Can the plant mycobiome serve as a tool for improving grass stress resistance?

Christine V. Hawkes[1], Hannah Giauque, Elise Worchel, and Moriah Sandy

Keynote Address

Paper summary: Plant symbiotic fungi can mediate plant stress physiology and thus provide a potential tool for increasing the sustainability of agricultural ecosystems. The development of such novel tools will be particularly important in the future given expectations of increasing drought and water scarcity. We focus on widespread foliar fungal endophytes in C4 grasses, where we have discovered a wide array of host-fungal relationships and simple traits to predict those functions. However, the observed benefits of individual fungi vary with the abiotic environment and biotic interactions, suggesting that implementation in real-world systems requires a mechanistic understanding with ecological context.

Speaker Biography: Dr. Christine Hawkes received a BA in Environmental Studies from Bucknell University and PhD in Biology from the University of Pennsylvania. She subsequently was a Smith Postdoctoral Fellow in Conservation Biology at the University of California Berkeley, and NSF Postdoctoral Fellow in Biology at the University of York in the United Kingdom. In 2005, Dr. Hawkes accepted an Assistant Professor position at the University of Texas Austin and was promoted to Associate Professor in 2011. Current research in the Hawkes lab is focused on both basic and applied aspects of plant-microbe interactions, including how fungal symbionts mediate plant drought responses.

[1]**Corresponding author**: Christine V. Hawkes, Department of Integrative Biology, 1 University Station, C0990, University of Texas at Austin, Austin, TX 78712. Email: chawkes@austin.utexas.edu

Co-author: Hannah Giauque, Department of Integrative Biology, 1 University Station, C0990, University of Texas at Austin, Austin, TX 78712. Email: hgiauque@gmail.com

Co-author: Elise Worchel, Department of Integrative Biology, 1 University Station, C0990, University of Texas at Austin, Austin, TX 78712. Email: eworchel@utexas.edu

Co-author: Moriah Sandy, College of Natural Sciences, 1 University Station, C2500, University of Texas at Austin, Austin, TX 78712. Email: msandy@utexas.edu