

## Elizabeth McMurchie

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### Education

**Iowa State University — Ames, IA** **August 2019 – Present**  
Doctor of Philosophy—Biology: Ecology, Evolution, and Organismal Biology (In Progress)

**George Mason University — Fairfax, VA** **August 2016 – December 2018**  
Master of Science—Biology: Evolutionary Biology Concentration (GPA: 4.0)

**Western Washington University — Bellingham, WA** **September 2011 – June 2015**  
Bachelor of Science—Biology: Ecology, Evolutionary, and Organismal Emphasis (GPA: 3.99)  
Minor: Anthropology

### Master of Science Thesis Work

My thesis was based on a floristic survey of the Blue Ridge Center for Environmental Stewardship (BRCES) in Purcellville, VA. This involved the collection, identification, and creation of herbarium vouchers for every vascular species of plant at the BRCES, a 900 acre public park of which the western 600 acres have been transferred to the Virginia Department of Conservation and Recreation to become a state park. In this study, I also determined Virginia Natural Heritage Resources-defined community types according to the Virginia Natural Heritage Resources protocols. I located a total of 515 species at the park, resulting in 1074 vouchered specimens. This research may be used in the future to help inform decisions involving land use and management at the park, as well as for providing educational opportunities for visitors. Thesis work took place between March of 2017 and November of 2018.

### Relevant Work Experience

**Iowa State University Dept. of Ecology, Evolution, and Organismal Biology — Ames, IA** **August 2019 – Present**  
*Iowa State University is the site of the Ada Hayden herbarium, home to over 600,000 specimens of vascular plants, bryophytes, and fungi. The lab led by Dr. Lynn Clark focuses on the evolution and systematics of Neotropical bamboo species.*

Part time — Graduate Research Assistant

- Working on the description of three previously undescribed species of bamboo of the genus *Chusquea*

**George Mason University Biology Dept. — Fairfax, VA** **June 2018 – July 2019**  
*George Mason University is home to the Ted Bradley Herbarium, which houses over 60,000 specimens, over half of which are from Virginia and available on the Southeast Regional Network of Expertise and Collections (SERNEC) portal. With NSF funding, the GMU herbarium has been involved in digitization of other regional herbaria.*

Part time — Graduate Research Assistant and Herbarium Technician

- Digitized herbarium specimens at the Virginia Commonwealth University herbarium
- Identified herbarium specimens that required updated taxonomy or were incorrectly labelled

**Meadowlark Botanical Gardens — Vienna, VA** **May 2017 – October 2018**  
*Public botanical gardens within the Nova Parks system, with gardens exhibiting native plants as well as several horticultural gardens and a Korean Bell Garden.*

Part time consulting — Botanical Consultant

- Collected, pressed, identified, mounted, and labelled native plant specimens from the Potomac Valley Collection in preparation for certification by the American Public Gardens Association and International Agenda for Botanic Gardens in Conservation
- Interacted with park guests to explain the goal and procedures involved in the project

## Other Work and Research Experience

### **Bio-Rad Laboratories — Woodinville, WA**

**October 2015 – February 2016**

*Founded in 1952, Bio-Rad Labs is involved in biomedical research, manufacture of devices for the biology laboratory, and clinical diagnostic production.*

Full time temporary — Manufacturing Technician

- Worked in the blood virus test kit packaging group to assemble test kits for clinical use
- Checked in, counted, and labelled kit components according to order specifications prior to assembly
- Maintained a good manufacturing practices environment

### **Brooks Rand Labs — Seattle, WA**

**August – September 2015**

*Founded in 1982, Brooks Rand Labs specializes in ultra-low level mercury, methyl mercury, and trace metals detection from a variety of matrices, serving hundreds of clients worldwide.*

Full time temporary — Sample Control Assistant

- Homogenized biotic samples to prepare them for analysis of trace metals
- Cleaned processing equipment between homogenization of samples to eliminate trace metal contamination between samples
- Assisted with check-in, filtration, and acid-preservation of samples while maintaining techniques to prevent sample contamination in a laboratory setting
- Filled bottle orders for clients

### **Merlin Falcon Foundation — Bellingham, WA**

**January – June 2015**

*Bellingham nonprofit organization devoted to research on ecology and behavior of merlin falcons, as well as community education about this species and its role in rural and urban ecosystems.*

Internship

- Used MS Excel and OpenOffice to perform data entry and quality checks in Behavioral Ecology Database
- Reorganized Behavioral Ecology Database, moved Database to MS Excel, and expanded information captured to include additional relevant data from field research notebooks
- Conducted a field observation to expand knowledge about data techniques in the field
- Completed final written and illustrated project based on research experience

### **Harbor Seal Behavioral Study — Hornby Island, BC**

**July 2014 – May 2015**

*Study was from July – August of 2014 and centered on observance of the breeding behavior of harbor seals in relation to boat traffic. Analysis was intermittently conducted through May of 2015. Research involved in the 2016 publication of “Quantitative Classification of Harbor Seal Breeding Calls in Georgia Strait, Canada” by K. Nikolich, H. Frouin-Mouy, and A. Acevedo-Gutiérrez in *The Journal of the Acoustical Society of America*.*

