Catherine Rushworth

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PROFESSIONAL APPOINTMENTS

Assistant Professor Utah State University	July 2022 – current
Faculty Fellow Transforming Communities Institute, USU Social Work	2025 – current
Postdoctoral Associate University of Minnesota and UC Davis	July 2018 – June 2022
Research Associate and Curator University of California, Berkeley	June 2018 – June 2022
Louise Kellogg Postdoctoral Fellow University of California, Berkeley	Sept. 2015 – June 2018
Parental leave	2018

EDUCATION

Ph.D. Biology: Duke University	2009 – 2016 (conferred)
B.S. Management, Communication, and Public Relations: Emerson College	1998 – 2002

PUBLICATIONS (Peer reviewed and preprints)

Underlining indicates Rushworth lab members

24. **Rushworth, C.A.** *In revision.* The ecology of hybridization. Invited Tansley Review, *New Phytologist.*

23. Lawrence, L., Boyle, M., Mayo, C., **Rushworth, C.,** Anderson, M., Wallis, D., & Walters, J. *Accepted.* Queering hybrid participatory design: Relational practices and norms for coalition building with rural, LGBTQ+ communities. ACM Participatory Design Conference 2026 (peer-reviewed conference).

22. Boyle, M., Lawrence, L., Walters, J., Wallis, D., **Rushworth, C.,** Quijas Ornelas, M., & Pitti Montenegro, Y. *In preparation.* "Creating an atmosphere of care:" Co-design for a community action planning workshop on LGBTQ+ well-being in northern Utah. Target journal: *Journal of Community Engagement and Scholarship.*

21. **Sandstedt, G.** and **C.A. Rushworth.** In review. Heterosis across environmental and genomic space. *Evolution.* bioRxiv preprint: https://doi.org/10.1101/2024.09.06.611759.

20. Thompson, K.A., Y. Brandvain, J.M. Coughlan, K.E. Delmore, H. Justen, C.R. Linnen, D. Ortiz-Barrientos, **C.A. Rushworth,** H. Schneemann, M. Schumer, and R. Stelkens. 2024. The Ecology of Hybrid Incompatibilities. *Cold Spring Harbor Perspectives in Biology.* doi: 10.1101/cshperspect.a041440.

19. **Rushworth, C.A.,** M.R. Wagner, T. Mitchell-Olds, and J.T. Anderson. 2022. The *Boechera* model system for evolutionary ecology. *American Journal of Botany* 109(11):1939-1961. https://doi.org/10.1002/ajb2.16090.

18. **Rushworth, C.A.,** A. Wardlaw, J. Ross-Ibarra, and Y. Brandvain. 2022. Conflict over fertilization underlies the transient evolution of reinforcement. *PLOS Biology* 20(10): e3001814. https://doi.org/10.1371/journal.pbio.3001814.

17. Carley, L.N., J.P. Mojica, B. Wang, C.-Y. Chen, Y.-P. Lin, K.V.S.K. Prasad, E. Chan, C.-W. Hsu, R. Keith, C.L. Nuñez, C.F. Olson-Manning, **C.A. Rushworth,** M.R. Wagner, J. Wang, P.-M. Yeh, M. Reichelt, K. Ghattas, J. Gershenzon, C.-R. Lee, and T. Mitchell-Olds. 2021. Ecological factors influence balancing selection on leaf chemical profiles of a wildflower. *Nature Ecology and Evolution* 5(8): 1135-1144. https://doi.org/10.1038/s41559-021-01486-0. Epub 2021 Jun 17.

16. **Rushworth, C.A.,** R.S. Baucom, B.K. Blackman, M. Neiman, M.E. Orive, A. Sethuraman, J. Ware, and D.R. Matute. 2021. Who are we now? A demographic assessment of the evolution societies. *Evolution* 75(2): 208-218 https://onlinelibrary.wiley.com/doi/10.1111/evo.14168.

15. **Rushworth, C.A.,** and T. Mitchell-Olds. 2021. The evolution of sex is tempered by costly hybridization in *Boechera* (rock cress). *Journal of Heredity* 112(1): 67-77 https://doi.org/10.1093/jhered/esaa041.

14. **Rushworth, C.A.,** Y. J. Brandvain, and T. Mitchell-Olds. 2020. Identifying the fitness consequences of sex in complex natural environments. *Evolution Letters* 4-6: 516-529. https://dx.doi.org/10.1002/evl3.194

13. Jordon-Thaden, I., J. Beck, **C.A. Rushworth,** M.D. Windham, N. Diaz, J. Cantley, C. Martine, and C.J. Rothfels. 2020. RADseq for any lab: a basic two-enzyme protocol performs well in herbarium and silica-dried tissues across four genera. *Applications in Plant Sciences* 8(4): e11344.

