

Jesse E. D. Miller

Ecologist and botanist

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EDUCATION AND CERTIFICATION

2016	Ph.D. , Department of Integrative Biology, University of Wisconsin, <i>Madison, Wisconsin</i> Area of focus: Plant ecology; Advisor: Ellen Damschen
2009	Lichenologist certification , Northwest Lichenologists, <i>Selma, Oregon</i>
2006	B.Sc. Botany and sustainable agriculture , The Evergreen State College, <i>Olympia, Washington</i>

ACADEMIC AND PROFESSIONAL POSITIONS

Lead Natural Heritage Botanist, Washington Department of Natural Resources, 2023-
Lecturer, Stanford University, 2018-2022
Postdoctoral researcher, University of California, Davis, 2016-2018, *Davis, CA*
NSF graduate research fellow & graduate assistant, University of Wisconsin, 2012-2016, *Madison, WI*
Field botanist, University of California, Davis, spring-summer 2009 & summer 2010, *Davis, CA*
Lichen technician, Oregon State University, fall 2009 & spring 2010, *Corvallis, OR*
Lichen herbarium curator, Idaho Bureau of Land Management (State Office), winter 2010, *Boise, ID*
Field botanist, Siskiyou Biosurvey, LLC, intermittent 2008-2011, *Eagle Point, OR*
Instructor, Rogue Community College, 2008-2009, *Medford, OR*
Field botanist, Natural Resources Management Corp., 2008, *Eugene, OR*
Field botanist, Pacific Crest Consulting, 2007-2008, *Talent, OR*

FUNDING (Total funded: ~\$414,000)

2022	US National Park Service (Co-author, lead for study design and analysis), Ecology and distributions of rare lichens and bryophytes in Mt. Rainier National Park, \$149,000
2020	US National Park Service (Co-author, lead for study design and analysis), Lichen inventory and visitor-use effects study in Lava Beds National Monument, \$75,998
2017	California Lichen Society, (PI) "Effects of altered fire regimes on chaparral lichens," \$1000
2016	Interagency special status / sensitive species program (Co-author / senior personnel), Effects of fire on oak-dwelling epiphytic lichens. \$25,000
2014	Six Rivers National Forest (Co-author / senior personnel). Characterizing <i>Lobaria oregana</i> canopy distributions and survey detectability. Six Rivers National Forest, \$25,000
2012-2016	National Science Foundation Graduate Research Fellowship, \$132,000
2011-2016	Miscellaneous internal and travel grants, UW-Madison, ~\$6000

AWARDS

2021	Instructor recognition for mentoring winner of Hoefer undergrad. writing award, Stanford, \$500
2019	<i>Letharia</i> award for contributions to California lichenology, California Lichen Society
2018 & 2017	Best oral presentation award, UC Davis Postdoctoral Research Symposium, \$400
2015	Outstanding Student Award (best paper), Ecological Society of America Student Section, \$100
2015	UW-Madison College of Letters and Sciences Teaching Fellow Award, \$1000
2015	Honorable Mention, best student research talk, International Association for Landscape Ecology World Congress, \$150
2015	Best student research talk award, Wisconsin Ecology Spring Symposium, \$500
2015	North Carolina Botanical Garden Award (best student talk), Asc. of SE Biologists meeting, \$300
2015	Honorable mention, Eugene P. Odum Award (best student talk), ESA-SE section
2012	Tuckerman Award for best paper on lichens, Am. Bryological & Lichenological Society, \$500

PUBLICATIONS

Peer-reviewed papers - published or in press:

