Olivia L. Cope, Ph.D.

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Education

Ph.D., Integrative Biology, University of Wisconsin-Madison, 2015-2020

B.S., Genetics and Plant Biology, University of California, Berkeley, 2011-2015

Professional Experience

Assistant Professor of Biology, Pacific Lutheran University, 2025-Present

Assistant Professor of Biology, Whitworth University, 2021-2025

NSF Postdoctoral Research Fellow, Michigan State University, 2020-2021

Fellowships and Professional Honors

Most Influential Professor, voted by Whitworth University class of 2025

Pam Corpron Parker Memorial Fellowship, Whitworth University, 2022

National Science Foundation Postdoctoral Research Fellowship in Biology, 2020

National Science Foundation Graduate Research Fellowship, 2016

Teaching

Ecology and Environmental Science: Introduction to Field Studies, Introduction to Environmental Science, Ecological Analysis, Central American Field Ecology

Plant and Insect Biology: Plant Taxonomy, Plant Physiology, Plants in Culture, Plant-Animal Interactions, Entomology

General Biology: Organismal Diversity, Statistical Applications for Biology, Introduction to Genetics

Publications

Dallabetta, AG, EM Mauch, and OL Cope. (In Press). Tracing intraspecific variation in milkweed functional traits back to germination timing. Northwest Science.

Cope, OL and WC Wetzel. 2025. Heat waves reduce variability in milkweed development, simplify arthropod communities, and suppress herbivory. Oecologia 207:91. DOI: 10.1007/s00442-025-05733-0

Robinson, ML, [et al., including Cope, OL]. 2023. Plant size, latitude, and phylogeny explain variability in global herbivory. Science 381:679-683. DOI: 10.1126/science.adh8830

Cope, OL, LN Zehr, AA Agrawal, and WC Wetzel. 2023. The timing of heat waves has multiyear impacts on milkweed and its insect community. Ecology 104(4):e3988. DOI: 10.1002/ecy.3988.

Cope, OL, LA Burkle, JR Croy, KA Mooney, LH Yang, and WC Wetzel. 2022. The role of timing in intraspecific trait ecology. Trends in Ecology & Evolution 37(11):997-1005. DOI: 10.1016/j.tree.2022.07.003

Cope, OL, K Keefover-Ring, EL Kruger, and RL Lindroth. 2021. Growth-defense tradeoffs shape the genetic composition of aspen forests. Proceedings of the National Academy of Sciences 118(37): e2103162118. DOI: 10.1073/pnas.2103162118

Cope, OL, RL Lindroth, A Helm, K Keefover-Ring, and EL Kruger. 2021. Trait plasticity and tradeoffs shape intraspecific variation in competitive response in a foundation tree species. New Phytologist 230(2):710-719. DOI: 10.1111/nph.17166

Cope, OL, Z Becker, PJ Ode, RL Paul, and IS Pearse. 2020. Associational effects of plant ontogeny on damage by a specialist insect herbivore. Oecologia 193(3):593-602. DOI: 10.1007/s00442-020-04702-z

Cope, OL, KF Rubert-Nason, EL Kruger, and RL Lindroth. 2019. Chemical defense at decadal scales: ontogenetic trajectories and consequences for fitness in a foundation tree species. Functional Ecology 33:2105-2115. DOI: 10.1111/1365‐2435.13425

Cope, OL, and RL Lindroth. 2018. Clonal saplings of trembling aspen do not coordinate defense induction. Journal of Chemical Ecology 44(11):1045-1050. DOI: 10.1007/s10886-018-1006-5

Funding

McDonald Opportunity Scholar Program, 2023-2024, $3,300

- Funding toward mentored laboratory assistant positions for students with financial need.

Murdock College Research Program for Natural Sciences, 2023, $68,227

- Title: “A temporally‐explicit approach for better understanding the ecology of intraspecific diversity”.

Washington Native Plant Society Northeast Chapter Student Grant, 2022, $500

- Title: “Chemical characterization of showy milkweed (*Asclepias speciosa*) during different life stages”. Student mentee: Emily Mauch.

LI-COR Environmental Education Fund, 2021, $4,210

- Funding toward purchase of a porometer/fluorometer instrument for teaching and research use.

