



NIMBioS

National Institute for Mathematical
and Biological Synthesis



NIMBioS Interdisciplinary Seminar

3:30 p.m.*, Tuesday, March 31, 2015

Dr. Xiaopeng Zhao

**Mechanical, Aerospace, & Biomedical Engineering
Univ. of Tennessee, Knoxville**

“Multiscale Modeling of Complex Parasitic Transmission Mechanisms”

Parasitic pathogens often have complicated life cycles, making it hard to identify the right antigens for vaccine development. Using *Toxoplasma gondii* (*T. gondii*) as an example, this talk will discuss modeling approaches on understanding parasitic transmission mechanisms, including cellular-level kinetics, host-pathogen interaction, and population dynamics of complex parasitic infections. *T. gondii* is globally distributed and infects 30% of the world's population. Yet, the critical determinants that underlie the pathogen's ability to disseminate and establish chronic infection in the brain, smooth muscle and other tissues as well as to transmit between hosts remain poorly understood. Much work has been done on modeling the life cycle of *T. gondii* through an investigative workshop and a working group at NIMBioS. Results from the workshop and the working group will be reported and future research will be discussed.

Location: Room 205 at NIMBioS, Claxton Education Bldg, 1122 Volunteer Blvd.

*Join us for refreshments at 3 p.m.

**The seminar will be live streamed. Visit <http://www.nimbios.org/videos/livestream>.
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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

