

KENDALL K. BEALS

PhD candidate

Ecology & Evolutionary Biology,
University of Tennessee, Knoxville

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kendallbeals.com

EDUCATION

- Aug 2016 – present PhD candidate, Ecology & Evolutionary Biology
Schweitzer lab, Department of Ecology and Evolutionary Biology
University of Tennessee, Knoxville, TN
Field, lab, and greenhouse-based dissertation: Understanding plant phenotypic variation in natural and disturbed landscapes through functional linkages of plant-soil microbial interactions
Courses: CORE Evolution/Ecology, Statistical Models in R, Hierarchical Bayesian Modeling, Microbiomes reading group, Environmental Distributions of Microbes reading group, Advanced Techniques in Next-Generation Sequencing, GIS niche modeling, Conservation Decision Making
- 2009 – 2013 B.S., Biology
Dickinson College, Carlisle, PA
Independent research project: *A Case Study of the Australian Wet Tropics: Weed dynamics in juvenile restoration sites*. Fall 2011, advisor: Dr. Rohan Wilson, School for Field Studies
Courses: Ecology, Plant Physiology, Plant Systematics, Introduction to Genetics, Mathematical Techniques in Biological Sciences, Elementary Statistics, Introduction to GIS, Forest Ecology and Applications, Principles of Forest Management, Impact of Climate Change on Biodiversity

PUBLICATIONS

Beals, K.K., Moore, J.A., Kivlin, S.N., Bayliss, S.L.J., Lumibao, C.Y., Moorhead, L.C., Patel, M., Summers, J.L., Ware, I.M., Bailey, J.K., Schweitzer, J.A. Predicting plant-soil feedback in the field: meta-analysis reveals that competition and environmental stress differentially influence PSF. (2020). *Frontiers in Ecology and Evolution*. doi.org/10.3389/fevo.2020.00191.

Van Nuland, M.E., Vincent, J.B., Ware, I.M., Mueller, L., Bayliss, S.L., **Beals, K.K.**, Schweitzer, J.A., Bailey, J.K. Intraspecific trait variation across elevation predicts a widespread tree species' climate niche and range limits. (2020). *Ecology and Evolution*. doi.org/10.1002/ece3.5969.

Rosin, C., **Beals, K.K.**, Belovtich, M.W., Harrison, R.E., Pendred, M., Sullivan, M.K., Yao, N., Poulsen, J.R. Assessing the effects of elephant foraging on the structure and diversity of an Afrotropical forest. (2020). *Biotropica*. doi.org/10.1111.btp.12758.

Ware, I.M., Fitzpatrick, C.R., Senthilnathan, A., Bayliss, S.L.J., **Beals, K.K.**, Mueller, L.O., Summers, J.L., Wooliver, R.C., Van Nuland, M.E., Kinnison, M.T., Palkovacs, E.P., Schweitzer, J.A., Bailey, J.K. (2018). Feedbacks link ecosystem ecology and evolution across spatial and temporal scales: Empirical evidence and future directions. *Functional Ecology*. doi.10.1111/1365-2435.13267.

Kivlin, S.N., Lynn, J.S., Kazenel, M.R., **Beals, K.K.**, Rudgers, J.A. (2017). Biogeography of plant-associated fungal symbionts in mountain ecosystems: A meta-analysis. *Diversity and Distributions*. doi.org/10.1111/ddi.12595.

PRESENTATIONS, * = lead presenter

Scarce, A., Swystun, A., Beals, K.K., Franklin, J., Hughes, K., Schweitzer, J.A. 2020. Oak regeneration after Chimney Tops II fire is influenced by pine seedling neighbors and soil microbes. Great Smoky Mountains National Park Science Colloquium, Gatlinburg, TN.

*Beals, K.K., Moore, J.A.M., Moorhead, L., Hubert, M., Kivlin, S.N., Schweitzer, J.A. 2020. Burning questions: How wildfire alters ecosystem dynamics in a Southeastern forest through disruptions of plant-soil interactions. National Ecological Observatory Network. Invited talk. Boulder, CO.

