

Joseph D. Edwards

Postdoctoral Research Associate, Department of Ecology and Evolutionary Biology
University of Tennessee – Knoxville, Email: Jedwar98@utk.edu
Phone: (407) 569-7680, Address: 570 Dabney Hall, Knoxville, TN, 37996

INTERESTS

Soil ecology, biogeochemistry, mycorrhizal fungi, microbial ecology, biodiversity-ecosystem function, plant-soil-microbe interactions, sustainability, environmental education

EDUCATION

Ph.D. Ecology, Evolution, and Conservation University of Illinois at Urbana-Champaign	May 2022
B.S. (with Highest Distinction) Integrative Biology, UIUC University of Illinois at Urbana-Champaign	May 2017
B.S. Natural Resources and Environmental Science, UIUC University of Illinois at Urbana-Champaign	May 2017

HONORS AND AWARDS

- Robert Emerson Memorial Award, UIUC School of Integrative Biology, \$3000, 2022
- Ross Memorial Fund, Illinois Natural History Survey, \$2000, 2021
- Isabelle Norton Award, UIUC School of Integrative Biology, \$1000, 2021
- Clark Soil Biology Graduate Student Award, Soil Science Society of America, \$3000, 2020
- Francis M. and Harlie M. Clark Summer Fellowship, UIUC School of Integrative Biology, \$5000, 2020
- Summer Research Award, UIUC Program in Ecology, Evolution, and Conservation, \$1000, 2020
- Francis M. and Harlie M. Clark Research Support Grant, UIUC School of Integrative Biology, \$875, 2019
- List of Teachers Ranked as Excellent by Their Students for NRES 219, F 2018; NRES 102, F 2019, 2020, 2021; IB 150 (Outstanding), S 2020; IB 100, S 2021, UIUC
- Grant to construct stream quality monitoring stations for agricultural pollutants on UIUC Farm watershed, UIUC Student Sustainability Committee, \$100,000, 2018
- Travel Grant, UIUC Program in Ecology, Evolution, and Conservation Biology, \$600, 2018
- Robert H. Davis Distinction Award, UIUC School of Integrative Biology, \$750, 2017
- Outstanding Senior Award, UIUC Dept. of Natural Resources and Environmental Sciences, \$250, 2017
- Warren K. Wessel Award Finalist, UIUC College of Agriculture, Consumer, and Environmental Sciences, \$500, 2017
- Summer Undergraduate Research Fellowship, UIUC Office of Undergraduate Research, \$2500, 2016
- Fred S. Bailey Senior Leadership Award, University of Illinois YMCA, \$5000, 2016

PUBLICATIONS

1. **Edwards, J.D.**, Yang, W.H., Yannarell, A.C. (2021) Soil microbial communities are not altered by garlic mustard in recently invaded central Illinois forests. *Ecosphere*.
2. **Edwards, J.D.**, Gediman, S., Perezchica, A., Ackerman-Avila, C., Kreiling, J., Messinger, J., Wendell, C., & Ahmad, C. (2020) Message from Students in The 2020 Illinois Climate Action Plan. *University of Illinois Board of Trustees*. [xii – xiii](#).

3. **Edwards, J.D.**, Pittelkow, C.M., Kent, A.D., & Yang, W.H. (2018) Dynamic biochar effects on soil nitrous oxide emissions and underlying microbial processes during the maize growing season. *Soil Biology and Biochemistry*. 122: 81-90.

MANUSCRIPTS IN PREPERATION

1. **Edwards, J.D.**, Dalling, J.W., Kent, A.K., Krichels, A.H., Lawrence, N., Yang, W.H. Mycorrhizal mediation of fungal and bacterial communities in relation to ecosystem processes in montane tropical forests. In preparation for submission to *Tropical Ecology*.
2. **Edwards, J.D.**, Cook, A.M., Yannarell, A.C., & Yang, W.H. Biological invasion disrupts forest nitrogen economy. In preparation for submission to *New Phytologist*.
3. **Edwards, J.D.**, Fraterrigo, J.M., Eddy, W.C., Dalling, J.W., Yang, W.H. Linking ectomycorrhizal communities to ecosystem function and soil biogeochemical cycling. In preparation for submission to *Ecology Letters*.

