

Jesse E. D. Miller

Department of Biology
Stanford University
jedmiller@ucdavis.edu
mobile: 541.482.4923
jesseedmiller.com

EDUCATION AND CERTIFICATION

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

ACADEMIC AND PROFESSIONAL POSITIONS

- Lecturer**, Stanford University, 2018-
- Postdoctoral researcher**, University of California, Davis, 2016-2018, *Davis, CA*
- NSF graduate research fellow & research assistant**, University of Wisconsin, 2012-2016, *Madison, WI*
- Field botanist**, University of California, Davis, March-September 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*

GRANTS AND FELLOWSHIPS (Total = ~\$189,000)

- 2017 California Lichen Society, "Effects of altered fire regimes on epiphytic 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 *Lobaria oregana* 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, ~\$6000

AWARDS

- 2019 *Letharia* award for contributions to California lichenology, California Lichen Society
- 2018 Best oral presentation award, UC Davis Postdoctoral Research Symposium, \$400
- 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 (co-recipient), American Bryological and Lichenological Society, \$500
- 2011 Biological Sciences Scholar Award, Department of Zoology, University of Wisconsin, \$1500

PUBLICATIONS

Peer-reviewed papers - published or in press (23 peer-reviewed publications, 12 lead-author publications):

23. Li, D., **J. E. D. Miller**, and S. Harrison. 2019. Climate drives loss of phylogenetic diversity in a grassland community. *In press*, Proceedings of the National Academy of Sciences.
22. Root, H., **J. E. D. Miller**, and R. Rosentreter. 2019. Grazing disturbance promotes exotic annual grasses by degrading biotic soil crust communities. *In press*, Ecological Applications.
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. *In press*, Journal of Vegetation Science.
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. *In press*, Ecosphere.
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. *Peer J* 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.

Peer-reviewed papers in review (2) or revision (1):

I. **Miller, J. E. D.** and H. Safford. Historical contingencies determine plant diversity responses to disturbance. *Revision requested, Global Ecology and Biogeography.*

II. Safford, H. & **J. E. D. Miller.** Updated California plant affinities for serpentine soil. *Revision submitted, Madroño.*

III. Armstrong, C., A. McAlvey, **J. E. D. Miller,** Lepofsky, D., Turner, N., and Ritchie, M. Plant diversity and functional traits reflect ancient forest garden history. *In review, Journal of Biogeography.*

Technical report (1 published)

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 (1 in revision)

Book chapter: **Miller, J.E.D.,** C. Ziter, and M. Koontz. The role and utility of fieldwork in landscape ecology. In: Routledge Handbook of Landscape Ecology (*in revision*)

TEACHING EXPERIENCE (* = designed course)

Instructor of record

Fall quarter 2019 **Introduction to ecology***, Stanford
 Fall quarter 2019 **Structural equation modeling for ecologists (grad. seminar)***, Stanford
 Spring quarter 2019 **Intro to eco-evo research (nectar yeast system)**, Stanford
 Winter quarter 2019 **Intro to eco-evo research (lichen system)***, Stanford
 Fall quarter 2017 **Boundary-spanning in ecology (graduate seminar)**, UC Davis
 Spring quarter 2017 **Lichenology***, UC Davis
 2008-2009 (2 quarters) **Introductory biology (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

Invited seminars

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:

2019 **Association for Fire Ecology—8th International Fire Ecology and Management Congress**, Special session on fire regimes and species diversity in the American Southwest and adjacent regions of Mexico, “Altered fire regimes lead to lichen diversity losses”
 2018 **California Lichen Society**, Keynote speaker for annual meeting, “Resilience amid change: the state of the State for California lichen and lichenologist communities.”
 2017 **Northwest Science**, Causes and consequences of post-fire landscape and vegetation change in Northern California symposium, “Effects of fire severity on herbaceous plant diversity.” *Ashland, OR* (Symposium organizer)
 2016 **Society for Ecological Restoration Northwest Regional Conference**, The Evolving Science of Bioindicators symposium, “Floristic quality as a community indicator.” *Portland, OR*
 2015 **Association of Southeastern Biologists**, Symposium on cedar glades, “Plant diversity patterns and long-term landscape change in Ozark dolomite glades.” *Chattanooga, TN*
 2014 **Natural Areas Conference**, Symposium on Historical and Contemporary Perspectives on the Restoration of Southeastern Grasslands, “Drivers of plant diversity and woody encroachment in Ozark dolomite glades.” *Dayton, OH*
 2014 **Missouri Botanical Symposium**, “Plant diversity patterns in Ozark glades.” *Rolla, MO*

Contributed conference presentations:

- 2013-2015, 2017-2019 **Ecological Society of America**, *multiple locations*
 2015 **Natural Areas Conference**, *Little Rock, AR*
 2015 **International Association for Landscape Ecology World Congress**, *Portland, OR*
 2013 **American Bryological and Lichenological Society / Botanical Society of America**,
New Orleans, LA
 2011 **American Bryological and Lichenological Society**, *Roan Mountain, TN*
 2010 **Northwest Science**, *Centralia, WA*

GUEST LECTURES

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- 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

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- 2018 Masters thesis examiner for Rachel Wigle, Memorial University, Newfoundland, Canada
 2016-2018 Jonah Weeks. Long-term plant community changes after the Angora Fire. Masters thesis, UC Davis. Co-mentored with Hugh Safford.

UNDERGRADUATE MENTORING (mentored 22 students; continues on following page)

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- 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 total)
 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 biology 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.

PEDAGOGICAL TRAINING

- 2019 Misc. workshops / seminars, Office of the Vice Provost for Teaching and Learning, Stanford University
- 2014 Scientific Teaching Seminar, Wisconsin Institute for Science and Community Engagement, University of Wisconsin, *Madison, WI*

SERVICE AND COMMUNITY OUTREACH

- 2015- **Manuscript reviewer** for Ecology; the Journal of Biogeography; Landscape Ecology; Oecologia; Ecosphere; Forest Ecology and Management; 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; Evania; and the American Midland Naturalist
- 2018 & 2020 **Workshop instructor**, the Jepson Herbarium, University of California, *Berkeley, CA*
- 2019 **Field trip leader**, California Native Plant Society
- 2019 **Panelist**, Carnegie Institution for Science, *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*
- 2008 **Lichen surveyor**, Navopatia Field Station, *Sonora, Mexico*