

Department of Tropical Medicine Seminar Series

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**Monday, September 18th
1:00PM-2:00PM in JBJ 504**

**Modeling the transmission of *Wolbachia*
in mosquitoes for controlling mosquito-
borne diseases**



Dr. Zhuolin Qu
Postdoctoral fellow, TU

Wolbachia is a natural parasitic microbe that stops the proliferation of viruses, such as dengue, chikungunya and Zika, inside the mosquito. It has been recently proposed to control mosquito-borne epidemics. However, it is difficult to sustain a stable *Wolbachia* infection in a wild mosquito population because of the reduced fitness of the infected mosquitoes. We develop and analyze a differential equation model to quantify a minimum threshold that must be exceeded for the infection to persist and assess the potential effectiveness of *Wolbachia*-based mitigation strategies.