1106-37-2343 **Farrah Sadre-Marandi*** (sadre@math.colostate.edu), Department of Mathematics, 1874 Campus Delivery, Fort Collins, CO 80523-1874. *A Kinetic Model for HIV-1 Viral Capsid Nucleation.* Preliminary report.

The viral capsid acts as a protective shell for the genetic material (DNA or RNA) of virus. Viral capsid assembly goes through two stages during maturation: nucleation and elongation. After maturation, a virus is able to attack new host cells and replicate its DNA or RNA, leading to virus spread throughout the host body. Therefore, it is of great interest to characterize favorable, restrictive, and prohibitive conditions for viral capsid assembly so that antiviral therapies can be developed. This talk presents a mathematical model developed specifically for the nucleation of HIV-1 capsid. Numerical simulations of HIV-1 capsid nucleation are conducted using a 6-species dynamical system model. Deterministic and stochastic factors in this process will be examined as well as the sensitivity of the system behavior to model parameters. This research was funded by an NSF EAPSI award during the speaker's visit to study under Dr. Xiufen Zou at Wuhan University in China. (Received September 16, 2014)