**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