



# NIMBioS

National Institute for Mathematical  
and Biological Synthesis



## NIMBioS Interdisciplinary Seminar

3:30 p.m.\*, Tuesday, November 4, 2014

**Dr. Jake Ferguson**  
NIMBioS Postdoctoral Fellow

### “Stochastic models of populations in fluctuating environments”

All animal populations are in environments that fluctuate through time. However, data on the processes generating these fluctuations is often not available. One approach to account for this complexity is to study the long-run probabilistic properties of the fluctuations generated by environmental interactions. We will examine what this approach can teach us about specific cases of population-environment interactions and some of the general stochastic properties generated by these interactions. The emphasis will be on how stochastic models can shed light on unobserved ecological interactions and on the fundamental limitations of the approach. We will conclude by examining why inferring the role of environmental covariates on population growth is so difficult and how reformulating population dynamics using a more fundamental definition of the growth process may shed light on population-environment interactions.

**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.

**Can't be there in person?** Watch it live online. Details at <http://nimbios.org/videos/livestream>.  
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