

Brett Fredericksen

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Academic Background

Ph.D., Plant Biology, Summer 2021 (anticipated)
Department of Environmental and Plant Biology
Ohio University

B.S., Plant Biology - May 2016
College of Biological Sciences: Department of Plant Biology
University of Minnesota - Twin Cities

Academic Appointments

2016 to current	Doctoral Candidate and Teaching Assistant Advisor: Dr. David Rosenthal
2015 - 2016	Field technician – Cedar Creek Ecosystem Science Reserve Advisors: Dr. Anna Schweiger and Dr. Jeannine Cavender-Bares
2014	Undergraduate Researcher Advisors: Dr. Matthew Kaproth and Dr. Jeannine Cavender-Bares

Awards and Fellowships

Distinguished Leadership and Service Award

Ohio University Graduate Student Senate – 2021

Description: Provided to one graduating member of the year’s GSS body recognizing a highly impactful tenure within the body

Continuing Leadership Award

Ohio University Graduate Student Senate – 2019 & 2020

Description: Provided to one individual every year who shows exemplary leadership in the body and will be returning the following year. Received award for both years.

Katherine S. McCarter Graduate Student Policy Fellowship

Ecological Society of America -2019

Description: Provided to students to travel to Washington, DC to meet with legislature and learn about the role of science in government

Grants Received

Ohio Chapter Small Grants Program – 2019 - The American Chestnut Foundation
“Establishment of Long-Term Biodiversity plots to track growth and resource allocation of American Chestnut at suboptimal planting sites”- **\$750**

Graduate Student Research Fund – 2019 – Ohio University College of Arts and Sciences, “Effects of elevated atmospheric CO₂ on the disease resistance of blight resistant American chestnut hybrids at two levels of pathogenicity”. - **\$1000**

American Chestnut Foundation External Grants Program – 2018 – The American Chestnut Foundation, “Identifying genotypic variation in loss of blight resistance under drought in hybrid American chestnuts to inform restoration” - **\$7,500**

Original Work Grant – 2017 – Ohio University Graduate Student Senate, “Drought tolerance in American chestnut and hybrids” - **\$750**

Original Work Grant – 2016 – Ohio University Graduate Student Senate, “Effects of Climate Change on Phytophthora Infection in American Chestnut” - **\$750**

Publications

*denotes undergraduate mentees

Brett W Fredericksen, Samuel Kukor*, David M Rosenthal, 2021, “Physiological changes in advanced hybrid chestnuts do not alter blight resistance under co-occurring drought,” *Canadian Journal of Forest Research*

Kelsey N Bryant, **Brett W Fredericksen**, David M Rosenthal, 2021 “Ring- and diffuse-porous species exhibit a spectrum of hydraulic behaviors from isohydry to anisohydry in a temperate deciduous forest” *Trees*, Under review

Posters & Presentations

*denotes undergraduate mentees

Brett Fredericksen, Samuel Kukor*, David M. Rosenthal, “Stem area specific hydraulic conductivity of hybrid chestnuts is more similar to American chestnuts than to Chinese chestnut when under drought and pathogen infection” Ecological Society of America (Online/UT, 2020) – Poster

Brett Fredericksen, Samuel Kukor*, David M. Rosenthal, “American x Chinese BC3F3 hybrids show altered drought response compared to pure American chestnuts.” Ecological Society of America annual meeting (Louisville, KY – 2019) – Presentation

Brett Fredericksen, David M. Rosenthal, “Comparison in Drought Response between American chestnut, Chinese chestnut, and BC3F3 hybrids.” Student Research and Creativity Expo. (Ohio University – 2019) – Poster

Brett Fredericksen, David M. Rosenthal, “Comparisons in Drought Response between American chestnut, Chinese chestnut, and BC3F3 hybrids.” The American Chestnut Foundation Annual Meeting (Huntsville AL – 2018) – Poster

Brett Fredericksen, Susan Eiben*, Jeremy Oehlenschlager*, David M. Rosenthal, “Genotypic differences and seed size prove more influential on first year growth than simulated climate change in American chestnut and blight resistant hybrids.” Ecological Society of America Annual meeting. (New Orleans – 2018) – Poster

