1097-60-329 **Brent Bundick** and **Yong Zeng*** (zengy@umkc.edu). *Real-time Stochastic Volatility Estimation via Filtering Equation of a Partially-Observed Heston Model for Ultra-High Frequency Data.*

This talk first briefly reviews a general partially-observed framework of Markov processes with marked point process observations recently proposed for ultra-high frequency data, and the Bayes Estimation via Filtering Equation (BEFE). In recent years, Graphics Processing Units (GPUs) evolved from rendering graphics (linear algebra-like computations) for electronic games and video applications to becoming low-cost and green supercomputing units. With harnessing the newly available GPU high performance computing power in mind and targeting a benchmark Heston stochastic volatility model, we develop a new easily-parallelized, uniformly consistent, recursive algorithm via BEFE for propagating and updating the joint posterior distributions. We show that the recursive algorithm is well suited for GPU parallel computing. We present simulation and empirical results obtained from supercomputers to demonstrate that the recursive algorithm works. Real time tracking and feeding stochastic volatility is made possible. (Received January 26, 2014)