PRESENTATIONS

1. **Edwards, J.D.**, Fraterrigo, J.M., Eddy, W.C., Dalling, J.W., Yang, W.H. (2021) Linking ectomycorrhizal communities to ecosystem function and soil biogeochemical cycling *Ecological Society of America Annual Meeting*. 02 Aug 2021 (Oral Presentation)
2. **Edwards, J.D.**, Fraterrigo, J.M., Eddy, W.C., Dalling, J.W., Yang, W.H. (2021) Relationship between ectomycorrhizal communities and host tree genera in influencing soil carbon and nutrient cycling *Mycological Society of America Annual Meeting*. 16 Jul 2021. (Oral Presentation)
3. **Edwards, J.D.**, Dalling, J.W., Kent, A.K., Yang, W.H. (2020) Cross-domain microbial interactions mediate the influence of tree mycorrhizal types on soil biogeochemical condition in montane tropical forests *Soil Science Society of America Annual Meeting*. 08 Nov 2020. (Poster Presentation)
4. **Edwards, J.D.**, Dalling, J.W., Kent, A.K., Yang, W.H. (2020) Dominant mycorrhizal type influences microbial community plant soil feedback in montane tropical forests *Ecological Society of America Annual Meeting*. 06 Aug 2020. (Poster Presentation)
5. **Edwards, J.D.**, Yannarell, A.C., & Yang, W.H. (2019) Exploitation of fungal nutrient economy by invasive plant jeopardizes future soil productivity in forests *Ecological Society of America Annual Meeting*. 15 Aug 2019. (Oral Presentation)
6. **Edwards, J.D.**, Yang, W.H., & Yannarell, A.C. (2018) Garlic mustard (*Alliaria petiolata*) disrupts fungal nitrogen economy in forests. *Ecological Society of America Annual Meeting*. 08 Aug 2018. (Poster Presentation)
7. **Edwards, J.D.**, Pittelkow, C.M., Yang, W.H., & Kent, A.D. (2016) Impacts of biochar on nitrogen cycling microbial communities and nitrous oxide emissions. *ASA – CSSA – SSSA National Conference*. 07 Nov 2016. (Poster Presentation)

TEACHING AND MENTORSHIP

- **Teaching Assistant**, NRES 219, Principles of Ecosystem Management (Fall 2018)
Developed and taught lessons on ecosystem ecology and biogeochemistry for over 60 students
- **Teaching Assistant**, NRES 102, Intro to Environmental Science (Fall 2019, 2020, 2021)
Independently developed and taught interactive lessons on environmental justice, communicating about climate change, and UIUC campus sustainability for over 70 students
- **Teaching Assistant**, IB 150, Intro to Organismal Biology (Spring 2020), IB 100, Biology in Today's World (Spring 2021)

Responsible for independently leading ~80 students in discussion sections exploring course material

- **Primary Instructor**, Illini 4-H Summer Academy, “Exploring Ecosystem Services”, UIUC, 2019
Independently developed week-long program for 20 high school students to explore pathways to a future in environmental science through the ecosystem services concept
- **Environmental Sciences Instructor**, College of Agriculture, Consumer and Environmental Sciences Research Apprenticeship Program, UIUC, 2017 & 2019
Independently designed three-week, full day program introducing high school students from communities under-represented in science to environmental science research
- **Mentor to Undergraduate Researchers**, Ebony Rankin, Sydney Bell, Xiangyu Zhang, Ally Cook, Joseph Schlosser
Primary mentor on Ms. Cook’s successful application for a \$2,500 Undergraduate Research Support Grant
- **X-Time Presenter**
Taught short lessons for students ages 5-10 about the importance of mutualisms, particularly mycorrhizal, for biodiversity and ecosystem health

SYNERGISTIC ACTIVITY

- **Student Liaison**, Ecological Society of America Biogeosciences Section, 2019-present
Promoting diversity initiatives in the society by developing a mentor program to build community by bringing together section members from different career stages
- **Reviewer** for *New Phytologist*, *Soil Biology and Biochemistry*, *Environmental Earth Science*, *Environmental Science: Processes and Impacts*, *Land Development & Degradation*, *Geoderma*, *Ecological Indicators*, *PEERJ*
- **Student leader** for Sustainability and Governance on UIUC campus:
 - **Treasurer**, Graduate in Ecology and Evolutionary Biology, 2021-Present
 - **Chair**, UIUC Student Sustainability Committee, 2018-2021
Presided over student-run funding board that allocates over \$1.4 million annually generated from student green fees. Personally led restructuring to promote sustainable justice and education projects relative to campus infrastructure and solicit greater student involvement in campus sustainability
 - **Student Member**, PEEC Graduate Admission Committee, 2019-2021
 - **Senator**, Illinois Student Government and Urbana-Champaign Campus Senate, 2017-2019
 - **Member**, Senate Executive Committee, Committee on Committees, and Conference on Conduct Governance, 2018-2019
 - **Student representative**, Agriculture and Land Use Sustainability Working Advisory Team (2016-2019), Illinois Climate Action Plan Working Group (2016-present), Resilient Landscapes Strategy Commission (2018-present), and Illinois Sustainability Council (2019-2021)
 - **President**, Students for Environmental Concerns, UIUC, 2016-2017
 - **Chair**, Student Sustainability Leadership Council, UIUC, 2016-2017
- **Member** Ecological Society of America (2017-present), Soil Science Society of America (2017-present), American Geophysical Union (2018-present), American Association for the Advancement of Sciences (2017-present), Mycological Society of America (2020-present)