

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., Molino*, S., Yerks*, A. Y., and Weber, M. Characterizing the causes and consequences of calcium oxalate crystal presence in *Vitis riparia*. In prep. *undergraduate author

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. *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. *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* (In press). 1–12.

Ritter, Eleanore J., **Graham, C. D. K.**, Niederhuth, C., and Weber, M. G. (2024). 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://nph.onlinelibrary.wiley.com/doi/full/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/qpad140>

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

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

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

“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.

“Multivariate defensive trait evolution across scales in *Vitis*.” **Carolyn D. K. Graham** and Marjorie G. Weber. Talk presented at Michigan State University’s Ecology, Evolution, and Behavior Symposium in May 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.

“Trade-offs between chemical defense and mutualistic mite biotic defense across the genus *Vitis*.” **Carolyn Graham** and Marjorie Weber. Poster and talk presented at the Mid-Michigan Symposium for Undergraduate Research Experiences and the MSU Plant Genomics Symposium in July of 2019.

“How does habitat fragmentation impact the abundance and richness of plant-dwelling mites?” **Carolyn Graham**, Christopher Warneke, Marjorie Weber, and Lars Brudvig. Poster presented at the University Undergraduate Research Forum and the Lyman Briggs College Annual Research Symposium at MSU in April 2019.

“Greater competitive ability in *Phytolacca* at lower latitudes: A test of the biotic interactions hypothesis.” **Carolyn Graham**, Carina Baskett, and Marjorie Weber. Poster presented at the University Undergraduate Research and Arts Forum at MSU in April of 2018.

TEACHING AND MENTORSHIP

Guest Instructor, EEB 405 - Insights from Trees Summer 2024
University of Michigan Biological Station, Pellston, MI

Graduate Student Instructor, EEB 410 - Capstone Seminar Winter 2023
College of Literature, Science, and the Arts, University of Michigan, Ann Arbor, MI

Teaching Assistant, IBIO 355L - Ecology Laboratory Fall 2021
College of Natural Science, Michigan State University, East Lansing, MI

Learning Assistant, LB 171L & LB 172L - Chemistry I & II Laboratory Fall 2018 – Spring 2019
Lyman Briggs College, Michigan State University, East Lansing, MI

UNDERGRADUATE MENTEES

[6] Addison Yerks (University of Michigan undergraduate researcher 2023-present) [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-present) [1] Morgaine Olson (MSU undergraduate researcher 2021-2022)

TEACHING AND OUTREACH TRAINING

Preparing Future Faculty Certificate Program, University of Michigan 2024
Public Engagement Certificate Program, University of Michigan 2023 – 2024
Diversity and Inclusive Teaching 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

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

PROFESSIONAL REFERENCES

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

rsbaucom@umich.edu, 734-647-8490

Lars Brudvig, REU Research Advisor and Co-author

Professor, Department of Plant Biology, Michigan State University

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