33. Weeks, J., H. Safford, Z. Steel, **J. E. D. Miller**, E. Batzer. High-severity fire drives floristic homogenization in human-altered forests. 2023. *Ecosphere*, *in press*.
32. Villella, J., L. M. Calabria, B. McCune, **J. E. D. Miller**, S. Sharrett. An annotated list of lichens and allied fungi in Oregon's Opal Creek Wilderness and adjacent areas: Pre-fire baseline. 2023. *Evansia*, *in press*.
31. **Miller, J. E. D.**, S. Copeland, K. Davies, B. Anacker, H. Safford and S. Harrison. 2022. Plant community data from a statewide survey of paired serpentine and non-serpentine soils in California, USA. *Ecology* 103(6): e3644.
30. Brodie, E., **J. E. D. Miller**, and H. Safford. 2021. Productivity modifies the effects of fire severity on understory diversity. *Ecology* 102(11): e03514.
29. **Miller, J. E. D.***, A. Weill*, and J. Villella. 2021. Increasing fire frequency reduces lichen diversity in a high-severity fire-adapted ecosystem. *Diversity and Distributions* 28: 454– 462. (*Equal contributions)
28. Armstrong, C., **J. E. D. Miller**, A. McAlvey, D. Lepofsky, N. Turner, and M. Ritchie. 2021. Plant diversity and functional traits reflect ancient forest garden history. *Ecology and Society* 26(2): 6.
27. **Miller, J. E. D.** and H. Safford. 2020. Are plant community responses to wildfire contingent upon historical disturbance regimes? *Global Ecology and Biogeography* 29(10): 1621-1633.
26. **Miller, J. E. D.**, J. Villella, D. Stone, A. Hardman. 2020. Using lichens as indicators of forest age and conservation value. *Forest Ecology and Management* 475: 118436.
25. Safford, H. & **J. E. D. Miller**. 2020. An updated database of serpentine endemism in the California flora. *Madroño* 67(2): 85-104.
24. Kattke, G., G. Bönisch, S. Díaz, S. Lavorel, I. C. Prentice, P. Leadley, S. Tautenhahn, G. D. A. Werner...**J. E. D. Miller**...*et al.* (729 authors). 2020. TRY plant trait database – enhanced coverage and open access. *Global Change Biology* 26(1): 119-188.
24. Villella, J., **J. E. D. Miller**, A. Young, G. Carrey, A. Emanuels, and W. Miller. 2020. Tardigrades in the canopy: Associations with tree vole nests in southwest Oregon. *Northwest Science* 94(1): 24-30.
23. Li, D., **J. E. D. Miller**, and S. Harrison. 2019. Climate drives loss of phylogenetic diversity in a grassland community. *Proceedings of the National Academy of Sciences* 116(40): 19989-19994.
22. Root, H., **J. E. D. Miller**, and R. Rosentreter. 2020. Grazing disturbance promotes exotic annual grasses by degrading biotic soil crust communities. *Ecological Applications* 30(1): e02016.
21. **Miller, J. E. D.**, D. Li, M. Laforgia, and S. Harrison. 2019. Functional diversity is a passenger but not driver of drought-related plant diversity loss. *Journal of Ecology* 107(5): 2033-2039.
20. **Miller, J. E. D.**, A. Ives, and E. Damschen. 2019. Functional traits and community composition: a comparison among community-weighted means, weighted correlations, and multilevel models. *Methods in Ecology and Evolution* 10(3): 415-425.
19. Stevens, J., P. Fornwalt, and **J. E. D. Miller**. 2019. Fire severity and changing composition of understory plants. *Journal of Vegetation Science* 30(6): 1099-1109.
18. Richter, C., M. Rejmánek, **J.E.D. Miller**, J. Weeks, K. Welch, H. Wiggins, and H. Safford. 2019. The local species diversity x fire severity relationship is hump-shaped in semiarid yellow pine and mixed conifer forests. *Ecosphere* 10(10): e02882.
17. **Miller, J. E. D.**, H. Root, and H. Safford. 2018. Altered fire regimes cause long-term lichen diversity losses. *Global Change Biology* 24(10): 4909-4918.
16. **Miller, J. E. D.**, A. Ives, S. Harrison, and E. Damschen. 2018. Early- and late-flowering guilds respond differently to landscape spatial structure. *Journal of Ecology* 106(3): 1033-1045.
15. Young, A., **J. E. D. Miller**, J. Villella, G. Carey, and W. Miller. 2018. Epiphyte type and sampling height impact mesofauna communities in Douglas-fir trees. *PeerJ* 6:e5699.
14. Adlam, C.* and **J. E. D. Miller**. 2018. Macrolichens of the Quail Ridge Reserve, Napa County, California. *Bulletin of the California Lichen Society* 25(1): 10-15. (*Mentored graduate student)
13. Villella, J., T. Carlberg, D. Stone, **J. E. D. Miller**, N. Nelson, and L. Calabria. 2018. Diversity and floristic patterns of epiphytic macrolichens on white oak in the Cascade-Siskiyou region of Oregon. *Opuscula Philolichenum*, 17: 299-318.
12. **Miller, J. E. D.** and E. Damschen. 2017. Holding the line: Three decades of prescribed fires halt but do not reverse woody encroachment in naturally fragmented grasslands. *Landscape Ecology* 32(12): 2297-2310.
11. **Miller, J. E. D.***, P. Hahn*, E. Damschen and J. Brennan**. 2017. Functional dependence underlies a positive

