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KATILYN BEIDLER

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Orcid ID: 0000-0002-9539-1782

EDUCATION

Indiana University, *Bloomington, IN*
Ph.D. in Evolution, Ecology and Behavior, 2016 – 2021
Minor in Environmental Science
Advisor: Richard Phillips

College of Charleston, *Charleston, SC*
M.S. in Environmental Studies, 2014-2016
Advisor: Seth Pritchard

College of Charleston, *Charleston, SC*
B.S. in Biology, 2008-2012

RESEARCH & TEACHING EXPERIENCE

Post-doctoral Research Associate, *University of Minnesota*, 2022-present, PI: Peter Kennedy
Ecological interactions and ecosystem nutrient cycling associated with the decomposition of microbial necromass. Work done in collaboration with Jennifer Pett-Ridge at Lawrence Livermore National Laboratory

Research Assistant, *Indiana University*, 2017-2021, PI: Richard Phillips
Ecosystem and Climate Consequences of Forest Community Change (SP 2020, 2021)
Nutrient cycle impacts on forest ecosystem carbon cycling: Improved prediction of climate feedbacks from coupled C–nutrient dynamics from ecosystem to regional scales (SP 2017)

Instructor, Saturday Science Quest for Kids, *Indiana University*, 02/2020-03/2020
Grades 2-3: Plant Power: Let's GrOw!

Associate Instructor, Biology Department, *Indiana University,* 2016-2021
BIOL–L 473 Ecology (FA 2020)
BIOL–L 113 Biology Laboratory and Discussion, for majors (FA 2017- 2019, SP 2019)
BIOL–L 100 Humans and the Biological World, for non-majors (FA 2016)

Field Assistant, *Uppsala University*, 09/09/15-09/21/15 &
Centre National de la Recherche Scientifique, 10/29/2015-11/12/15, PI: Matthew Rutter
Quantifying mutation parameters in a fitness landscape: Spontaneous mutation in *Arabidopsis thaliana* in its native range

Research Assistant, *College of Charleston ,*2015 – 2016 Co-PIs: Seth Pritchard & Allan Strand
Inducing and characterizing fine root senescence for *Pinus taeda*

Greenhouse Technician, *College of Charleston ,*08/2015 – 06/2016

Laboratory Instructor, College of Charleston, 08/2014-12/2014
BIO 111- Introductory Biology for majors (FA 2014)

Research Technician, College of Charleston, 2012-2014, PI: Seth Pritchard
Fine root dynamics in response to elevated CO2 and Nitrogen at the Duke Long Term Free-Air-CO2-Enrichment (FACE) Site.

Research Assistant, College of Charleston, 2010-2012, PIs: Matt Rutter & Courtney Murren
Investigation of ecotypic variation between European lines of *Arabidopsis thaliana*

GRANTS, AWARDS & FELLOWSHIPS

Morton Arboretum Center for Tree Science Fellowship, "Tree species effects on soil nitrogen cycling: accounting for rhizosphere processes" *in collaboration with Young Oh* – 2022 ($9,000)

Indiana University Sustainability Student Research Development Grant, "Carbon allocation dynamics in elevated vapor pressure deficit environments: how will regenerating forests respond to climate change?" *in collaboration with Michael Benson* – 2021 ($10,000)

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GRANTS, AWARDS & FELLOWSHIPS Ctd.

Oak Spring Garden Foundation Interdisciplinary Residency, Session IV -2021

William R. Ogg Fellowship, *Indiana University* – 2021 ($10,000)

Albert Ruesink Outstanding Associate Instructor Teaching Award, *Indiana University* – 2021 ($1,500)
George W. Brackenridge Award, *Indiana University* – 2020 ($2,500)

Smithsonian ForestGEO Research Grant, "Towards a predictive understanding of linkages among fine root traits, nutrient cycling and soil organic matter dynamics" – 2019 ($10,000)

Indiana University Research and Teaching Property Grant, "Effects of Nitrogen Fertilization and Mycorrhizal Type on Below-ground Carbon Dynamics in a Temperate Forest" *in collaboration with Corben Andrews*– 2019 ($3,000)

