BREN SEMINAR

SCALING COMMUNITY ECOLOGY FOR PREDICTION IN A CHANGING WORLD

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Monday, November 20, 2017 11:00 – 12:00
Bren Hall 1414

"One of the wicked hard problems in environmental science is predicting how complex ecological communities will respond to anthropogenic environmental change. Dr. Barner combines rigorous experiments with advanced ecological theory to identify the information we need to make such predictions, as well as to understand the fundamental limits to ecological predictability."
— Bruce Kendall, Bren School Faculty Host

ABSTRACT Ecologists must increasingly balance the need for accurate predictions about how ecosystems will be affected by climate change against the fact that making such predictions may be infeasible. Although information about responses of individual species to a changing environment is increasing, predicting responses of ecological communities to climate change is constrained by limited knowledge about how interconnectedness among species contributes to system stability. I'll discuss three areas of my recent theoretical and empirical work on the architecture of perturbed natural systems: 1) evaluation of inferential methods used to quantify species interactions, 2) consequences of frequently ignored positive interactions for ecosystem response to change, 3) new frameworks for the study of complex interaction networks.

BIO Allison is a community ecologist whose work sits squarely between the worlds of experimentation and ecological theory. For her PhD in the Department of Integrative Biology at Oregon State University, she used experimental approaches to understand how diverse communities of species are formed, persist, and change in the Pacific Northwest rocky intertidal ecosystem. Currently, as a James S. McDonnell Foundation Fellow in Studying Complex Systems at the University of California Berkeley, Allison leverages computational and mathematical tools to investigate generalities in the structure and dynamical consequences of realistic and flexible species interaction networks undergoing change.

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