



NIMBioS

National Institute for Mathematical
and Biological Synthesis



NIMBioS Interdisciplinary Seminar

Dr. Gesham Magombedze
NIMBioS Postdoctoral Fellow

3:30 p.m.**, Tuesday, September 4, 2012

Hallam Auditorium, Room 206
Claxton Education Building, 1122 Volunteer Blvd.

“Understanding the underlying mechanisms of persistence in Mycobacterial infections”

Mycobacterial infections, such as *Mycobacterium avium subspecies paratuberculosis* (MAP) which causes Johne's disease in cattle and other ruminants and *Mycobacterium tuberculosis* (MTB), which is the etiological agent of tuberculosis in humans, are characterized by a persistent and slow infection progression, which can be rapid under certain conditions. Mycobacterial pathogens have the ability to adapt to the changing intracellular environment in response to a dynamic immune response. The underlying mechanisms on how the bacilli can persist irrespective of the host mounting a robust immune response are poorly understood. This talk will: (i) provide insights in understanding some of the MTB bacilli mechanisms associated with its persistence using a mathematical framework that integrates gene expression data and systems biology biochemical systems theory; and (ii) present a mathematical immunological model that helps to understand the cattle immune response mechanisms that are associated with MAP infection progression.

****Join us for refreshments at 3 p.m.**

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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, the U.S. Department of Homeland Security, and the U.S. Department of Agriculture with additional support from The University of Tennessee, Knoxville.

