

1135-92-3150

**Stanca Ciupe** and **Jonathan Forde\*** ([forde@hws.edu](mailto:forde@hws.edu)), Dept. of Mathematics and Computer Scienc, 300 Pulteney St., Geneva, NY 14456, and **Christopher Miller**. *Bistable dynamics in a model of SIV infection with antibody response.*

Experiments in rhesus macaques have shown that for simian immunodeficiency virus the size of the viral inoculum and the infection stage of the donor animal alter the likelihood of establishment of infection. In this study, we postulate a role for the host and donor antibodies in explaining the dependence of infectiousness on donor infection stage. The resulting mathematical model exhibits bistable dynamics, with viral clearance and persistence dependent on initial conditions. We fit the model to temporal virus data using a censored data approach for measurements below the limit of detection, and make predictions about the minimal viral load in the inoculum required for persistent infection. (Received September 26, 2017)