Brett Fredericksen, Susan Eiben*, Jeremy Oehlenschlager*, David M. Rosenthal, “Seed size, not simulated climate change, explain biomass differences of American chestnut and hybrids after one season.” The American Chestnut Foundation Annual Meeting. (Portland, ME – 2017) – Poster

Luke Welch*, **Brett Fredericksen**, and David M. Rosenthal, “Growth Response to Elevated CO₂ and Temperature in both Hybrid and Native American Chestnuts (*Castanea dentata*).” Student Research and Creative Expo. (Ohio University – 2017) - Poster

Brett Fredericksen, Matthew Kaproth, Jeannine Cavender-Bares, “Drought Tolerance Trait Conservation in Oaks of the Americas.” Undergraduate Summer Research Symposium, (University of Minnesota – 2014) – Poster

Relevant Coursework

Ohio University: GPA 3.97

Biological Research and Science Ethics
Biotechnology
Statistical Methods in Plant Biology
Restoration Ecology
Ohio Flora Identification

Plant Physiology
Writing in the Life Sciences
Multivariate Statics
Plant Population and Community Ecology
Biogeography

Teaching Experience – Teaching Assistantship

Writing in the Life Sciences
Statistical Methods in Plant Biology
Principles of Biology
Plant Physiological Ecology

Biomes of the World
Plant Pathology
Plant Ecology
Data Visualization and Communication

Leadership and Committee Roles

2020-Present: Director of Legislative Affairs – Midwest region
National Association of Graduate and Professional Students

2021: Organizer of virtual legislative Hill visits
Graduate Student Senate – Ohio University

2020-2021: Graduate student reviewer
Ohio University Research Council – Ohio University

2020-2021: Commissioner for Academic Affairs – Research
Graduate Student Senate – Ohio University

2017-2021: Co-chair for Original Work Grant Review Committee
Ohio University

- 2017-2020:** Representative for Department of Environmental and Plant Biology
Graduate Student Senate - Ohio University
- 2019-2020:** Graduate student representative
LGBT Center Director position search committee – Ohio University
- 2019-2020:** Officer in the Plant Biology Graduate Student Association -
Ohio University

Society Affiliations

Ecological Society of American – Since 2017
The American Chestnut Foundation – Ohio Chapter – Since 2017

Methodological Skillsets

Licor 6400 operation	Hydraulic conductivity
Modeling plant light and CO ₂ response	Nonstructural carbohydrate quantification
Leaf-level spectral imaging	R statistical software
Vapor pressure osmometry and plant water potentials	Experimental design (greenhouse, growth chamber, and field)
Seed germination and transplanting	Pathogen diagnostics and treatment

Outreach & Service

- 2021:** Judge at Ohio Student Research and Creative Activity
Description: Reviewed and scored virtual submission to the Ohio university research symposium with winners receiving cash prizes on behalf of the Graduate Student Senate
- 2020:** Panelist - “Future President: How to Become Involved with Student Leadership on Campus”
Description: Was invited to participate in a leadership panel by the Women’s Center at Ohio University about leadership opportunities for students on campus.
- 2019:** Local science fair judge
Description: Judged elementary and middle school science fair projects through a rural home school network.
- 2019:** OutGrads and NonTrads
Description: Established a student group in partnership with the LGBT center for LGBTQ+ graduate students and nontraditional undergraduate students
- 2019:** Take Back the Night Graduate Student Senate representative and volunteer
Description: Volunteered at event aimed at sexual assault survivor support
- 2019:** Earth Day Science Outreach Morison Gordon Elementary School
Description: Conducted small group presentations on the importance of the environment to grade schoolers (1st – 7th grade)
- 2017 & 2018:** Guest Presenter - Camp Oty’okwa and Good Works
Description: Conducted small group presentations on plant ID and forest ecology to summer campers from traditionally underserved areas of Ohio
- 2017 & 2018** Open Ohio Project
Description: Program developed to facilitate dialogue regarding civil discourse and collaboration between scientists and artists on campus.