



The National Institute for Mathematical and Biological Synthesis

cordially invites you to an

## Interdisciplinary Seminar

# Dr. Megan Rúa

on

### ***“Fantastic Fungi! Exploring the ecological and evolutionary forces which shape host-microbe interactions”***

**Tuesday, October 13, 2015**

3:30-5 p.m.

*Reception & refreshments at 3 p.m.*

Hallam Auditorium, Room 206  
1122 Volunteer Boulevard



**Megan Rúa** (Ph.D., Environment and Ecology, Univ. of North Carolina, Chapel Hill, 2012) is using selective source analysis (SSA) to estimate selection due to interspecific interactions and other sources, which also involves employing meta-analysis in conjunction with SSA to examine these relationships across a broad array of hosts and their mycorrhiza.

**Abstract:** Coevolution describes evolutionary change in which two or more interacting species reciprocally drive each other's evolution. The strength of this selection process may vary spatially and temporally due to abiotic and biotic contextual factors. Interactions among plant hosts and their microbes may provide an ecologically unique arena in which to examine the nature of selection in multispecies interactions. In particular, interactions between coniferous plants and their microbes provide a good system for experiments exploring the relative importance of biotic versus abiotic sources of selection, as conifers interact with a suite of microorganisms including mutualistic ectomycorrhizal fungi (ECM), and these interactions vary along environmental gradients. In one of the first thorough explorations of multi-species interactions, I used observational, experimental, and theoretical approaches to investigate the interaction between plants and their microbes. Preliminary work examining the co-evolutionary relationship between plant hosts and their microbial mutualists indicate that not only fungal species identity but host genetic background play a significant component in shaping host-microbe-microbe relationships. Overall, this work demonstrates that mutualists can have important impacts on not only the host but also on the success of each other and highlights the importance of considering both ecological and evolutionary perspectives when examining the plant microbiome.



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