plant-consumer richness relationship. *Basic and Applied Ecology* 21: 94-100. (*First two authors contributed equally; **Mentored undergraduate)

10. **Miller, J. E. D.**, J. Villella, G. Carey, T. Carlberg and H. Root. 2017. Canopy distribution and survey detectability of a rare old-growth forest lichen. *Forest Ecology and Management* 392: 195–201.
9. **Miller, J. E. D.** and E. Damschen. 2017. Biological soil crust cover is negatively related to vascular plant richness in Ozark sandstone glades. *Journal of the Torrey Botanical Society* 144(2): 170-178
8. Grover, Shannon**, **J. E. D. Miller**, and E. Damschen. 2017. Indirect effects of landscape spatial structure and plant species richness on pollinator diversity in Ozark glades. *Castanea* 82(1): 24-31. (**Mentored undergraduate) *Winner of the Windler prize for best 2017 ecology paper in Castanea*
7. Petersen, K., John Villella, **J. E. D. Miller**, L. M. Calabria, J. Brown-Clay, L. Hynson, T. Steen, K. Johnston, A. Ulbrich and M. Miller. 2017. Substrate age influences species richness and succession patterns of calicioid lichens and fungi. *The Bryologist* 120(1):19-24.
6. **Miller, J. E. D.**, E. Damschen, S. Harrison, and J. B. Grace. 2015. Landscape spatial structure affects specialist but not generalist plant species in naturally fragmented grasslands. *Ecology* 96:3323–3331.
5. Root, H.T., **J. E. D. Miller**, and B. McCune. 2011. Rarity and habitat associations of soil crust lichens. *The Bryologist* 114(4).
4. **Miller, J. E. D.**, B. McCune, D. Kofranek, J. Villella, R. Demmer, and K. Mergenthaler. 2011. Lichens from the South Slough and Horsfall Dunes on the Southern Oregon coast. *Evansia* 28(4).
3. **Miller, J. E. D.**, A. Rossman, R. Rosentreter, and J. Ponzetti. 2011. Lichen ecology and diversity of an Oregon sagebrush steppe: 1977 to the present. *North American Fungi* 6(2): 1-15.
2. **Miller, J. E. D.** 2011. The *Usnea rigida* group in California and the Pacific Northwest. *Bulletin of the California Lichen Society* 18(1&2):3-5.
1. Villella, J., S. Benson, T. Carlberg, **J. Miller**, R. Patton, and E. Peterson. 2010. The Lichens of the Horseshoe Ranch Wildlife Area. *Bulletin of the California Lichen Society* 17 (1&2): 9-12.

Technical reports

2. Villella, J. and **J. E. D. Miller**. 2022. Lichen Inventory and Visitor Use Study: Lava Beds National Monument, California. Submitted to the US National Park Service.
1. Villella, J., G. Carey, and **J. E. D. Miller**. 2014. Distribution and abundance of *Lobaria oregana* within the forest canopy and a comparison of detection from ground-based versus canopy-based survey methods in the Six Rivers National Forest of Northwest California. Submitted to Six Rivers National Forest.

