NIMBioS
National Institute for Mathematical and Biological Synthesis

cordially invites you to an

Interdisciplinary Seminar

with

Dr. Elizabeth Borer

on

"Tools to predict future Earth: Using theory and experiments to guide expectations for the future of the world's grasslands"

Tuesday, September 26, 2017
3:30-5 p.m.
Reception & refreshments at 3 p.m.

Hallam Auditorium, Room 206
1122 Volunteer Boulevard

Dr. Elizabeth Borer is a professor in the University of Minnesota's Ecology, Evolution, and Behavior Department. Her research focuses on quantifying how global changes, including atmospheric pollution and species invasions and extinctions, are changing the function of the world's ecosystems. Most of her work is in grasslands where she studies the effects of these human changes on global biodiversity, disease transmission, and the identity and function of microbes inhabiting individuals (the "microbiome").

Abstract: Among the greatest current challenges for ecology is understanding the links between biodiversity and ecosystem function, on one hand, and global-scale changes to nutrient cycles and species distributions, on the other. While these grand challenges are global in scale, such ecological experiments and sampling must be done at local scales. Distributed experimental networks, in which scientists around the world collaboratively replicate an experiment under many environmental conditions, are one tool with the potential to bridge the gap between site-scale experiments and global-scale predictions. Hypotheses generated from mathematical theory can serve as a logical guide in analyzing and interpreting data from sites around the world, providing insights into widespread responses and those that are context-dependent. By using theory to guide expectations, the Nutrient Network, a decade-long experiment being replicated at >100 sites around the world, has demonstrated that species diversity promotes ecosystem productivity and stability, and that nutrient supply and herbivory control diversity via changes in species composition, including invasions of non-native species and extinction of native species. I will discuss my experience of implementing a distributed network of identically-replicated grassland experiments motivated to build on ecological theory and will present some of the Nutrient Network's recent insights into the controls of diversity and function in the world's grassland ecosystems.

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The seminar will be live streamed. Visit http://www.nimbios.org/videos/livestream.
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