1135-92-645 **Alex P Farrell**, **James P Collins**, **Amy L Greer** and **Horst R Thieme*** (hthieme@asu.edu), School of Mathematical, and Statistical Sciences, Arizona State University, Tempe, AZ. *Can infectious pathogens drive their host populations into extinction?*

Amphibian decline and disappearance have renewed interest in the part infectious diseases have in the extinction of their host species. In simple SI epidemic and endemic models, three classes of incidence functions are identified for their potential to be associated with host extinction: Upper density-dependent incidences are never associated with host extinction. Power incidences that depend on the numbers of infectives and susceptibles by powers strictly between 0 and 1 are associated with initial-constellation-dependent host extinction for all parameter values. Homogeneous incidences, of which frequency-dependent incidence is a very particular case, and power incidences are associated with global host extinction for certain parameter constellations and with host survival for others. This leaves the question undecided that motivated this analysis, namely whether ranavirus epidemics can drive tiger salamander populations into extinction. Laboratory infection experiments with salamander larvae are equally well fitted by power incidences and certain upper density-dependent incidences such as the negative binomial incidence and do not rule out homogeneous incidences such as an asymmetric frequency-dependent incidence either. (Received September 11, 2017)