

1135-34-2957

Jones M Mutua*, Department of Mathematics and Statistics, 206 Haag Hall, 5100 Rockhill Rd, Kansas City, MO 64110, and **Alan S Perelson, Anil Kumar** and **Naveen K Vaidya**. *Modeling Immune Responses to HIV infection Under Drugs of Abuse*.

Drugs of abuse, such as opiates, have been widely associated with enhancing HIV replication, accelerating disease progression and diminishing host immune responses, thereby making it harder to effectively manage HIV infections. In this talk, I will present a mathematical model incorporating antibody responses to HIV infection under morphine conditioning. We further extend the model to study the effects of pharmacodynamic properties of morphine on HIV dynamics. Finally, we present analysis of our model to study how periodic morphine intake influences HIV dynamics within a host. (Received September 26, 2017)