

CURRICULUM VITAE – CAROLYN D. K. GRAHAM, PHD

Department of Biological Sciences, University at Buffalo

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CURRENT APPOINTMENT

Postdoctoral Researcher, Biology Education Research 2025 – present
University at Buffalo, Buffalo, NY
Advisor: Robin A. Costello

EDUCATION

Doctorate, Ecology and Evolutionary Biology May 2025
University of Michigan, Ann Arbor, MI, USA
Dissertation committee: Marjorie Weber (chair), Regina Baucom, Selena Smith, and William Wetzel
Completed first two years of PhD at Michigan State University under Marjorie Weber

Bachelor of Science, Biochemistry and Molecular Biology, Summa Cum Laude 2015 – 2019
Lyman Briggs College and Honors College, Michigan State University, East Lansing, MI
History, Philosophy, and Sociology of Science Minor

PUBLICATIONS

Graham, C. D. K., Yerks*, A. Y., Molino*, S., and Weber, M. G. Characterizing the phylogenetic and geographic distribution of calcium oxalate crystals in vascular plants. In prep for submission to *New Phytologist*. *undergraduate author

Graham, C. D. K., Molino*, S., Yerks*, A. Y., and Weber, M. Characterizing the causes and consequences of calcium oxalate crystal presence in *Vitis riparia*. Accepted at the *American Journal of Botany*. *undergraduate author

Graham, C. D. K., L. R. Bailey*, A. E. Cole*, A. M. Cress*, E. Dawson-Glass, B. D. Duke*, L. J. Estill*, L. D. Jones*, G. R. Leon*, S. Molino*, N. G. Paton*, A. J. Soule, C. A. Talbot*, A. L. Yerks*, and M. G. Weber (2025). Mite Domatia and Associated Mite Density in a North American Eastern Deciduous Forest in Michigan. *Ecology and Evolution*. 15:1–12. <https://doi.org/10.1002/ece3.71379> *undergraduate author

Graham, C. D. K., and M. G. Weber (2025). Evolutionary trajectories of multiple defense traits across phylogenetic and geographic scales in *Vitis*. *Ecography*. e07722:1–12.
<https://doi.org/10.1002/ecog.07722>

Ritter, Eleanore J., **Graham, C. D. K.**, Niederhuth, C., and Weber, M. G. (2025). Small, but mitey: Investigating the molecular genetic basis for mite domatia development and intraspecific variation in *Vitis riparia* using transcriptomics. *New Phytologist*, 245, 215–231. <https://doi.org/10.1111/nph.20226>

Graham, C. D. K., Forrestel, E. J., Schillmiller, A. L., Zemenick, A. T., & Weber, M. G. (2023). Evolutionary signatures of a trade-off in direct and indirect defenses across the wild grape genus, *Vitis*. *Evolution*, 77(10), 2301–2313. <https://doi.org/10.1093/evolut/qqad140>

Graham, C. D. K., Warneke, C. R., Weber, M., & Brudvig, L. A. (2022). The impact of habitat fragmentation on domatia-dwelling mites and a mite-plant-fungus tritrophic interaction. *Landscape Ecology*, 37(12), 3029–3041. <https://doi.org/10.1007/s10980-022-01529-2>

AWARDS AND FELLOWSHIPS

UM EEB Excellence in Mentoring Award	2025
National Science Foundation Graduate Research Fellowship Program – Honorable Mention	2022
Paul Taylor Endowment Travel Award - \$1,586	2022
Michigan State EEB Summer Fellowship - \$1,875	2022
COGS Conference Award - \$300	2022
James E. Rodman Endowment Fellowship - \$3,600	2021
Michigan State University College of Natural Sciences Recruiting Fellowship - \$38,000	2020

GRANTS

University at Buffalo LAUNCH Grant - \$15,000	2025
Rackham Conference Travel Grant - \$1,053	2024
Rackham Graduate Student Research Grant - \$1,500	2023
EEB Block Grant - \$820	2023
Rackham Conference Travel Grant - \$900	2022
EEB Travel Grant - \$400	2022, 2023, 2024, 2025
EEB Professional Horizons Grant - \$500	2022
Rocky Mountain Biological Laboratory REU Travel Grant - \$1,200	2019

PRESENTATIONS

“Building adaptive responses to unexpected results using authentic data in the undergraduate classroom.” **Carolyn Graham**, Melissa Kjelvik, Elizabeth Schultheis, and Robin Costello. Poster presented at the Society for the Advancement of Biology Education Research in July of 2025.

“Inducibility of calcium oxalate crystals in *Vitis riparia*.” Samantha Molino*, Addison L. Yerks*, **Carolyn D. K. Graham**, and Marjorie G. Weber. Poster presented at the University of Michigan’s Program in Biology Undergraduate Research Symposium in April of 2025. *undergraduate mentee

“No impact of *Vitis riparia* calcium oxalate crystal induction on generalist herbivore.” Addison L. Yerks*, Samantha Molino*, **Carolyn D. K. Graham**, and Marjorie G. Weber. Poster presented at the University of Michigan’s Program in Biology Undergraduate Research Symposium in April of 2025.

*undergraduate mentee

“Domatia on cinnamon fern attract mutualistic mites.” Samantha Molino*, **Carolyn D. K. Graham**, and Marjorie G. Weber. Poster presented at the Wildflower Association of Michigan Native Plant Conference in March of 2025. *undergraduate mentee

“The distribution of calcium oxalate crystals in plants.” **Carolyn D. K. Graham** and Marjorie G. Weber. Poster presented at the Gordon Research Conference on Plant-Herbivore Interaction in February of 2025.