12. **Rushworth, C.A.,** M.D. Windham, R.A. Keith, and T. Mitchell-Olds. 2018. Ecological differentiation facilitates fine-scale coexistence of sexual and asexual *Boechera. Amer Journal of Botany* 105(12): 1-14.

11. Kliver, S., M. Rayko, A. Komissarov, E. Bakin, D. Zhernakova, K.V.S. Prasad, **C.A. Rushworth,** R. Baskar, D. Smetanin, J. Schmutz, D.S. Rokhsar, T. Mitchell-Olds, U. Grossniklaus, and V. Brukhin. 2018. Assembly of the *Boechera retrofracta* genome and evolutionary analysis of apomixis-associated genes. *Genes* 9(4): 185.

10. Moore, G., P. Zika, and **C.A. Rushworth.** Balsaminaceae. 1993+. Flora of North America Editorial Committee, eds. Flora of North America North of Mexico. New York and Oxford. Vol. 13.

9. Li, F.-W., **C.A. Rushworth,** J.B. Beck, and M.D. Windham. 2017. *Boechera* Microsatellite Website: an online portal for species identification and determination of hybrid parentage. *Database* 1: baw169.

8. Cai, L., Z. Xi, K. Peterson, **C.A. Rushworth,** J. Beaulieu, and C.C. Davis. 2016. Phylogeny of Elatinaceae and the tropical Gondwanan origin of the Centroplacaceae (Malpighiaceae, Elatinaceae) Clade. *PLOS ONE* 11(9): e0161881.

7. Windham, M.D., J.B. Beck, F.-W. Li, L. Allphin, J.G. Carman, **C.A. Rushworth,** E.M. Sigel, P. Alexander, C.D. Bailey, I.A. Al-Shehbaz. 2015. Searching for diamonds in the apomictic rough. I: Do rare sexual populations of *Boechera lignifera* (Brassicaceae) represent a distinct species? *Systematic Botany* 40(4): 1031-1044.

6. Anderson, J.T., M.R. Wagner, **C.A. Rushworth,** K. Prasad, and T. Mitchell-Olds. 2014. The evolution of quantitative traits in complex environments. *Heredity* 112:4-12.

5. Anderson, J.T., C.-R. Lee, **C.A. Rushworth,** R.I. Colautti, and T. Mitchell-Olds. 2013. Genetic tradeoffs and conditional neutrality contribute to local adaptation. *Molecular Ecology* 22(3): 699-708.

4. Moore, G., P.F. Zika, and **C.A. Rushworth.** 2012. *Impatiens ecornuta,* a new name for *Impatiens ecalcarata* (Balsaminaceae), a jewelweed from the United States and Canada. *Novon* 22(1): 60-61.

3. Beck, J.B., P.J. Alexander, L. Allphin, I.A. Al-Shehbaz, **C.A. Rushworth,** C. D. Bailey, and M.D. Windham. 2012. Does hybridization drive the transition to asexuality in diploid *Boechera*? *Evolution* 66(4): 985-995.

2. **Rushworth, C.A.,** B.-H. Song, C.-R. Lee, and T. Mitchell-Olds. 2011. *Boechera*, a model system for ecological genomics. *Molecular Ecology* 20(23): 4843-4857.

1. Soltis, D.E., S.A. Smith, N. Cellinese, K.J. Wurdack, D.C. Tank, S.F. Brockington, N.F. Refulio-Rodriguez, J.B. Walker, M.J. Moore, B.S. Carlsward, C.D. Bell, M. Latvis, S. Crawley, C. Black, D. Diouf, Z. Xi, **C.A. Rushworth,** M.A. Gitzendanner, K.J. Sytsma, Y.-L. Qiu, K.W. Hilu, C.C. Davis, M.J. Sanderson, R.S. Beaman, R.G. Olmstead, W.S. Judd, M.J. Donoghue, and P.S. Soltis. 2011. Angiosperm phylogeny: 17 genes, 640 taxa. *American Journal of Botany* 98:704-730.

Non-peer reviewed PUBLICATIONS

5. Boyle, M., Wallis, D., Quijas Ornelas, M., Walters, J., Pitti Montenegro, Y., Lawrence, L., and **Rushworth, C.** *In preparation.* Assessing solutions to support LGBTQ+ well-being in northern Utah: Findings from a community-engaged research project. Prepared for the Transforming Communities Institute.

4. Pitti Montenegro, Y., M. Boyle, L. Lawrence, M. Quijas Ornelas, J. Walters, D. Wallis, and **C. Rushworth**. 2025. Findings from a community action planning workshop on LGBTQ+ well-being in northern Utah. Bear River Region LGBTQ+ Community Coalition, Transforming Communities Institute, and Logan Pride Foundation.

3. Moore, G. and **C. Rushworth.** 2008. Proposals to amend the Code regarding orthographic conservation. *Taxon* 57(1): 316-317.