Book chapter

Book chapter: **Miller, J.E.D.**, C. Ziter, and M. Koontz. Fieldwork in landscape ecology. In: Perry, G., E. Minor, R. Francis, and J. Millington (eds) *Handbook of Landscape Ecology*. Routledge, Taylor and Francis Group

TEACHING EXPERIENCE (20 courses as instructor of record, including repeats; * = online due to COVID-19)

Instructor of record

Spring q. 2019-2022	Intro to eco-evo research (nectar yeast system) , Stanford (* in 2020-2021)
Winter q. 2019-2022	Intro to eco-evo research (lichen system) , Stanford (* in 2021)
Fall q. 2019 & 2021	Structural equation modeling for ecologists (graduate seminar) , Stanford
Fall quarter 2021	Designing your PhD (graduate seminar) , Stanford
Fall q. 2019, 2020 & 2022	Introduction to ecology , Stanford (* in 2020)
Fall 2020 & 2022	Ecological statistics (graduate course) , Stanford (* in 2020)
Fall quarter 2017	Boundary-spanning in ecology (graduate seminar) , UC Davis
Spring quarter 2017	Lichenology , UC Davis
Fall 2008 & winter 2009	Introductory biology lab (molecules & cells) , Rogue Community College

Teaching assistant and tutoring positions

Fall semester 2015	Biohouse living-learning community seminar , UW-Madison (Graduate mentor)
2011-2015 (3 sem.)	Introductory biology (plant anatomy & ecology) , UW-Madison (Teaching assistant)
2008-2009 (2 quarters)	Tutoring center faculty , Rogue Community College

PRESENTATIONS (* = online due to COVID-19)

Invited seminars

- 2022 **New York Botanical Garden**, New York, NY*
Santa Clara University, Santa Clara, CA
- 2021 **Humboldt State University**, Arcata, CA*
Southern Oregon University, Ashland, OR
University of California, Berkeley, Berkeley, CA*
University of British Columbia, Vancouver, BC*
California Fire Science Consortium & UC Davis, Davis, CA*
2020 **California Polytechnic State University**, San Luis Obispo, CA*
2019 **Thompson Rivers University**, Kamloops, BC
Missouri Botanical Garden, St. Louis, MO
2018 **Sonoma State University**, Rohnert Park, CA
Stanford University, Stanford, CA
Santa Barbara Botanic Garden, Santa Barbara, CA

Invited conference presentations:

- 2022 **California Native Plant Society**, San Jose, CA (Symposium organizer)
2022 **Botanical Soc. Am. / Am. Bryo. & Lichenological Society**, Anchorage, AK
2021 **Int'l Assoc. for Landscape Ecology** (Symposium organizer), Reno, NV*
2019 **Association for Fire Ecology—8th Int'l Fire Ecology & Management Congress**, Tucson, AZ
2018 **California Lichen Society** (keynote speaker), Winters, CA
2017 **Northwest Science**, Ashland, OR
2016 **Society for Ecological Restoration Northwest Regional Conference**, Portland, OR
2015 **Association of Southeastern Biologists**, Chattanooga, TN
2014 **Natural Areas Conference**, Dayton, OH
2014 **Missouri Botanical Symposium**, Rolla, MO

Contributed conference presentations:

- 2022 **Botanical Soc. Am. / Am. Bryo. & Lichenological Society**, Anchorage, AK
2021 & 2022 **Northwest Lichenologists** (online in 2021 due to COVID-19)
2013-2015, 2017-2019; 2021 **Ecological Society of America**, multiple locations
2015 **Natural Areas Conference**, Little Rock, AR
2015 **Int'l Association for Landscape Ecology World Congress**, Portland, OR
2013 **Botanical Soc. Am. / Am. Bryo. & Lichenological Society**, New Orleans, LA
2011 **American Bryological and Lichenological Society**, Roan Mountain, TN
2010 **Northwest Science**, Centralia, WA

