

CIRRICULUM VITAE

Jeffrey P. Rose, Ph.D.

Postdoctoral Researcher
Department of Biology
University of Nebraska at Kearney
2401 11th Avenue, BHS 312
Kearney, NE 68849
rosej@unk.edu

RESEARCH AREAS OF INTEREST:

Phylogenetics of land plants; systematics of asterids and bryophytes with an emphasis on orders Ericales and Lamiales and families Ericaceae, Fouquieriaceae, Gentianaceae, and Polemoniaceae; adaptive radiations in conjunction with evolution of morphology, especially floral form; speciation in North America; floristics of North America; historical biogeography; herbarium curation; monographic studies; species delimitation; conservation genetics; methods for phylogenetic inference; phylogenetic comparative methods, especially trait evolution; morphometric analysis.

EDUCATION:

- Ph.D. Department of Botany, The University of Wisconsin-Madison, 2012–2018.
Dissertation: *Perspectives on Phlox: Evolutionary Trends in Polemoniaceae (Ericales) at Four Taxonomic Scales*. Kenneth J. Sytsma, advisor
- M.S. Department of Evolution, Ecology, and Organismal Biology, The Ohio State University, 2009–2012. Thesis: *The Systematics of Monotropis (Ericaceae)*. John V. Freudenstein, advisor
- B.S. *Summa cum Laude*, Department of Evolution, Ecology, and Organismal Biology, The Ohio State University, 2005–2009

PROFESSIONAL APPOINTMENTS:

- 2019– Postdoctoral Researcher, The University of Nebraska at Kearney (Bryan T. Drew, advisor)
- 2018–19 Postdoctoral Researcher, the University of Colorado Boulder (Erin A. Manzitto-Tripp, advisor)
- 2012–18 Teaching Assistant, Botany, the University of Wisconsin-Madison
- 2009–12 Teaching Assistant, Evolution, Ecology, and Organismal Biology, The Ohio State University
- 2007–09 Research Assistant, The Ohio State University Herbarium, The Ohio State University
- 2005–06 Research Assistant, The Ohio State University-Marion

GRANTS AWARDED:

- 2015–2017 National Science Foundation Doctoral Dissertation Improvement Grant, Evolutionary Trends in Polemoniaceae (Ericales) at Four Taxonomic Scales (\$17,060)
- 2014 Davis Research Award, Botany Department, The University of Wisconsin-Madison (\$1,200)

- 2014 Flora Aeterna Research Award, Botany Department, The University of Wisconsin Madison (\$1,500)
- 2014 Rocky Mountain Biological Laboratory Research Grant (\$300)
- 2014 Utah Native Plant Society Grant (\$500)
- 2014 Idaho Native Plant Society Education Research Inventory Grant (\$550)
- 2014 Botanical Club of Wisconsin John Thompson Award (\$1,000)
- 2014 Nevada Native Plant Society Margaret Williams Research Grant (\$450)
- 2014 New Mexico Native Plant Society Grant (\$1,000)
- 2013 Flora Aeterna Research Award, Botany Department, The University of Wisconsin-Madison (\$1,200)

HONORS AND AWARDS:

- 2016 Allen Fellowship, Botany Department, The University of Wisconsin-Madison
- 2015 American Society of Plant Taxonomists Travel Award (to present two papers at Botanical Society of America meeting)
- 2015 Raper Travel Award, Botany Department, The University of Wisconsin-Madison (to present two papers Botanical Society of America meeting)
- 2012–2013 University Fellowship, The Ohio State University

PUBLICATIONS:

16. **Rose, J. P.** and K. J. Sytsma. A New Combination for a Narrowly Endemic *Polemonium* (Polemoniaceae). *In press in Novon*.
15. Kriebel, R., **J. Rose**, B. Drew, J. G. González-Gallegos, F. Celep, L. Heeg, M. M. Mahdjoub, and K. J. Sytsma. Model selection, hummingbird natural history, and biological hypotheses: a response to “Did early shifts to bird pollination impose constraints on *Salvia* flower evolution?” *Evolution*. 77: 646–653.
14. **Rose, J. P.** and K. J. Sytsma. 2022. Genetic Variation in Western Jacob’s Ladder (*Polemonium occidentale*) Provides Insights into the Origin and Conservation of Rare Species in the Great Lakes Region. *Molecular Ecology*. 32: 79–94.
13. **Rose, J. P.**, C.-L. Xiang, K. J. Sytsma, and B. T. Drew. 2022. A Timeframe for Mint Evolution (Lamiaceae): Towards a Better Understanding of Trait Evolution and Historical Biogeography. *Botanical Journal of the Linnean Society*. 200: 15–38.
12. **Rose, J. P.**, R. Kriebel, L. Kahan, A. DiNicola, J. G. González- Gallegos, F. Celep, E. M. Lemmon, A. R. Lemmon, K. J. Sytsma, and B. T. Drew. 2021. Sage insights into the phylogeny of *Salvia*: Dealing with sources of discordance within and across genomes. *Frontiers in Plant Science*: 2606. DOI: 10.3389/fpls.2021.767478.
11. **Rose, J. P.** 2021. Taxonomy and Relationships Within *Polemonium foliosissimum* (Polemoniaceae): Untangling a Clade of Colorful and Gynodioecious Herbs. *Systematic Botany*. 46: 519-537.
10. Tarullo, C., **J. P. Rose**, K. Sytsma, and B. T. Drew. 2021. Using a supermatrix approach to explore phylogenetic relationships, divergence times, and historical biogeography of Saxifragales. *Turkish Journal of Botany*. DOI: <http://dx.doi.org/10.3906/bot-2106-41>.
9. **Rose, J. P.** and K. J. Sytsma. 2021. Complex interactions underlie the correlated evolution of floral traits and their association with pollinators in a clade with diverse pollination systems. *Evolution*. 75: 1431–14498.

8. **Rose, J. P.**, C. A. P. Toledo, E. M. Lemmon, A. R. Lemmon, and K. J. Sytsma. 2021. Out of sight, out of mind: widespread nuclear and plastid-nuclear discordance in the flowering plant genus *Polemonium* (Polemoniaceae) suggests widespread historical gene flow despite limited nuclear signal. *Systematic Biology*. 70: 162-180.
7. Givnish, T. J., R. Kriebel, J. Zaborsky, **J. P. Rose**, D. Spalink, D. M. Waller, K. M. Cameron, and K. J. Sytsma. 2020. Adaptive associations among life history, reproductive traits, environment, and origin in the Wisconsin angiosperm flora. *American Journal of Botany*. 107: 1677-1692.
6. Kriebel, R., B. T. Drew, C. P. Drummond, J. G. González-Gallegos, F. Celep, M. M. Mahdjoub, **J. P. Rose**, C. Xiang, G. Hu, J. B. Walker, E. M. Lemmon, A. R. Lemmon, and K. J. Sytsma. 2019. Tracking the temporal shifts in area, biomes, and pollinators in the radiation of *Salvia* (sages) across continents: leveraging Anchored Hybrid Enrichment and targeted sequence data. *American Journal Botany*. 106: 573-587.
5. Spalink, D., R. Kriebel, P. Li, M. C. Pace, B. T. Drew, J. G. Zaborsky, **J. Rose**, C. P. Drummond, M. A. Feist, W. S. Alverson, D. M. Waller, K. M. Cameron, T. J. Givnish, and K. J. Sytsma. 2018. Spatial phylogenetics reveals evolutionary constraints on the assembly of a large regional flora. *American Journal Botany*. 105: 1938-1950.
4. **Rose, J. P.**, T. Kleist, S. Löfstrand, B. T. Drew, J. Schönenberger, and K. J. Sytsma. 2018. Phylogeny, historical biogeography, and diversification of the angiosperm order Ericales suggests ancient Neotropical and East Asian connections. *Molecular Phylogenetics and Evolution*. 122: 59-79.
3. **Rose, J. P.** and C. L. Dassler. 2017. Spore production and dispersal in two temperate fern species, with an overview of the evolution of spore production in ferns. *American Fern Journal*. 107: 136-155.
2. **Rose, J. P.**, R. Kriebel, and K. J. Sytsma. 2016. Shape analysis of moss (Bryophyta) sporophytes: Insights into land plant evolution. *American Journal Botany*. 103: 652-662.
1. **Rose, J. P.** and J. V. Freudenstein. 2014. Cryptic and Overlooked: Species delimitation in the mycoheterotrophic *Monotropis* (Ericaceae: Monotropoideae). *Systematic Botany*. 39: 578-593.

NON-PEER-REVIEWED CONTRIBUTIONS:

Rose, J. P. and R. A. Klips. 2007. Flora of Headwaters Outdoor Education Center, Morrow County Ohio. Submitted to the Morrow County Soil and Water Conservation District.