2. Moore, G., **C. Rushworth,** J. Ma and S. Glenn. 2006. Interactive keys to the woody plants of the New York Metropolitan region. Brooklyn Botanic Garden.

1. Moore, G., **C. Rushworth,** J. Ma and S. Glenn. 2006. Interactive keys to the woody plants of New York State. Brooklyn Botanic Garden.

GRANTS, AWARDS, FELLOWSHIPS, and HONORS

Grants and Awards

2026 NSF IOS EDGE (**submitted** September 2026; $2,012,023; Lead PI, $1,039,066 to USU)
2025 NSF EDGE-CMT (ranked high priority, **declined;** $2,012,023; Lead PI, $1,039,066 to USU)

2025 Simons Foundation Collaborations in Ecology and Evolution (**declined;** co-PI, ~$4,000,000 budget)
Title: *Determining the phenotypic, genomic, and transcriptomic mechanisms of heterosis across natural environments*
2025, 2024 NIH MIRA ESI (Panel score: 43, **declined;** Sole PI, $1,980,000 budget)
Title: *The Ecological Context of Hybridization*
2025 USU College of Arts and Sciences Catalyst Grant (**awarded;** Sole PI, $8,000)
2025 USU Office of Research Seed Grant (**declined;** Sole PI, $29,910)
Title: *Genomic approaches to understanding hybrid adaptation*
2024, 2023, 2022 NSF BIO-LEAPS Implementation Proposal (**program terminated Jan. 2025;** $2,000,000 budget; co-PI, $100,000 to USU)
Title: *LEADSS- A program to promote inclusive leadership for equity and diversity through scientific societies*
2023 Utah Agricultural Experiment Station Seed Grant (**declined;** Sole PI, $79,906)
Title: *Assessing genetic and phenotypic potential for climate change adaptation in a widespread mustard native to Utah sagebrush steppe*
2023 Utah Agricultural Experiment Station Equipment Grant (**awarded;** $7,225)
2022 Utah Agricultural Experiment Station Project (**awarded;** $20,000)
Title: *Characterizing patterns of diversity and gene flow of a native wildflower in rapidly changing environments*
2015 Professional Development Grant, Duke University Graduate School
2014 J.S. Karling Graduate Student Research Award, Botanical Society of America
2013 NSF Doctoral Dissertation Improvement Grant, Evolutionary Processes Program
2013 ASN Student Research Award, American Society of Naturalists

Fellowships
2022 – 2023 NSF Postdoctoral Research Fellowship in Biology to G. Sandstedt (sponsoring scientist)
2011 – 2015 NSF Graduate Research Fellowship
2014 Katherine Goodman Stern Fellowship, Duke University
2013 Torrey Botanical Society Graduate Student Research Fellowship, Torrey Botanical Society
2010 NSF Graduate Research Fellowship Program Honorable Mention
2009 Biology Graduate Student Fellowship, Duke University

Honors
2025 Faculty Service Award, Utah State University College of Arts and Sciences
2025 Faculty Service Award, Utah State University Biology Department
2020 Postdoc Service to Community Award, University of Minnesota College of Biological Sciences

TEACHING AND MENTORSHIP

Teaching experience

Spring 2027, USU: *Instructor of Record,* Graduate Evolution
Spring 2026, USU: *Instructor of Record,* Natural Selection (special topics seminar)
Fall 2023-2027, USU: *Instructor of Record,* Evolutionary Biology
Spring 2023-2025, USU: *Co-Instructor of Record,* Organismal Biology and Physiology
Spring 2020, UC Davis: *Instructor of Record,* Introduction to Evolution (220 student enrollment)
Spring 2015, Duke: *Co-creator and co-Instructor of Record*, Prof. Development for Careers in Biology

Spring 2014, Duke: *Co-creator and co-Instructor of Record,* People Management: The Key to Successful Research Post-PhD (half semester course)
Spring 2013, Duke: *Teaching assistant and Lab instructor*, Introduction to Genetics and Evolution

Guest lecturer
Spring 2026, USU: Professional Development for Graduate Students
Spring 2021, UC Berkeley: Plant Evolution and Diversity
Spring 2017, UC Berkeley: Plant Systematics

Mentorship

Gabrielle Sandstedt, NSF PGRP Postdoctoral Fellow	2022-2024
Kallol Mozumdar, MS student	2022-current
Mia Stevens, PhD student	2023-current
Theophilus Addo, incoming PhD student	2026-current

Graduate student committees

Brian Kissmer, Colleen Meidt, Emily Burgess	2022-current
Bhagya Amarasinghe, Chinedum Anajemba, Anthony Reis	2023-current
Mirajul Islam	2024-current
Julia Hobbie	2025-current
Michael Procko	2026-current