“Uncovering the functions of calcium oxalate crystals in plants.” **Carolyn D. K. Graham**. Invited webinar at St Mary’s College in October 2024.

“Elucidating the functions of calcium oxalate crystals in *Vitis*.” **Carolyn D. K. Graham** and Marjorie G. Weber. Talk presented at the Symposium on Insect-Plant Relationships in August of 2024 in Bielefeld, Germany.

“Elucidating the defensive functions of calcium oxalate crystals in *Vitis*.” **Carolyn D. K. Graham** and Marjorie G. Weber. Talk presented at the Botanical Society of America conference in June 2024.

“Patterns of multivariate defensive trait evolution across scales in wild grape.” **Carolyn D. K. Graham** and Marjorie G. Weber. Talk presented at the Evolution meeting of June 2023.

“Patterns of multivariate defensive trait evolution across scales in *Vitis*.” **Carolyn D. K. Graham** and Marjorie G. Weber. Poster presented at the Gordon Research Conference on Plant-Herbivore Interaction in February of 2023.

“Multivariate defensive trait evolution across scales in *Vitis*.” **Carolyn D. K. Graham** and Marjorie G. Weber. Talk presented at the Evolution meeting in June of 2022.

“The impact of habitat fragmentation on abundance and richness of domatia-dwelling mites.” **Carolyn D. K. Graham**, Christopher R. Warneke, Marjorie G. Weber, and Lars Brudvig. Poster presented at the Ecological Society of America’s Annual Meeting in August of 2019.

“Effects of habitat fragmentation on a tritrophic plant-mite-fungal interaction.” Christopher R. Warneke, **Carolyn D. K. Graham**, Marjorie G. Weber, and Lars A. Brudvig. Poster presented at the Ecological Society of America’s Annual Meeting in August of 2019.

TEACHING AND MENTORSHIP

Guest Instructor , BIO 425/525 - Special Topics: Introduction to STEM Education College of Arts and Sciences, University at Buffalo, Buffalo, NY	Fall 2025
Guest Instructor , EEB 405 - Insights from Trees University of Michigan Biological Station, Pellston, MI	Summer 2024
Graduate Student Instructor , EEB 410 - Capstone Seminar College of Literature, Science, and the Arts, University of Michigan, Ann Arbor, MI	Winter 2023
Teaching Assistant , IBIO 355L - Ecology Laboratory College of Natural Science, Michigan State University, East Lansing, MI	Fall 2021
Learning Assistant , LB 171L & LB 172L - Chemistry I & II Laboratory Lyman Briggs College, Michigan State University, East Lansing, MI	Fall 2018 – Spring 2019

UNDERGRADUATE MENTEES

[9] Abigail Lantry (University at Buffalo undergraduate researcher 2025-present) [8] Justin Uralil (University at Buffalo undergraduate researcher 2025-present) [7] Macey Blum (University at Buffalo undergraduate researcher 2025-present) [6] Addison Yerks (University of Michigan undergraduate researcher 2023-2025) [5] Daniel Molitor (University of Michigan undergraduate researcher 2023) [4] Ryan Cheney (University of Michigan undergraduate researcher 2023) [3] Azreal Vollmar (University of Michigan undergraduate researcher 2023) [2] Samantha Molino (University of Michigan undergraduate researcher 2022-2025) [1] Morgaine Olson (MSU undergraduate researcher 2021-2022)

TEACHING AND OUTREACH TRAINING

Helping Students Succeed by Embracing Failure Workshop, Georgia State University	2025
BSA Workshop on Planting Inquiry, Botanical Society of America	2024
Center for Research on Learning and Teaching Workshop on Disabilities, University of Michigan	2024
Preparing Future Faculty Certificate Program, University of Michigan	awarded 2024
Trans-Inclusive Mentoring Workshop, University of Michigan	2024
Public Engagement Certificate Program, University of Michigan	awarded 2024
Diversity and Inclusive Certificate Program, University of Michigan	awarded 2023
Exploring Alternative Grading Strategies Workshop, University of Michigan	2023

PROFESSIONAL SOCIETIES

Society for the Advancement of Biology Education Research	2024 – present
Botanical Society of America	2024 – present
Society for the Study of Evolution	2021 – 2023
Ecological Society of America	2019

SERVICE AND OUTREACH

Advisory Board Member , Project Biodiversify	2025 – present
President , EEB Graduate Student Organization at UM	2024 – 2025
Departmental Steward , Graduate Employees Organization at UM	2023 – 2025
Secretary , Bat Association of MSU	2021 – 2022
Graduate Committee Representative , Plant Biology Graduate Student Organization	2021 – 2022

PROFESSIONAL REFERENCES

Robin Costello, Postdoctoral Advisor
Assistant Professor, Department of Biological Sciences, University at Buffalo
robincos@buffalo.edu, 813-362-9530

Marjorie Weber, PhD Advisor and Co-author
Associate Professor, Department of Ecology and Evolutionary Biology, University of Michigan
webermg@umich.edu, 313-402-6586

Regina Baucom, PhD Committee Member and Secondary Advisor
Professor, Department of Ecology and Evolutionary Biology, University of Michigan
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Elizabeth Schultheis and Melissa Kjelvik, Founders of Data Nuggets
Education & Outreach Coordinator and Research Specialist, Michigan State University
datanuggetsk16@gmail.com