NSF Graduate Research Internship Program, 2019, $5,000

- Title: “Plant and insect invasions and novel host use”.

Presentations

(*undergraduate mentee presenting)

Invited:

Cope, OL. “The importance of timing for plant defense against herbivores.” Eastern Washington University Department of Biology. 28 February 2025, Cheney, WA.

Cope, OL. “How timing matters in plant-herbivore interactions.” University of Idaho Department of Entomology, Plant Pathology, and Nematology. 18 November 2024, Moscow, ID.

Cope OL. “Distinctive roles of timing-based trait variation in plant-herbivore interactions”. Ecological Society of America Meeting. 8 August 2023, Portland, OR.

*Mauch E, Dallabetta A, and Cope OL. “Chemical characterization of showy milkweed (*Asclepias speciosa*) during different life stages”. Washington Native Plant Society, 21 February 2023, Spokane, WA.

Cope OL. “Plant defense against herbivore attack: Timing matters”. Gonzaga University Department of Biology, 17 February 2023, Spokane, WA.

Cope OL. “Can’t run, can’t hide: How plants defend themselves.” Whitworth University Faculty Scholarship Forum, 20 October 2022, Spokane, WA.

Cope OL. “Multiple roles of timing in plant-insect interactions”. Michigan State University Department of Entomology, 29 November 2021, Online.

Cope OL. “Drivers of intraspecific variation in plant defense against herbivores”. Wisconsin Ecology Symposium, 29 April 2020, Madison, WI. *Cancelled due to COVID-19

Cope OL. “What drives within-species variation in plant defense?” Colorado State University Department of Bioagricultural Sciences and Pest Management, 23 Oct. 2019, Fort Collins CO.

Contributed:

*Heid E, Milan J, and Cope OL. “Factors affecting success of biocontrol of diffuse knapweed (*Centaurea diffusa*)”. National Forum on Biological Control. 16 April 2025, Annapolis, MD.

*Bayasgalan U, Heid E, Shea S, Davis E, and Cope OL. “Age and genetic diversity of *Artemisia tridentata* populations support similar arthropod diversity”. Murdock College Science Research Conference. 8 November 2024, Vancouver, WA.

*Heid E, Milan J, and Cope OL. “Factors affecting success of biocontrol of diffuse knapweed”. Murdock College Science Research Conference. 8 November 2024, Vancouver, WA.

*Majojo M, Bekalu Y, Heid E, Neuberger N, and Cope OL. “Stomatal conductance is consistent across subspecies and biotic environments in big sagebrush (*Artemisia tridentata*)”. Murdock College Science Research Conference. 12 November 2023, Vancouver, WA.

Cope OL and Wetzel WC. “Heat waves synchronize plant populations and reduce arthropod richness and herbivory”. Gordon Research Conference on Plant-Herbivore Interactions. 27 February 2023, Ventura, CA.

*Mauch E, Dallabetta A, and Cope OL. "Effects of herbivory on developmental variation in seedling defense chemistry." Murdock College Science Research Conference. 11 November 2022, Vancouver, WA.

*Dallabetta A, Mauch E, and Cope OL. “Emergence timing impacts trait variation in showy milkweed (*Asclepias speciosa)* seedlings across ontogenetic stages.” Murdock College Science Research Conference. 11 November 2022, Vancouver, WA.

Cope OL, Burkle L, Croy J, Mooney K, Weztel WC, and L Yang. “The role of timing in the ecology of intraspecific trait variation in plants”. Ecological Society of America Meeting. 2 August 2021, Online.

Wetzel WC, Robinson ML, Dyer LA, Hahn PG, Inouye BD, Underwood N, Whitehead SR, Zehr L, and the members of The Herbivory Variability Network incl. Cope, OL. “Macroevolutionary and global patterns of intraspecific variability in herbivory: data from the Herbivory Variability Network”. American Society of Naturalists Virtual Asilomar Meeting, 11 January 2021, Online.

Cope OL. “Climate change and the role of plant ontogeny in species interactions.” Michigan State University Plant Resilience Institute Seminar, 27 October 2020, Online.

Cope OL, Kruger EL, Rubert-Nason KF, and RL Lindroth. “Effects of tree ontogeny and genotype on variation in insect resistance in trembling aspen.” Entomological Society of America Meeting, 18 November 2019, St. Louis MO.