Provost's Travel Award for Women in Science, *Indiana University* – 2018 & 2019 ($1,000)

Cleland Travel Award, *Indiana University* – 2018 & 2019 ($1,000)

Floyd Plant Summer Fellowship, *Indiana University* – 2017-2020 ($6,334)

Sears Crowell Scholarship, *Indiana University* – 2018 & 2019 ($5,000)

College of Charleston Foundation MES Fellowship – 2014 ($2,500)

College of Charleston Biology Department: Plant Biology Prize – 2012

NSF REU Summer Fellow, *College of Charleston ,* Undergraduate Phenotyping of Arabidopsis Knockouts –2011 ($4,500)

HHMI Summer Fellowship, *College of Charleston* – 2010 ($3,000)

OUTREACH

Phillips Lab Research Mentor, *Indiana University,* 2017-2022
Mentees: Corben Andrews & Young Oh (Masters students), Karl Hagen, Emma Hand, Sehaan Tarique (Undergraduates) and Elizabeth Cooper (High-school student)

Boys and Girls Club of America, Teen Program volunteer, *Bloomington, IN*, Summer 2022

WonderLab Museum of Science, Health and Technology Volunteer, *Bloomington, IN*, 2020

Jim Holland Summer Science Research Program Mentor, *Indiana University,* 2017

SCIART COLLABORATIONS

Kaitlin Bryson, *Bellow Forth,* Anonymous Was A Woman Environmental Art Grant, 2022-2023

Jillian Sico, *Mycorrhizae,* The University of Alabama MFA Book Arts Thesis Show, 2020

Maria Whiteman, *State of Nature: Picturing Indiana Biodiversity,* Traveling exhibition, Grunwald Gallery & Indiana State Museum, 2020

SHORT COURSES

IsoCamp, Summer 2019
Stable Isotope Biogeochemistry and Ecology Course, *University of Utah, Salt Lake City, UT.*

EDAMAME, Summer 2018
Course in microbial metagenome analysis, *Kellogg Biological Station , Hickory Corners, MI*

Plant Anatomy: Development, Function, and Evolution Course, Summer 2015
Emphasis on Woody Plants, *Arnold Arboretum, Boston, MA*

Summer Soil Institute, Summer 2014
Course is soil ecology and Biogeochemistry, *Colorado State University, Fort Collins, CO*

WORKSHOPS

Creating a framework to interpret and model plant and mycorrhizal fungal traits at the global scale, NIMBIOS Virtual Workshop, 2020
Organizers: Stephanie Kivlin and Amy Zanne

Enhancing Long-Term Soil C Sequestration by Ectomycorrhizal Fungi Workshop, 2018
Organizers: Don Zak, Tim James, and Luke Nave

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PUBLICATIONS & PRESENTATIONS

Beidler, K.V., Powers, J.S., Dupuy-Rada, J.M., Hulshof, C., Medvigy,D., Pizano, C., Salgado-Negret, B., Van Bloem, S.J., Vargas, G., Waring, B.G., Kennedy, P.G. Incorporating seasonally and spatially dynamic ectomycorrhizal fungal communities strengthens predictions of soil biogeochemical cycling in neotropical dry forests. New Phytologist. (in review).

Beidler, K.V., Benson, M.C., Craig, M.E., Oh, Y.E., and Phillips, R.P. Afterlife effects of root traits on soil organic matter dynamics depend on decay stage. Soil Biology and Biochemistry. (in review).

Craig, M.E. , Geyer K.M., **Beidler, K.V.**, Brzostek, E.R., Frey, S.D., Grandy A.S., Liang, C., and Phillips, R.P. (2022). Fast-decaying plant litter enhances soil carbon in temperate forests but not through microbial physiological traits. Nature communications, 13 (1): 1-10. doi:10.1038/s41467-022-28715-9

Beidler, K. V., Young, O.E., Pritchard, S.G., and Phillips, R.P. (2021). Mycorrhizal roots slow the decay of belowground litters in a temperate hardwood forest. Oecologia, 197(3): 743-755. doi: 10.1007/s00442-021-05051-1

