

Julia R. Butler

Senior Scientist

SiREM Labs

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FIELDS OF EXPERTISE

Botany, Field Botany, Bryology, Microbiology, Phylogenetics, Horticulture, Systematics, Evolutionary Biology, Ecology, Educational Outreach, Natural History Collections, Field Work, Taxonomy, Dichotomous Keys, Species Surveys.

EDUCATION

Bachelor of Arts, *Oberlin College of Arts and Sciences*. May 2019. Major: Biology (concentration in Botany), Minor: Geology. Advisor: Dr. Roger Laushman.

Masters in Ecology and Evolutionary Biology, *University of Tennessee – Knoxville*. May 2024. Major: Ecology and Evolutionary Biology. Advisor: Dr. Jessica Budke.

AWARDS AND FUNDING

2022. The Sharp Fund: University of Tennessee – Knoxville, EEB Department, \$10,000

2018. NSF, REU University of Florida Botany Department, Stuart McDaniel, Dimensions of Biodiversity: Broadening Participation, \$6,000.

2019. Hope Hippard Memorial Scholarship, \$500

2018-2019. Dolores Taylor, MD '67 Scholarship

2015. Scholarship for Young Language Leaders, \$250

SOFTWARE AND COMPUTATIONAL SKILLS

R (statistical computing and graphics) – RAxML - MrBayes – MAFFT – Geneious – BLAST – Docker – Bridger – Globus – USEARCH – AWS – Microsoft Office

WORK AND RESEARCH EXPERIENCE

August 2025-Present. Staff Geoscientist II. Environmental Standards, Inc., Montrose Environmental Group.

September 2022-August 2025. *Senior Staff Scientist*. SiREM Gene-Trac laboratory, Geosyntec Consulting and Engineering.

January 2020–February 2022. *Microbiology Technician*. Microbiology Department, Eurofins Food Integrity and Innovation.

August 2019–November 2020. *Research Associate*. College of Agriculture and Life Sciences, DeLeon Laboratory, University of Wisconsin-Madison.

May 2019–August 2019. *Laboratory Technician*. Department of Biology, Oberlin College, Roles Lab
Supervisor: Angela Roles.

June 2018–August 2018. *NSF REU Student Research Assistant*. Department of Botany, University of Florida, McDaniel Lab. Supervisor: Stuart McDaniel.

UNDERGRADUATE STUDENT MENTORING

Utilizing and imaging herbarium specimens for the molecular phylogenetic analysis of Fissidens subg. Octodicerias mosses

Julian Broughton – Major: Biology; Concentration: Biostatistics: Sept. 2022 – May 2024

CONFERENCE ABSTRACTS AND PRESENTATIONS

Butler, Julia; Roles, Angela J.; Contreras, Juan; Ranathunge, Chathurani; McDaniel, Stuart. 2019. Title: The evolutionary history and genetic diversity of three closely related *Aulacomnium* Species. Botany 2019. Poster Presentation.

Butler, Julia; Roles, Angela J.; Contreras, Juan; Ranathunge, Chathurani; McDaniel, Stuart. 2019. Community Genomic Drivers of Moss Microbiome Assembly and Function in Rapidly Changing Alaskan Ecosystems. Oberlin Senior Symposium. Oral Presentation.

Butler, Julia. 2023 Aquatic Transitions and Interspecific Relationships in *Fissidens* Mosses. 2023 International Botany Conference. Oral Presentation.

Butler, Julia. 2024 Aquatic Transitions and Interspecific Relationships in *Fissidens* Mosses. 2024 Association of Southeastern Biologists Conference. Oral Presentation.

TEACHING EXPERIENCE

2021- Present: Student Teaching Assistant – University of Tennessee Knoxville

BIO 115 – Introduction to Plant Biology (Lab)

BIO 114 – Introduction to Plant Biology II (Lecture)

BIO 113 – Introduction to Plant Biology (Lecture)

FIELD BOTANY EXPERIENCE

Botanical Outreach

Spring Wildflower Pilgrimage Spring 2022-Present Great Smoky Mountains National Park:
Moss Walk Leader & Sketching Wildflowers Leader.

Plant Collection Trips

Chance Creek Nature Preserve, Lorain Co., Ohio, USA 2018-2019

Searching a historical collection site for extant moss populations to analyze how populations have shifted with canopy change due to the EAB with Diane H. Lucas (OMLA).

Multiple locations in Alaska, Seward to Toolik Field Station, USA Summer, 2018 Collecting *Aulacomnium* mosses across a latitudinal gradient to assist with research in the McDaniel lab at the University of Florida with Stuart McDaniel, Juan Contreras, and Angela Roles.

Highlands, Macon Co., North Carolina, USA Winter, 2018 Collected specimens around the Highlands Biological Station to be identified and stored at the herbarium with Stuart McDaniel.

Michaux State Forest, Franklin Co., Pennsylvania, USA Fall, 2023

Collected and identified specimens along with other bryologists to further the species list for the county and better understand the distribution of endangered bryophytes in the area.

PUBLIC AND COMMUNITY OUTREACH

GLOBAL Transcription Workshops

In collaboration with Miranda Zwingelberg, we planned a reoccurring workshop for citizen scientists to join the effort to transcribe thousands of digitized bryophyte herbarium specimens from all around the world.

Girl Scouts- Math in Nature

A National Institute for Mathematical and Biological Synthesis (NIMBioS) event for Knoxville Girl Scout Troop 28005. Assisted with a germination experiment that scouts were then able to take home and collect their own data for.

PROFESSIONAL SERVICE

Manuscript reviewer: Nature Communication, American Journal of Botany

LANGUAGE SKILLS

English and basic knowledge of written and spoken French.

PROFESSIONAL SOCIETIES

Member: American Society of Plant Taxonomists, Botanical Society of America, Ohio Moss and Lichen Association, American Bryological and Lichenological Society, Association of Southeastern Biologists.

