HUAIPING ZHU, York University
Local and global dynamics of models for mosquito-borne diseases

Mosquitoes and mosquito-borne diseases (MBDs) have become a severe burden of public health. Among many concerns, public health concerns most about the triggers of an outbreak and conditions of repeated infestations. In this talk, I will present some of our dynamical studies to answer the two questions mathematically. I will introduce the local dynamics including local stability and lower codimension bifurcations and their association with the triggering conditions of an outbreak. Besides, I will mainly focus on explaining the global stability, existence and non-existence of periodic solutions, and one related open problem for MBDs.