POSTERS AND PRESENTATIONS:

- Rose, J. P.** and E. A. Manzitto-Tripp. 2022. Filament curtains, didynamous stamens, asymmetric stigmas, and the evolution of reproductive floral whorls in *Ruellia* (Acanthaceae). Botanical Society of America Meeting. Anchorage, AK.
- Rose, J. P.**, L. Heeg, R. Kriebel, A. Codina, K. Keefover-Ring, K. Sytsma, and B. Drew. 2022. Phylogenomics and Evolution of Leaf Volatiles in the California Sages. Botanical Society of America Meeting. Anchorage, AK.
- Rose, J. P.**, R. Kriebel, L. Kahan, A. DiNicola, J. G. González-Gallegos, F. Celep, E. M. Lemmon, A. R. Lemmon, K. J. Sytsma, and B. T. Drew. 2021. Sage insights into the phylogeny of *Salvia*: Dealing with sources of discordance within and across genomes. *Frontiers in Plant Science*. Botanical Society of America Meeting. Online.

- Rose, J. P.** and E. A. Tripp. 2019. Look who just moved in next door!: Understanding geographical patterns in Neotropical *Ruellia* (Acanthaceae). Botanical Society of America Meeting. Tucson, AZ.
- Rose, J. P.** 2019. Floral Evolution in Polemoniaceae. Rancho Santa Anna Botanical Garden Colloquium, Claremont, CA.
- Rose, J. P.** and K. J. Sytsma. 2018. Testing the relative contribution of incomplete lineage sorting and reticulate evolution in the evolutionary history of flowering plants: *Polemonium* (Polemoniaceae) as a case study. Botanical Society of America Meeting. Rochester, MN.
- Rose, J. P.** and K. J. Sytsma. 2018. Recent advances and future prospects in understanding the evolutionary dynamics of Ericaceae. Botanical Society of America Meeting. Rochester, MN.
- Kriebel, R. **J. Rose**, P. Bastide, D. Jolles, and K. J. Sytsma. 2018. Dissecting the evolution of flower shape and size and their relationships to pollination in Ericaceae at a global scale. Botanical Society of America Meeting. Rochester, MN.
- Rose, J. P.** 2018. Speciation in western North America: Insights from *Polemonium* (Polemoniaceae). University of Wisconsin-Madison Departments of Botany and Integrative Biology Colloquium, Madison, WI.
- Rose, J. P.** and K. J. Sytsma. 2016. Biogeography and biome shifts of blueberries (Ericaceae). Botanical Society of America Meeting. Savannah, GA.
- Rose, J. P.** and K. J. Sytsma. 2015. Nature or nurture?: Investigating the evolution of cotyledons in Polemoniaceae. Botanical Society of America Meeting. Edmonton, AB.
- Rose, J. P.**, R. Kriebel, and K. J. Sytsma. From the ground up: Evolution of shape in the moss sporophyte (Bryophyta) and its implications for land plant diversification. Botanical Society of America Meeting. Edmonton, AB.
- Rose, J. P.**, C. Toledo, and K. J. Sytsma. 2014. Phylogeny, gene discordance, and morphology of *Polemonium* (Polemoniaceae). Botanical Society of America Meeting. Boise, ID.
- Rose, J. P.** and J.V. Freudenstein. 2012. Unclogging the pipes: Integrative species delimitation in *Monotropsis* (Ericaceae). Botanical Society of America Meeting. Columbus, OH.
- Rose, J. P.** and J. V. Freudenstein. 2012. A tale of two pygmy pipes: Quantifying variation in *Monotropsis* (Ericaceae). Botanical Society of America Meeting. St. Louis, MO.
- Rose, J. P.** and C. L. Dassler. 2009. Spore Dispersal in Two Temperate Fern Species. Denman Undergraduate Research Forum, The Ohio State University. Columbus, OH.

