1127-60-256　　　　**Lochana Siriwardena*** (`siriwardenal@uindy.edu`). *Generalized Stochastic Delay Models with Applications to Finance.* Preliminary report.

Stochastic models are very popular and play an important role in financial applications. Geometric Brownian motion has played a significant role in modeling stock prices in the Black-Scholes option-pricing model and Feller's square root process (generalized squared Bessel process) has been used to model short-term interest rates in the Cox–Ingersoll–Ross (CIR) model. These processes are related to Bessel processes via space-time transformations. In this talk, some generalizations of the above mentioned models would be presented. Two of the generalizations are based on the growth rate of the processes allowing functional coefficients that take the prior values of the process into account. The other generalization extends the CIR process with a logistic drift term. Existence and uniqueness will be discussed for the generalized models with non-linear drifts and non-Lipschitz diffusion terms. Boundary behavior and asymptotic properties of the models will also be discussed. (Received February 05, 2017)