Internship

- Assisted in visual field observations of numbers and behavior of harbor seals during the harbor seal breeding season for daily six to eight hour periods
- Identified and documented the position of other marine mammals near harbor seal haul-outs, including river otters and Steller sea lions
- Conducted data capture of quantity and location of boats visible from observation station, weather, human disturbance to harbor seals, and water surface characteristics
- Analyzed acoustic data recorded on hydrophone with Raven Pro software to identify seal vocalization patterns and document boat and other background noise

## Teaching Experience

### **Iowa State University Dept. of Ecology, Evolution, and Organismal Biology — Ames, IA**

**August 2020 – Present**

*Principles of Biology I Lab (BIOL 211L) and Plant Systematics (BIOL 366) Lab*

Graduate Teaching Assistant

- Instructed BIOL 211L while maintaining COVID-19 lab safety standards to ensure a safe lab environment

- Held weekly office hours over Webex and promptly answered student questions over email to maintain dialogue with students outside of lab
- Assisted in construction of online activities, plant family summary sheets, and the course Canvas webpage for BIOL 366 lab

**George Mason University Biology Dept. — Fairfax, VA**

**August 2016 – June 2018**

*Biodiversity lab (BIOL 330) and Introductory Biology I & II (BIOL 103 and 104)—Introductory biology for nonmajors lab.*

Graduate Teaching Assistant

- Conducted MS PowerPoint-based prelab lectures and lab introduction prior to student activities
- Oversaw lab procedures while upholding appropriate lab safety standards, led recitation activities, and answered student questions
- Assisted in editing the BIOL 104 Lab manual prior to 2017 publication
- Held weekly office hours and ran lab-specific BlackBoard webpages
- Wrote lab quizzes and practical exams and graded student exams, prelabs, data sheets, recitation activities, and presentations

**Western Washington University Biology Dept. — Bellingham, WA**

**Spring Qtrs 2013 & 2014**

*Intro to Organismal Biology Lab (BIOL 206)—Lab focusing on the anatomy and physiology of plants and animals.*

Undergraduate Teaching Assistant

- Assisted with the lab setup, cleanup, and lecture
- Guided the students through lab and answered relevant questions by the students

**Awards, Honors, Memberships, and Scholarships**

**Alton Harvill Award – Botany Section**

**May 2018**

- Created by friends of Dr. Alton Harvill, author of the *Atlas of the Virginia Flora*, this award is granted to a student presenting outstanding field work in botany at the Virginia Academy of Science Annual Meeting.

**Virginia Academy of Science**

**Joined February 2018**

- The Virginia Academy of Science promotes STEM education and research in the Commonwealth of Virginia through financial support and an Annual Meeting for distribution of research results.

**Southern Appalachian Botanical Society**

**Joined June 2017**

- The Southern Appalachian Society focuses on botany of the eastern United States and publishes the journal *Castanea* for papers related to this topic.

**Botanical Society of America**

**Joined May 2017**

- Founded in 1893, the Botanical Society of America (BSA) focuses on botany in all its forms, with a specific focus on botany in the United States. The BSA has several publications, including the *American Journal of Botany* and *Applications in Plant Sciences*.

**American Society of Plant Taxonomists**

**Joined March 2017**

- The American Society of Plant Taxonomists works to promote research and education about plant taxonomy and herbaria and publishes the journal *Systematic Botany*.

**Graduation Magna cum Laude — Western Washington University**

**June 2015**

- Graduated in at least the 97<sup>th</sup> percentile of students in the WWU College of Sciences and Technology

**Presidential Scholarship — Western Washington University**

**March 2011**

- Scholarship based on incoming GPA and test scores. Awarded with Admission with Highest Honors.

## Relevant Courses

<i>Statistical Methods for Research Workers (STAT 587)</i>	<b>Fall 2020</b>
<i>Plant Evolution (EEOB 551)</i>	<b>Fall 2020</b>
<i>Molecular Phylogenetics (EEOB 563)</i>	<b>Spring 2020</b>
<i>Lichens and Bryophytes (BIOL 555)</i>	<b>Spring 2020</b>
<i>Plant Anatomy (BIOL 454)</i>	<b>Fall 2019</b>
<i>Tropical Field Botany (NSF)</i>	<b>Winter 2019</b>
<i>Soil Science (GEOL 506)</i>	<b>Spring 2018</b>
<i>Spatial Ecology for Conservation (CONS 620)</i>	<b>Fall 2017</b>
<i>Population Ecology (BIOL 648)</i>	<b>Fall 2017</b>
<i>Paleoclimatology (GEOL 532)</i>	<b>Fall 2016</b>
<i>Mycology (BIOL 497G)</i>	<b>Fall 2014</b>
<i>Systematic Botany (BIOL 452)</i>	<b>Spring 2014</b>
<i>Evolutionary Biology (BIOL 432)</i>	<b>Winter 2014</b>
<i>Ecology Lab (BIOL 326)</i>	<b>Fall 2013</b>
<i>Ecology (BIOL 325)</i>	<b>Spring 2013</b>