GUEST LECTURES

- 2022 **"Ecology and identification of lichens"** in Ecology and natural history of Jasper Ridge, Stanford
2021 **"Lichen mycobiomes and global change"** in Lichenology, Weber State University
"Lichens as indicators of habitat conservation value" in The Fungal Kingdom, Evergreen St College
2020 **"Effects of altered fire regimes on lichen diversity"** in Fire and Biodiversity, UC Davis
2019 **"Plant communities on Islands"** in Coastal Community Ecology, Bamfield Marine Science Centre
"Introduction to Lichens" in The Hidden Kingdom: Fungal Biology, Stanford
2016 **"Winter tree identification"** in General Ecology, University of Wisconsin-Madison (UWM)
2015 **"Human population growth and its effects on the environment"** in General Ecology, UWM
"Grasslands and the community concept: Clements, Curtis & beyond" in Grassland Ecology, UWM
2012 **"Biodiversity and ecosystem function"** in General Ecology, UWM
2011 **"Ecology of Biological Soil Crusts"** in Grassland Ecology, UWM
"Distribution Patterns of Biological Soil Crusts" in Protists and Fungi, Southern Oregon University

GRADUATE STUDENT MENTORING / SUPERVISION

- 2021-2023 Josephine Pescadera. Distribution and diversity of epiphytic lichens as potential indicators of air pollution from a coal-fired power plant in Kauswagan, Lanao Del Norte. Masters thesis, Mindanao State University, the Phillipines. Co-mentored with Ma. Reina Suzette Madamba.
2016-2023 Jonah Weeks. Long-term plant community changes after the Angora Fire. PhD, UC Davis. Co-

mentored with Hugh Safford.

2018 Masters thesis examiner for Rachel Wigle, Memorial University, Newfoundland, Canada

UNDERGRADUATE MENTORING (mentored 23 students; continues on following page)

2022- Eleanor Yamada. Implications of cryptogam biomonitoring for environmental justice. CCIR.
 2021 Isabella Duan. Ecology of endolichenic fungi. Independent study. Stanford.
 2021 Eric Liu. Ecology of endolichenic fungi. Independent study. Stanford.
 2018-2019 Kevin Ball. Developing staining techniques for basidiomycete lichen yeasts. Independent study. UC Davis.
 2017- 2018 Maaiké Wallace. Lichen floristics and fire ecology. Independent study. UC Davis.
 2018 Kyle Johnson. Mapping landscape cover in an ecologically heterogeneous region. UC Davis.
 2018 Edward Lee. Lichen floristics of Napa County. Independent study. UC Davis.
 2016-2017 Patty Hensley. Fire effects on plant and lichen communities. Independent study. UC Davis.
 2017 Mark Goering. Determining historical fire regimes for plant diversity datasets. Independent study. UC Davis.
 2017 Arianna Stokes. Effects of fire severity on herbaceous plant diversity. Independent study. UC Davis.
 2016 Grace Chan. Fire effects on plant communities in the Sierra Nevada. Independent study, UC Davis.
 2015-2016 Christopher Morgan. Community dispersal trait responses to 60 years of fragmentation in Wisconsin grasslands. Senior thesis (2 semesters).
 2015-2016 Anisa Fadhil. Effects of forest fragmentation on wildlife in Malaysia. Independent study and Senior Thesis (3 semesters)
 2016 Sanaya Bhathena. Seed ecology of Ozark glade plants. UW-Madison intro biology independent project.
 2014-2016 Shannon Grover. Landscape connectivity indirectly drives pollinator diversity in Ozark glades. Independent study (3 semesters)
 2015 Brandon Bruce. Seed dormancy traits of Ozark glade plants. Undergraduate Research Scholars program.
 2015 Brandon Nwadinobi. Relationships between soil characteristics and seed size. UW-Madison intro biology independent project.
 2014 Alyssa Daniels. Do glade specialist species have different life history traits from their generalist congeners? UW-Madison intro biology independent project.
 2014 Sara Grimmer. Effects of glade isolation on community dispersal modes. UW-Madison intro biology independent project.
 2013-2014 John Brennan. Relationships between plant diversity and grasshopper diversity in Ozark glades. UW-Madison intro biology independent project and subsequent independent research.
 2013 Mitul Patel. Effects of habitat area on plant diversity. UW-Madison intro bio. independent project.
 2013 Savannah Hamilton. Relationships between soil fertility and plant diversity in Ozark glades. UW-Madison intro biology independent project
 2013 Cayla Matte. Does stand composition predict understory diversity in Ozark woodlands? UW-Madison intro biology independent project
 2013 Charlotte Deantonio. Using land cover data to quantify landscape spatial structure. UW-Madison intro biology independent project.
 2012 Thomas Gorak. Mapping grassland landscape features.
 2012 Sam Gregson. Relationships between fire history and plant diversity in Ozark glades. UW Madison intro biology independent project.

