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KATILYN CROSS

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

ADDITIONAL TRAINING

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*

GRANTS, AWARDS & FELLOWSHIPS

Oak Spring Garden Foundation Interdisciplinary Residency, Session IV -2021
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)
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 project –2011 ($4,500)
HHMI Summer Fellowship, *College of Charleston* – 2010 ($3,000)

WORK EXPERIENCE

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)

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WORK EXPERIENCE

Instructor, Saturday Science Quest for Kids, *Indiana University*, 02/2020-03/2020

Associate Instructor, Biology Department, *Indiana University,* 2016-present

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

Field Assistant, Collaborative Arabidopsis Project, Uppsala SE, 09/09/15-09/21/15 & Montpellier FR, 10/29/2015-11/12/15, PI: Matthew Rutter

Quantifying mutation parameters in a fitness landscape: Spontaneous mutation in A. thaliana in its native range

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

Laboratory Instructor, Biology Department, 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

Research Technician, College of Charleston, 2010-2012, PIs: Matt Rutter & Courtney Murren

RESEARCH EXPERIENCE

Addressing missing links in the root-mycorrhizae-soil organic matter (SOM) continuum, 2016-2021, PI: Rich Phillips

Effects of soil mulch additions and branching order on fine root decomposition in a *Pinus taeda* plantation, 2014-2016, PI: Seth Pritchard

Inducing and characterizing fine root senescence for *Pinus taeda,* 2015-2016, co-PIs: Seth Pritchard & Allan Strand

Fine root dynamics in response to elevated CO_2 and Nitrogen at the Duke Long Term Free-Air-CO_2-Enrichment (FACE) Site, 2012-2014, PI: Seth Pritchard

Investigation of ecotypic variation between European lines of *Arabidopsis thaliana,* 2009-2012, co-PIs: Matt Rutter & Courtney Murren

OUTREACH

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

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

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

WORKSHOPS & COLLABORATIONS

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

SciArt Collaborations

Jillian Sico, *Mycorrhizae,* The University of Alabama MFA Book Arts Program, 2020
Maria Whiteman, *State of Nature: Picturing Indiana Biodiversity,* Traveling exhibition, Grunwald Gallery & Indiana State Museum, 2020

PUBLICATIONS & PRESENTATIONS

Beidler, K. V., Young, O.E., Pritchard, S.G., and Phillips, R.P. Mycorrhizal roots slow the decay of belowground litters in a temperate hardwood forest. Oecologia. (in press).

Craig, M.E. , Geyer K.M., **Beidler, K.V.**, Brzostek, E.R., Frey, S.D., Grandy A.S., Liang, C., and **Phillips, R.P.** High quality litters enhance soil carbon, but not through microbial physiological traits. Nature Communications. (in press).

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PUBLICATIONS & PRESENTATIONS Ctd.

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.org/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

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.