1125-92-2029 **Naveen K. Vaidya*** (vaidyan@umkc.edu), Kansas City, MO 64110. *Mathematical models to evaluate morphine–altered antibody responses on HIV Dynamics.*

Use of drugs of abuse among HIV infected individuals is rapidly increasing, and thus, is a major concern in HIV infections. In this talk, I will present mathematical models that incorporate the effects of morphine-altered antibody responses on HIV dynamics within a host. The model is consistent with the experimental data from simian immunodeficiency virus (SIV) infections in morphine-addicted macaques. Using our model, we quantify how morphine alters the HIV-specific antibody responses and how this alteration affects the key components of virus dynamics such as the infection rate of target cells and the clearance rate of free viruses. Furthermore, we incorporate pharmacodynamics properties of morphine into the model and analyze how periodic morphine intake affects the global stability properties of host-virus dynamical system. (Received September 19, 2016)