TEACHING EXPERIENCE:

2017	Introduction to Botany, The University of Wisconsin-Madison
2015	Plant Systematics, The University of Wisconsin-Madison
2015, 2017	Plant Geography, The University of Wisconsin-Madison
2014–2017	Vascular Flora of Wisconsin, The University of Wisconsin-Madison
2014	Plant Anatomy, The University of Wisconsin-Madison
2013	General Biology, The University of Wisconsin-Madison
2011–2012	Local Flora, The Ohio State University
2010	Evolution, The Ohio State University

MENTORSHIP:

- 2015–2017 Malik Mahdjoub (Ph.D. student, Université de Béjaïa, Algeria). This mentorship focused on assisting with generating molecular sequence data for Mahdjoub’s dissertation on North African *Salvia* (Lamiaceae) and included teaching DNA extraction, PCR amplification of nuclear and plastid genes, plastome assembly, phylogenetic reconstruction, and R programming.
- 2013–2014 Cassio Toledo (Undergraduate Exchange Student, University of São Paulo, Brazil). This mentorship focused on Rose’s dissertation on *Polemonium* and included teaching DNA extraction, PCR amplification of nuclear and plastid genes, and phylogenetic reconstruction.

SERVICE:

- 2021– Associate Editor, *Turkish Journal of Botany* (2020 impact factor 1.489)

Peer reviews for: *American Journal of Botany*, *Annals of Botany*, *American Naturalist*, *Biotropica*, *Botanical Journal of the Linnean Society*, *Frontiers in Ecology and Evolution*, *Journal of Systematics and Evolution*, *Molecular Phylogenetics and Evolution*, *New Phytologist*, *Systematic Biology*.

Proposal review activity:

- 2020–2021 American Society of Plant Taxonomists (graduate student awards)

Miscellaneous:

- 2019 Presentation judge, Cooley Award (American Society of Plant Taxonomists)
- 2019, 2021-22 Session chair, Botanical Society of America meeting
- 2014– The Wisconsin State herbarium (WIS): contributed collections of bryophytes and vascular plants from underrepresented counties in Wisconsin, as well as expanded the North American collection
- 2007– The Ohio State University herbarium (OS): contributed collections of bryophytes and vascular plants from underrepresented counties in Ohio, as well as expanded the North American collection

PUBLIC OUTREACH:

- 2017 Delivered a presentation during a Botanical Club of Wisconsin Meeting entitled: “Morphological evolution at multiple taxonomic scales in the phlox family”
- 2016 Hosted Botanical Club of Wisconsin Meeting giving an introductory lecture on the bryophytes of Wisconsin and a laboratory session on identification
- 2014– Maintained a professional website (<https://polemoniaceae.wordpress.com/>) providing detailed information on the natural history of Polemoniaceae
- 2013– Provided identification assistance on iNaturalist (<https://www.inaturalist.org/>) and contributed my own observations (username: polemoniaceae, currently ~570 observations and ~225,000 identifications for others)
- 2009 Delivered a presentation as part of The Ohio State University Herbarium lecture series entitled: “Measuring botanical biodiversity in Ohio: One Decade of Study at Deep Woods Farm”
- 2009–2012 Organizing volunteer, OSU Museum of Biological Diversity Open House (impact ~1,000-3,000 visitors on single-day event)

SOFTWARE SKILLS AND REPOSITORIES:

Julia, LaTeX, Python, R, Unix. Github: <https://github.com/jrosaceae>.

FIELDWORK:

Western U. S. A. 2013, 2014, 2019, Eastern U. S. A. 2005–present

HERBARIA VISITED:

The Ohio State University (OS), New York Botanical Garden (NY), Missouri Botanical Garden (MO), Rancho Santa Anna Botanical Garden (RSA), Eastern Kentucky University (EKY), The University of Wisconsin-Madison (WIS), The University of Colorado (COLO), Appalachian State University (BOON), Milwaukee Public Museum (MPM).

ONGOING RESEARCH:

Postdoctoral Research:

Phylogenomics, trait evolution, and taxonomy of *Monardella* (Lamiaceae)
Phylogenomics of *Salvia* (Lamiaceae), with an emphasis of subgenus *Audibertia* in the California Floristic Province

Additional Projects:

Floral evolution in *Ruellia* (Acanthaceae)
Historical biogeography and diversification of Gentianaceae
Historical biogeography and geography of speciation in Polemoniaceae
Cotyledon evolution in Fabaceae and Polemoniaceae
Phylogenomics, floral evolution, and taxonomy of the *Ipomopsis aggregata* species complex (Polemoniaceae)
Evolution of spore size in mosses and ferns and correlation with life history and geographic range
Bryophyte Flora of Wisconsin: An Atlas and Checklist (updated draft versions available at <https://polemoniaceae.wordpress.com/bryophytes-of-wisconsin/>)

PROFESSIONAL SOCIETIES:

American Society of Plant Taxonomists

Last updated February 2023