1155-92-454 **Kyle Dahlin*** (kdahlin@purdue.edu), 150 N University Street, West Lafayette, IN 47907.
Investigating the effect of the development of host tolerance in the transmission of mosquito-borne diseases. Preliminary report.

We develop a general model of sensitive, tolerant, and resistant sub-populations of a host population affected by a mosquito-borne disease. Sensitive hosts experience disease-induced mortality while tolerant hosts do not and are less effective at transmitting infectious agents. The impact of the evolution of tolerance in a sub-population of hosts on the overall host population is investigated. The creation of this reservoir of competent hosts has a non-linear effect on the overall population size. We consider the impact of translocation of tolerant hosts to a totally sensitive population and examine disease control measures that mitigate the potential harmful effects of translocation. We discuss applications of this model to particular systems of mosquito-borne viral or parasitic diseases in human or animal populations. (Received January 20, 2020)