1136-92-184 **Hye-Won Kang*** (hwkang@umbc.edu), 1000 Hilltop Circle, Baltimore, MD 21250. *Multiscale stochastic reaction-diffusion algorithms for biochemical networks.*

A Markov chain model has become popular to present the discrete nature of the molecular copy numbers and inherent stochasticity in reaction-diffusion systems, but its computation can be expensive. A possible approach to reduce computational cost is to approximate a part of the model by some coarse-grained methods. In this talk, I will introduce two multiscale algorithms coupling the suitably discretized stochastic partial differential equations (SPDEs) and the Markov chain model, which provide good approximations to the solutions obtained by the Markov chain model applied in the entire spatial domain. Two coupling methods of the Markov chain model and the SPDEs across the interface will be discussed. This is joint work with Radek Erban at the University of Oxford. (Received January 14, 2018)