

BIOMATH SEMINAR

Friday, October 30

1-2 pm

Harris 4119

A stage-structured model for *West Nile virus* enzootic transmission

Dr. Suzanne Robertson
VCU

Abstract: West Nile virus (WNV) outbreaks have been widely associated with the end of the avian nesting season. In this talk we develop and evaluate a novel mathematical model of enzootic WNV transmission to gain insight into the ecological mechanisms responsible for the timing and magnitude of seasonal outbreaks. We incorporate avian (host) stage-structure (nestling, fledgling, and adult) and within-species heterogeneity in the form of stage-specific mosquito (vector) biting rates. We determine the extent to which changes in host stage abundance throughout the season, along with the differential exposure of these stages to mosquito bites, affect WNV transmission dynamics.