*Beals, K.K., Bailey, J.K., Schweitzer, J.A. 2019. Burning questions: Importance of plant-soil microbiome interactions and how the Chimney Tops fire affects this ecological internet. Science at Sugarlands, Great Smoky Mountains National Park, Gatlinburg, TN.

*Beals, K.K., Bailey, J.K., Schweitzer, J.A. 2019. Burning questions: the role of wildfire severity on plant function through disruptions of plant-soil interactions. Ecological Society of America, Louisville, KY.

*Beals, K.K., Bailey, J.K., Schweitzer, J.A. 2019. Hidden players of plant function: variation in soil microbiome conditioning source influences phenotypic variation in a common perennial. Soil Ecology Society, Toledo, OH.

*Beals, K.K., Bailey, J.K., Schweitzer, J.A. 2019. Understanding Chimney Tops 2 wildfire from the ground up: functional response of plant-soil interactions to fire. Great Smoky Mountains National Park Science Colloquium, Gatlinburg, TN.

*Beals, K.K., Bailey, J.K., Schweitzer, J.A. 2018. Hidden players of plant function: the role of the soil microbiome on plant phenotype. Ecological Society of America, New Orleans, LA.

FUNDING

- 2019 Hesler Herbarium Student Research Award, University of Tennessee. DNA barcoding to identify the influence of fire and urbanization on *Solidago* spp. distribution and performance (\$1,100)
- 2018 Ecological, Evolutionary, and Conservation Genomics Award, American Genetic Association. Identifying the drivers of plant functional traits through exploration of the soil microbiome (\$9,927)
- 2018 Graduate Student Training Fellowship, Torrey Botanical Society. Studying the drivers of plant functional trait diversity through genomic analysis of the root-associated microbial environment (\$1,000)
- 2018 Student/Faculty Research Award, University of Tennessee. Does soil microbiome mediate plant functions across environmental gradients? Co-PI: Jennifer Schweitzer (\$4,800)
- 2017 Hesler Herbarium Student Research Award, University of Tennessee. Determining effects of plant-microbial soil feedbacks on plant function using *Solidago* (Asteraceae) from eastern Tennessee (\$500)

AWARDS

- 2020 Extraordinary Professional Promise, Chancellor's Honors Awards, Univ. of Tennessee
- 2020 Sandy Echternacht Award: Outstanding Graduate Student based on Excellence in Research, Ecology and Evolutionary Biology Dept., Univ. of Tennessee

WORK AND RESEARCH EXPERIENCE

Aug 2016 – present Graduate Teaching Assistant
Ecology & Evolutionary Biology, University of Tennessee, Knoxville
Advisor: Dr. Jennifer Schweitzer

EEB 433 (2 semesters): Plant Ecology
EEB 415 (1 semester): Field Ecology
BIOL 159 (4 semesters): Skills of Biological Investigation Laboratory
BIOL 101 (1 semester): Cell/Genetic/Physiology Laboratory

April 2015 – Jan 2016 Research Technician and Lab Manager

Dr. Jenn Rudgers and Dr. Ken Whitney labs, Biology
University of New Mexico

Dec 2013 – Dec 2014 Research Technician and Project Manager
Dr. John Poulsen lab, Nicholas School of the Environment
Duke University (based in Ivindo National Park, Gabon)

June – Oct 2013 Research Intern
Dr. Will Pockman lab, Biology
University of New Mexico

Jan – May 2013 Teaching Assistant
Dr. Scott Boback lab, Biology
Dickinson College

May – Aug 2012 Field Intern
Juneau Forestry Sciences Lab, Pacific Northwest Research Station
U.S. Forest Service

LEADERSHIP

Mentor to undergraduate students in Schweitzer lab conducting independent projects: trained students in field work (soil collection, plant data collection), greenhouse techniques (experimental set-up and data collection), laboratory techniques (soil DNA extraction), and data analysis (data curation, programming in R)

Active member in EKEE (Engaging Knoxville in Ecology and Evolution): collaborate with UTK Ecology & Evolutionary Biology graduate students to provide interactive activities for the public (Knoxville Farmer's Market, Knoxville EarthFest, Knoxville Boys and Girls Club, West High School) that teach the significance of ecological and evolutionary concepts.