1145-92-1762 **Suzanne Robertson*** (srobertson7@vcu.edu). *Modeling and control of enzootic West Nile virus transmission: The role of the avian nesting curve.*

West Nile virus (WNV) is a major public health concern in the United States. While seasonal WNV outbreaks have been widely observed to be associated with the end of the avian nesting season, the ecological mechanisms responsible for this synchronicity are poorly understood. Newly hatched birds, or nestlings, have less feather coverage and fewer defense mechanisms than older birds, rendering them more vulnerable to mosquitoes. The rate at which new nestlings are produced is determined by the nestling recruitment curve, which can vary with avian species as well as climate. We use a mathematical model incorporating avian (host) stage-structure and within-species heterogeneity in the form of stage-specific mosquito (vector) biting rates to investigate the connection between properties of the avian nesting curve and enzootic WNV transmission. We determine the extent to which temporal fluctuations in host stage and vector abundance throughout the season, along with the differential exposure of these stages to mosquito bites, affects the timing and magnitude of WNV activity, as well as implications for public health interventions. Specifically, we explore the viability of nestling vaccination as a control for WNV. (Received September 24, 2018)