Undergraduate students

Cole Keele, Julia Freeman	2026-current
Emily Kuehnl, Charlie Cook	2025-current
Thaddeus Miller	2023-current
Laura Patterson	2023-2025
Ben Eissler	2023-2024
Adam Merrill, Cole Forsberg, Rivers Tullis	2024
Judith Okoro, Eunice Kim (now PhD student, Stonybrook University)	2016-2018
Rui-Min "Diana" Mao (now surgery resident, UT Galveston)	2012-2015
Dhivyaa Mailvaganam, Rachel Patterson, Matthew Lide, Samuel Chin, Mathias Skadow	one year each

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INVITED PRESENTATIONS & SYMPOSIA

2027 ***Speciation*** *Gordon Research Conference* invited Discussion Leader, Tuscany, Italy
2026 UC Riverside, Ecology, Evolutionary and Organismal Biology departmental seminar
2025 Purdue University Botany and Plant Pathology departmental seminar
2025 North Carolina State University Plant and Microbial Biology departmental seminar
2025 Iowa State University Ecology, Evolution, and Organismal Biology departmental seminar
2025 *Plant Ecological Genetics International Symposium* invited speaker, University of Cologne, Germany
2023 *Canadian Society for the Study of Evolution* symposium "Ecological dimensions of hybridization"

2022 Michigan State University, Plant Biology departmental seminar, student-invited speaker
2022 University of Wisconsin Green Bay, Natural and Applied Sciences departmental seminar
2022 Indiana University, Biology departmental seminar
2021 Yale University, Ecology and Evolutionary Biology departmental seminar
2021 Symposium organizer and speaker, *Botany 2021* "The Hills are Alive: Ecology and Evolution of the Intermountain West Flora"
2021 University of Kansas, Biology departmental seminar
2021 Northern Arizona University, Biology departmental seminar
2020 Queen's University, Biology departmental seminar
2020 North Carolina State University, INTRINSyC Plant Biology seminar
2020 University of California Berkeley, Integrative Biology departmental seminar
2019 AGA President's Symposium "Sex and Asex: The genetics of complex life cycles"
2018 Cornell University, CALS Plant Biology Section seminar
2018 University of Montana, UNVEIL seminar
2018 University of California Davis, Center for Population Biology special seminar

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SERVICE

Committee service

Society for the Study of Evolution (SSE)
Chair: Nominating Committee (2025; member 2022 – 2025)
Member: ACCESS+ working group (focused on evidence-based policy and culture change to incorporate DEI in professional societies) (2022 – 2024)
Co-chair: SSE Diversity Committee, 2019 – 2022 (member 2017 – 2023)
Responsibilities/tasks: Worked with SSE Council to implement DEI in societal leadership and governance; designed and implemented collection of memberships demographic data; created and implemented society action plans; worked with *Evolution* Editor in Chief to implement DEI in editorial board selection, mentoring, and publication; coordinated Evolution conference events relevant to DEI
Founder, Chair, and Member: SSE Graduate Student Advisory Council (2013 – 2017)
Co-organizer: Diversity in Science and Women in Science luncheons (Evolution 2016, 2017, 2018)

Utah State University
Member: College of Arts and Sciences Steering Committee (2025 – current)
Chair: Biology Department Community Excellence Committee (2025 – current; member, 2022 – current)
Member: Biology Department Graduate Programs Committee (2024 – 2025)
Member: Biology Department Curriculum Committee (2023 – 2024)
Member: College of Science JEDI Collaboratory (2022 – 2023; defunct)

Outreach

EvoAlly, Evolution 2024
Mentor: Undergraduate Diversity at Evolution program, Evolution, 2024
Organizer: Botany Lunch seminar series, UC Berkeley, 2017 – 2018

Herbarium volunteer: University of California Berkeley "Cal Day," 2016
Member: Biology Steering Committee, Duke University, 2012 – 2013

Reviewer service

Journals: *American Journal of Botany, Annals of Botany, Current Biology, Evolution, Evolution Letters, Frontiers in Plant Science, Genes, Journal of Heredity, Journal of Evolutionary Biology, Molecular Ecology, New Phytologist, PLOS ONE, PNAS, Proceedings of the Royal Society B, Trends in Ecology and Evolution*
Federal funding proposals: NSERC Discovery Award ad hoc reviewer (2026), NSF DEB panelist (2023), NSF DEB *ad hoc* reviewer (2022, 2023)
Other funding proposals: USU Utah Agricultural Experimental Station *ad hoc* reviewer (2026), USU Ecology Center graduate student grant *ad hoc* reviewer (2025), SSE Graduate Research Excellence Awards reviewer (2024)

PROFESSIONAL MEMBERSHIPS

Society for the Study of Evolution, American Society of Naturalists, Botanical Society of America, American Genetic Association