1116-92-2503 **Reginald L. McGee*** (mcgee.278@mbi.osu.edu), The Ohio State University, 1735 Neil Avenue, Columbus, OH 43210, and **Ann E. Rundell** and **Gregery T. Buzzard**. *Reductions in dynamic uncertainty for a B cell antigen receptor signaling model using a MINE criterion.*

Mathematical modeling is a powerful tool in systems biology; we focus here both on model development and on improving the reliability of model predictions by reducing the uncertainty in model dynamics through experimental design. Model-based experimental design is a process by which experiments can be systematically chosen to reduce dynamic uncertainty in a given model. We discuss the Maximally Informative Next Experiment (MINE) method for experimental design and present a convergence result for MINE with nonlinear models. As an application, we apply the method to a B cell antigen receptor signaling model, previously used to study the effects of inhibition of key kinases on downstream signaling factors. This nonlinear dynamical system model has been expanded to include structure for the NFAT pathway, but there is limited data to identify parameters and reduce the existing uncertainty in the dynamics. The MINE criterion sequentially determines experiments that can be conducted to best refine the dynamics for this added signaling pathway. (Received September 22, 2015)