

# Heterogeneities in the Transmission Dynamics of Leishmaniasis: Modeling Implications on Sustained Drive to Control it from Neglected Regions

Anuj Mubayi<sup>1,\*</sup>

<sup>1</sup> *School of Human Evolution and Social Change, Simon A. Levin Mathematical Computational Modeling Science Center, Arizona State University, Tempe 85281*

[amubayi@asu.edu](mailto:amubayi@asu.edu)

Leishmaniasis is a neglected vector-borne disease transmitted to humans by a bite of sandflies species infected with *Leishmania* parasite. WHO has been implementing various control strategies such as rapid case detection, treatment of cases and vector control using indoor residual spraying in various parts of the world but have achieved only moderate success. Crucial knowledge gaps in vector biology, human infection and transmission, in response to intensified intervention, still persists and need to be addressed. In this talk, we will examine the outstanding knowledge gaps and show how mathematical modeling methods, used effectively for other diseases, have a capability to address the changing challenges related to control of Leishmaniasis. Understanding of the transmission dynamics of Leishmaniasis will help guide how efforts can be sustained and eventual elimination can be achieved.