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Rachel C. Koskodan* (rachel.c.koskodan@ttu.edu). *Stochastic Models of Intracellular Viral Dynamics and Stock Pricing*. Preliminary report.

Two research projects are examined in this talk. The first project concerns the derivation of a stochastic differential equation model of intracellular viral dynamics. The components in the model are viral nucleic acids and a viral structural protein. A coupled nonlinear system of Ito stochastic differential equations is obtained that describes the viral dynamics. The second project studies a new stochastic differential equation model for stock prices and stock interactions. The model is applied in estimating option prices. (Received September 14, 2005)