University of Miami
Institute for Theoretical and Mathematical Ecology
and the
Department of Mathematics
College of Arts and Sciences

Colloquium

Professor Simon Levin

George M. Moffett Professor of Biology, Princeton University
Director, The Center for Biocomplexity
Member, National Academy of Sciences
Member, Academy of Arts & Sciences

will present

"Crossing Scales: Evolutionary Approaches to Ecological Interactions"

Friday, January 18th, 2008
4:30- 5:30 pm, Ungar Bldg. Rm. 402

Refreshments served at 4:00 p.m. in CC 521

Abstract

There is a long history of mathematical research into the dynamics of populations, their ecological relationships, and their patterns of movement. There is a similarly rich literature in the dynamics of infectious diseases. In both cases, the bulk of the literature assumes particular relationships and asks what the consequences will be. But these relationships and the parameters that govern them have been shaped and continue to be shaped by evolution; this is, for example, why influenza A continues to be a scourge despite the fact that it confers lifetime immunity, why bacteria acquire resistance to antibiotics, and why collective behavior exists in societies from bacteria to humans. In this lecture, I will elucidate some of these issues, and suggest mathematical approaches to addressing them.