Beidler, K. V., Benson, M.C., Craig, M.E., and Phillips, R.P. Examining root-derived soil organic matter formation in the light of root branching order and mycorrhizal status. Contributed talk at: 106th ESA Annual Meeting; August 2021; Virtual Meeting

Beidler, K. V., Phillips, R.P., Andrews E., Maillard, F., Mushinski, R.M., and Kennedy, P.G. (2020). Substrate quality drives fungal necromass decay and decomposer community structure under contrasting vegetation types. Journal of Ecology, 108(5): 1845-1859. doi: 10.1111/1365-2745.13385

Beidler, K. V., Pritchard, S.G., and Phillips, R.P. Do living roots and mycorrhizal fungi decay dead roots? Evidence from a root exclusion experiment in a deciduous hardwood forest. Contributed talk at: 104th ESA Annual Meeting; August 2019; Louisville, KY, USA.

Zak, D.R., Pellitier, P.T., Argiroff, W.A., Castillo, B., James, T.Y., Nave, L.E., Averill, C., **Beidler K.V.,** Bhatnagar, J., Blesh, J., *et al.* (2019). Exploring the role of ectomycorrhizal fungi in soil carbon dynamics. New Phytologist, 223(1): 33-39. doi: 10.1111/nph.15679

Beidler, K.V., Fernandez, C.W., Mushinski, R.M., Phillips, R.P., and Kennedy, P.G. Effects of mycorrhizal stand association and melanin on decomposition of fungal necromass in a temperate forest. Poster presented at: 103rd ESA Annual Meeting; August 2018; New Orleans, LA

Beidler, K.V., Pritchard, S.G. (2017).Maintaining connectivity: understanding the role of root order and mycelial networks in fine root decomposition of woody plants. Plant and Soil, 420: 19-36. doi: 10.1007/s11104-017-3393-8

Beidler, K.V., Taylor, B. N., Strand, A. E., Cooper, E. R., Schönholz, M. and Pritchard, S. G. (2015), Changes in root architecture under elevated concentrations of CO2 and nitrogen reflect alternate soil exploration strategies. New Phytologist, 205 (3): 1153–1163. doi: 10.1111/nph.13123

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PUBLICATIONS & PRESENTATIONS Ctd.

Taylor, B.N., Strand, A.E., Cooper, E.R., **Beidler, K.V.**, Schonholz, M. and Pritchard, S.G. (2014). Root length, biomass, tissue chemistry and mycorrhizal colonization following 14 years of CO2 enrichment and 6 years of N fertilization in a warm temperate forest. Tree Physiology, 34: 955-965. doi: 10.1093/treephys/tpu058

Pritchard, S.G., Taylor, B. N., Cooper, E. R., **Beidler, K. V.**, Strand, A. E., McCormack, M. L. and Zhang, S. (2014). Long-term dynamics of mycorrhizal root tips in a loblolly pine forest grown with free-air CO2 enrichment and soil N fertilization for 6 years. Global Change Biology, 20: 1313–1326. doi: 10.1111/gcb.12409

Taylor, B.N., **Beidler, K.V.**, Strand, A.E. and Pritchard, S.G. (2014). Improved Scaling of Minirhizotron Data Using an Empirically-Derived Depth of Field and Correcting for the Underestimation of Root Diameters. Plant and Soil, 374: 941–948. doi: 10.1007/s11104-013-1930-7

Taylor B.N., **Beidler K.V.,** Cooper E.R., Strand A.E., and Pritchard S.G. (2013). Sampling volume in root studies: the pitfalls of under-sampling exposed using accumulation curves. Ecology letters, 16:862-869. doi:10.1111/ele.12119

Rutter, M. T., **Cross, K. V.,** & Van Woert, P. A. (2012). Birth, death and subfunctionalization in the Arabidopsis genome. Trends in plant science, 17(4), 204-212. doi:10.1016/j.tplants.2012.01.006

Cross, K.V. Valentine, M.E., Rutter, M.T. Gene age in relation to gene expression in *Arabidopsis thaliana*. Poster Presented at College of Charleston SSM Research Poster Session. August 2010.