Cope OL, K Keefover-Ring, EL Kruger, and RL Lindroth. “Competition-mediated costs of defense and their consequences for aspen populations.” Ecological Society of America Meeting, 15 Aug. 2019, Louisville KY.

Cope OL, K Keefover-Ring, EL Kruger, and RL Lindroth. “Competition-mediated costs of defense shape trajectories of herbivore resistance traits in aspen populations.” Gordon Research Conference on Plant-Herbivore Interactions, 26 Feb. 2019, Ventura CA.

Cope OL, K Keefover-Ring, EL Kruger, and RL Lindroth. “Does competition shape evolutionary trajectories of insect resistance in forest stands?” Entomological Society of America Joint Annual Meeting, 12 Nov. 2018, Vancouver BC.

Cope OL and RL Lindroth. “Clonal ramets of trembling aspen do not coordinate defense induction.” Entomological Society of America North Central Branch Meeting, 19 Mar. 2018, Madison WI.

Cope OL, EL Kruger, KF Rubert-Nason, and RL Lindroth. “Long-term developmental trajectories in herbivore defense in a foundation tree species.” Ecological Society of America Meeting, 10 Aug. 2017, Portland OR.

External Service and Outreach

Peer Reviewer

- Journal of Ecology (2019 x1, 2020 x2), Basic and Applied Ecology (2020 x1), Scientific Reports (2020 x1), Functional Ecology (2021 x1, 2023 x1), Molecular Ecology (2021 x1), Oecologia (2021 x1, 2022 x1), Arthropod-Plant Interactions (2022 x2), Ecology and Evolution (2022 x2, 2025 x2), Quarterly Review of Biology (2022 x1), Annals of Forest Science (2023 x1), Entomologia Experimentalis et Applicata (2024 x2)

Plant Morphology workshop leader, 2025, Spokane Native Plant Stewardship Program

Board member, 2024-2025, Northeast Washington Native Plant Society

Pollinator workshop leader, 2024-2025, Stevens County Conservation District

Entomology guest speaker, 2024, Spokane International Academy

Botany guest speaker, 2023, Spokane Public Montessori School

Forest Entomology guest speaker, 2023 and 2025, Lakeside High School, Nine Mile Falls WA

Suds and Science presenter, 2023, Golden Handle Brewery, Spokane WA

BugTalk Podcast Co-Host, 2021, MSU Entomology

Postdoc Workshop Panelist, 2021, Midwest Ecology and Evolution Conference

Insect Ambassadors Outreach Program Presenter, 2015-2019, UW-Madison Entomology

Institutional Service

Whitworth University New Faculty Program co-leader, 2024-2025

Whitworth University Undergraduate Education Curriculum Committee (UECCo) member, 2022-2025

Whitworth Biology Greenhouse director, 2021-2025

Postdoc Representative, 2020-2021, MSU Entomology Diversity, Equity, and Inclusion Committee

Graduate Representative, 2017-2019, Wisconsin Ecology (campus-wide consortium)

Seminar Chair, 2017-2018, UW-Madison Entomology Graduate Student Association

Outreach Director, 2016-2017, UW-Madison Integrative Biology Graduate Student Organization

Press

"Warm weather brings bugs to the Inland Northwest. Here's what you need to know." 27 April 2023. KHQ TV News.
https://www.khq.com/news/warm-weather-brings-bugs-to-inland-northwest-heres-what-you-need-to-know/video_6fa4ac08-e567-11ed-8a45-539cfccbc57a.html

Baie, J. "Whitworth's greenhouse connects to students at the Spring Plant Sale". 28 April 2022. Through the Curtain.
https://throughthecurtain126.wordpress.com/2022/04/28/whitworths-greenhouse-connects-to-students-at-the-spring-plant-sale/

"Study shows how aspen forests maintain the diversity needed to adapt to changing environments". 21 September 2021. National Science Foundation Research News.
https://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=303509

"Investigating the impact of heatwaves on natural and agricultural ecosystems". 25 September 2020. MSU College of Agriculture and Natural Resources News.
https://www.canr.msu.edu/news/investigating-the-impact-of-heatwaves-on-natural-and-agricultural-ecosystems