SERVICE AND COMMUNITY OUTREACH (* = online due to COVID-19)

2015- **Manuscript reviewer** for Ecology; the Journal of Biogeography; Journal of Applied Ecology; Landscape Ecology; Oecologia; Ecosphere; Forest Ecology and Management; Restoration Ecology; Perspectives in Plant Ecology, Evolution and Systematics; PLOS One; PeerJ; Botany; Natural Areas Journal; Australian Journal of Botany; Journal of the Torrey Botanical Society; the Bryologist; Evansia; and the American Midland Naturalist
 2021- **President**, California Lichen Society
 2022 **Panelist / Proposal reviewer**, National Science Foundation*

2022 **Staff training guest leader**, Golden Gate Nat'l Rec. Area (Nat'l Park Service), *Sausalito, CA*

2021 & 2022 **Invited Speaker**, Jasper Ridge Biological Preserve, *Woodside, CA**

2022 **Workshop leader**, Nature in the City, *San Francisco, CA*

2020 & 2021 **Invited Speaker**, California Native Plant Society, Yerba Buena Chapter., *San Francisco, CA**

2020, 2021, & 2022 **Workshop leader**, Pepperwood Preserve, *Santa Rosa, CA (* in 2020)*

2020 **Research proposal reviewer**, Czech Academy of Sciences

2018, 2020, & 2023 **Workshop leader**, the Jepson Herbarium, University of California, *Berkeley, CA*

2020 **Invited speaker**, Save Mt. Diablo Science Colloquium, *Contra Costa Co., CA **

2020 **Invited Speaker**, California Native Plant Society, Santa Clara Valley Ch., *Los Altos Hills, CA **

2020 **Field trip leader**, California Native Plant Society, *Daly City, CA*

2020 **Workshop leader**, Edgewood Park and Natural Preserve, *San Mateo, CA*

2020 **Undergraduate research mentor**, EEB Mentor Match

2019 **Panelist**, Carnegie Institution for Science, *Stanford, CA*

2019 **Biobridge guest faculty**, Biology Department, Stanford University, *Stanford, CA*

2019- **Outreach coordinator**, California lichen society

2019 **Workshop instructor**, Filoli Estate, *Woodside, CA*

2018 **Guest Scientist**, Exploratorium After Dark, *San Francisco, CA*

2018 **Field trip organizer**, California Lichen Society, *San Luis Obispo County, CA*

2017 **Guest Curator**, Real Scientists (Twitter: @Realscientists)

2016 **Student Award Judge**, Ecological Society of America Student Section

2015 **Workshop leader and panelist**, UW Madison College of Letters and Sciences TA training

2015 **Workshop leader**, Wisconsin Society for Conservation Biology, *Madison, WI*

2015 **President**, UW-Madison Student Association for Fire Ecology, *Madison, WI*

2014 **Visiting scientist**, Shaw Nature Preserve Dana Brown Overnight Center, *Gray's Summit, MO*

2013 **Panelist**, UW Office of Fellowships, *Madison, WI*

2013 **Workshop leader**, Madison Herbal Institute, *Madison, WI*

2013 **Workshop leader**, Lawrence Community Orchard, *Lawrence, KS*

2012-2014 **Vice president**, Graduate Student Informal Seminars, University of Wisconsin, *Madison, WI*

2011-2016 **Graduate student representative**, Wisconsin Ecology, *Madison, WI*

2011-2016 **Zoology department steward**, Teaching Assistants' Association, University of Wisconsin

2011 **Invited speaker**, Native Plant Society of Oregon, *Ashland, OR*

2011 **Workshop leader**, ECOS Community Garden, Southern Oregon University, *Ashland, OR*

2010-2011 **Botany instructor**, Vitalist School of Herbology, *Ashland, OR*

2009-2010 **Guest field botany lecturer**, Elderberry School of Herbal Medicine, *Cave Junction, OR*