Neglected Tools in Tropical Diseases: Lessons from Modeling Leishmaniasis, West Nile Virus, and Ebola

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In a rapidly urbanizing world, changes in land use, host species diversity, and terrestrial biodiversity are expected to impact vector-borne disease ecology. The increase in risk to human and animal health as a result of these ecological changes and reductions in biodiversity place greater emphasis on the need for development of robust mathematical models to accurately assess vector-borne disease transmission. In this talk, I will illustrate multiple examples from my research where I with my collaborators have developed and analyzed novel modeling tools to study impact of multiple reservoir hosts, global travel patterns and vector-host interactions on the transmission dynamics of diseases such as Leishmaniasis, West Nile Virus and Ebola.