



NIMBioS

National Institute for Mathematical
and Biological Synthesis



NIMBioS Interdisciplinary Seminar 3:30 p.m.*, Tuesday, September 23, 2014

Dr. Angela Peace
NIMBioS Postdoctoral Fellow

“Stoichiometric Producer-Grazer Models Incorporating the Effects of Food Quality on Grazer Dynamics”

There has been important progress in understanding ecological dynamics through the development of the theory of ecological stoichiometry. By considering the balance of multiple chemical elements in ecological interactions, this fast growing theory provides new constraints and mechanisms that can be formulated into mathematical models. Stoichiometric models incorporate the effects of both food quantity and food quality into a single framework that produce rich dynamics. Here we present producer-grazer Lotka-Volterra type models to investigate the growth response of *Daphnia* to algae of varying phosphorus:carbon ratios. We incorporate the consequences of both phosphorus limitation as well as phosphorus excess on grazer's growth. These modeling efforts provide insight on the effects of varying nutrient content on grazer dynamics and deepen our understanding of the effects of stoichiometry on the mechanisms governing population dynamics and the interactions between trophic levels.

Location: Tom Hallam Auditorium, Room 206 at NIMBioS, Claxton Education Bldg, 1122 Volunteer Blvd.

*Join us for refreshments at 3 p.m. in Room 205.

For more information about this and other NIMBioS Seminars, visit <http://www.nimbios.org/seminars>

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The National Institute for Mathematical and Biological Synthesis (NIMBioS) brings together researchers from around the world to collaborate across disciplinary boundaries to investigate solutions to basic and applied problems in the life sciences. NIMBioS is sponsored by the National Science Foundation, with additional support from The University of Tennessee, Knoxville.