
Woods Hole Oceanographic Institution
Biology Department Seminar

Thursday, April 2, 2015
Redfield Auditorium – 12:00 Noon



**The role and maintenance of diversity in a
multi-partner mutualism: Trees and
ectomycorrhizal fungi**

Dr. Holly V. Moeller
Postdoctoral Fellow,
WHOI Biology Department

The tree of life is filled with examples of multi-partner mutualisms, in which one guild of organisms interacts with one or multiple other species for mutual benefit. How are these multi-species mutualisms maintained, and what is the functional role of species diversity within them? I use the metabolic mutualism between trees and ectomycorrhizal fungi, which links two fundamental ecosystem processes, to explore these questions. Using field surveys, experimental manipulation, and mathematical models, I identify mechanisms by which spatial and temporal heterogeneity and species interactions can maintain fungal diversity. I also describe the functional implications of this diversity, including effects on tree nutrition, growth, and tolerance of temporally fluctuating environments. Results have implications for our understanding of the maintenance of species diversity, the evolutionary stability of mutualisms, and the individual and ecosystem significance of metabolite exchange.