

Department of Applied and Computational Mathematics and Statistics Colloquium

Edwin Michael


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will give a lecture entitled:

Modelling Parasite Transmission: Exploring Impacts of Biocomplexity, Climate Change and Co-Infections

Abstract

Recently, there has been increasing recognition of the need to address the complex dynamics of parasitic infection. Gaining a better understanding of parasite transmission dynamics and designing more effective interventions will allow for controlling or eliminating these parasites. Here, I will describe recent modelling work in vector-borne diseases we have been developing for: 1) examining the impact of biocomplexity in the transmission and control of lymphatic filariasis, highlighting the impact that uncertainties, heterogeneities and non-linearities may have on the stability and extinction dynamics of this parasitic disease, 2) determining the role that climate variability and change may play in governing the transmission dynamics of malaria, and 3) exploring the impact that co-infections may have on the transmission dynamics of both filariasis and malaria in co-endemic populations. Throughout the novelty of the approaches developed, as well as areas in which further work is required, a view to facilitate initiation of fruitful collaborative work between epidemiologists, ecologists, and both pure and applied mathematicians will be highlighted and discussed.



**Monday, May 16th, 2011
4:00 p.m. to 5:00 p.m.
129 Hayes-Healy Center**