 2016 |
| How to grapple with deterministic and stochastic variation in ecological data? |      |

## OTHER ACTIVITIES

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|---|-----------|
| <b>Apprentice</b> , Giossi & Kuhn   | July 2023 |
| <b>Committee Member (Secretary)</b> , Brisbane Tool Library                             | 2021-2022 |
| <b>Master Composter</b> of Tompkins County (Program and Certification) Ithaca, New York | 2019      |