Elizabeth Ann Bowman
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I. Education

PhD candidate, Plant Pathology, University of Arizona, School of Plant Sciences
Certificate in College Teaching, Office of Instruction and Assessment
Expected graduation: Spring 2020

M.S., Plant Pathology, University of Arizona, School of Plant Sciences, 2016

B.S., Botany, Oregon State University, College of Agriculture, 2014 (*summa cum laude*)

II. Appointments

2017-2019 *Teaching Assistant*, School of Plant Sciences, University of Arizona
2014-2017 *National Science Foundation Graduate Research Fellow***,** University of Arizona
2013-2014 *Research Intern*, Mycorrhizal Lab, USFS Pacific Northwest Research Station
2012-2013 *Research Assistant*, Oregon Flora Project, Department of Botany and Plant Pathology, Oregon State University

III. Publications (Peer-reviewed)

Daru, BH, **Bowman EA**, Pfister DH, and Arnold AE. 2018. Capturing the diversity of endophytic fungi preserved in herbarium specimens. *Phil. Trans. R. Soc. B*. 374: 20170395. DOI: http://dx.doi.org/10.1098/rstb.2017.0395.

Bowman, EA and Arnold AE. 2018. Distributions of ectomycorrhizal and foliar endophytic fungal communities associated with Pinus ponderosa along a spatially constrained elevation gradient. *Am J Bot* 105: 687-699. DOI: https://doi.org/10.1002/ajb2.1072

Huang Y-L, **Bowman EA**, Massimo NC, Garber NP, U'Ren JM, Sandberg DC, Arnold AE. 2018. Using collections data to infer biogeographic, environmental, and host structure in communities of endophytic fungi. *Mycologia* 110: 47-62. https://doi.org/10.1080/00275514.2018.1442078

Fraser, SJ, **Bowman EA**, Gianopulos NG, Newcombe G. 2016. *Xanthoria parietina* in the inland Pacific Northwest. *N Am Fungi* 11:1-12. DOI: http://dx.doi.org/10.2509/naf2016.011.002

IV. Fellowships, Grants, and Awards

2019 *GPSC Travel Grant*, University of Arizona, $750
2017-2019 *William A. Hanacek Memorial Scholarship*, School of Plant Sciences, University of Arizona (UA), $12,000
2018 *Forest Fungal Ecology Award*, Mycological Society of America, $1,250
2018 *Travel Award*, School of Plant Sciences, UA, $500
2017 *ARCS Foundation Award*, Bray/Kucera Scholar, UA, $10,500
2014-2017 *National Science Foundation Graduate Research Fellowship*, Climate change and fungal symbionts of *Pinus ponderosa*, $132,000
2014 *Robert L. Gilbertson Fellow*, School of Plant Sciences, UA, $1,000
2013 *Jean Siddall Memorial Scholarship*, Department of Botany and Plant Pathology, Oregon State University (OSU), $1,000
2013 *Merrill Family Foundation Scholarship*, College of Science, OSU, $2,000
2013 *BSA PLANTS Travel Grant*, Botanical Society of America and NSF, $750

V. Presentations (* = extramural)

2019 ***Bowman, Elizabeth A.** and A. Elizabeth Arnold. Culture-free and culture-based approaches reveal similar drivers of endophyte community structure in southwestern montane forests (poster). Fungal Genetics Conferences, Asilomar, CA.

2018 ***Bowman, Elizabeth A.** and A. Elizabeth Arnold. Ectomycorrhizal and foliar endophytic fungal communities of *Pinus ponderosa* in an anciently fragmented forest (poster). International Symbiosis Society Congress, Oregon State University, Corvallis, OR.

2018 **Bowman, Elizabeth A.** Sensitivity of fungal symbionts to disturbance, environmental stress, and isolation: a perspective from anciently fragmented forests (Departmental seminar). University of Arizona, School of Plant Sciences. Tucson, AZ.

2017 ***Bowman, Elizabeth A.** and A. Elizabeth Arnold. Ectomycorrhizal and foliar endophytic fungal communities differ in sensitivity to climate-related factors along a spatially constrained elevation gradient (oral presentation). Yosemite Symbiosis Workshop, Wawona, CA.

2017 **Bowman, Elizabeth A.** and A. Elizabeth Arnold. Fungal symbionts of forest trees in the context of climate change (poster). College of Agricultural and Life Sciences Poster Forum, University of Arizona, Tucson, AZ.

2016 ***Bowman, Elizabeth A.** and A. Elizabeth Arnold. Fungal symbionts of forest trees in the context of climate change (poster). Conference of the Mycological Society of America. Berkeley, CA.

