XI HUO, University of Miami

Vector-borne disease outbreak prevention: linking mosquito trap data to mathematical models

Aedes aegypti is responsible for a few arbovirus transmissions. In this talk, I will present how we connect differential equation parameters with the mosquito trap data collected from 2017 to 2019. The model is then used to compare the Ae. aegypti population and evaluate the impact of rainfall intensity in different urban built environments. Our results show that rainfall affects the breeding sites and the abundance of Ae. aegypti more significantly in tourist areas than in residential places. In addition, we apply the model to quantitatively assess the effectiveness of vector control strategies in Miami-Dade County in South Florida, USA.