2016 *Arnold, A. Elizabeth, Jana M. U'Ren, Jolanta Miadlikoska, Ignazio Carbone, Yu-ling Huang, **Elizabeth A. Bowman**, Georgiana May, and François Lutzoni. Perspectives from leaves and lichens on the scale and distribution of the global endobiome (oral presentation). Conference of the Mycological Society of America. Berkeley, CA.

2016 **Bowman, Elizabeth A.** Fungal symbionts of forests trees in the context of climate change (Departmental seminar). University of Arizona, School of Plant Sciences. Tucson, AZ.

VI. Teaching

Teaching assistantships

Spring 2020 PLS170C2, Biotechnology, Teaching assistantship
Online writing intensive course for ~150 undergraduate students. Graded homework, quizzes, discussions, and research papers (0.5 FTW).

Fall 2018 MIC 205L, Biology of Microorganisms Laboratory, Teaching assistantship
Taught twice weekly labs; graded labs and exams; Designed and wrote final practical exam (0.5 FTE)

Spring 2018 ACBS/PLS 312, Animal and Plant Genetics, Teaching assistantship
Taught weekly labs; graded homework and exams (0.25 FTE)

Fall 2017 PLS 170C1, Plants and our World, Teaching assistantship
Taught lecture on Evolution and Natural Selection (1.25 hrs) (0.25 FTE)

Software Carpentry and Data Carpentry

Spring 2020 *Instructor*, Introduction to Tidyverse for Data Manipulation and Visualization
1.5 hour workshop designed for beginners to R. Introduced tidy principles, data manipulation, reshaping, and visualization.

Fall 2017 *Co-instructor*, R for Reproducible Scientific Analysis Workshop
Two-day intensive workshop teaching coding in R, version control with git, and reproducible research, University of Arizona

VII. Professional development

2017-2019 Diversity and Inclusiveness Committee**,** School of Plant Sciences, University of Arizona

2018 Unconscious Bias Project workshop, 2 hours

2018 Alan Alda science communication workshop, University of Arizona

2017 Graduate teaching assistant workshop, University of Arizona

2017 Software and Data Carpentry Instructor Training, University of Arizona

VIII. Outreach

2019 Mentor, Fungal and Microbial Ecology, workshop on phyllosphere microbes. 10 hrs, 74 students (~ 74% STEM minorities, 55% female).

2018 Guest lecturer on global climate change with organized activities, Walter Douglas Elementary School, 91 students.

2017 - 2018 Mentor, Vail internship program, Vail Independent School District.
Conducted research project examining effect of lead pollution on lichens and their symbionts. 150 hrs, 1 student.

2017 Mentor, Fungal and Microbial Ecology, workshop on phyllosphere microbes. 14 hrs, 153 students (~ 80% STEM minorities, 53% female).

2017 Mentor, high school outreach, assisted with an experiment on seed microbes, 4 hrs., 11 students (~ 45% STEM minorites, 81% female).

2017 Graduate representative, SPLS Inclusive Excellence Committee.

2015 - 2017 Presenter, USDA, AgDiscovery, high school students learning about agricultural research at the University of Arizona. 1.5 hrs, 16 students.

2015 - 2017 Mentor, BLAST, NSF-sponsored research and biotechnology laboratory experience for high school students. 52.5 hrs, 41 students to date (~ 85% STEM minorities, 73% female).

2016 Mentor, IOU-NA REU program, undergraduate researcher studying how fire affects the ectomycorrhizal community in the Santa Catalina Mountains. 100 hrs, 1 student (Native American).

2016 Mentor and Presenter, Tucson High Magnet School Microbial workshop. 105 students.

2016 - 2017 Mentor, Vail internship program, Vail Independent School District.
Conducted research project examining effect of fire history on ectomycorrhizal fungi of Ponderosa pine. 150 hours, 1 student (female).

2015 Mentor, Tucson High Magnet School, advising high school students on science Projects. 2 hrs, 6 students (~ 20% STEM minorities, 67% female).

2015 Mentor and Presenter, Science and Nature in Tandem for Youth (SANITY), field experience for high school students. 9.5 hrs, 17 students (~ 65% STEM minorities, 71% female).

2015 Volunteer**,** Tucson Festival of Books, School of Plant Sciences booth. 3 hrs.

2014 Volunteer, Plant Science Family Night, Ventana Vista School. 3 hrs.

IX. Professional affiliations

2017 - present International Symbiosis Society

2013 - present Mycological Society of America

2013 - present Botanical Society of America