Matthew D Johnston* (m.douglas.johnston@gmail.com), 21000 W 10 Mile Rd, Southfield, MI 48075, and Stefan Muller and Casian Pantea. Steady State Parametrizations for Biochemical Reaction Systems.

Significant work has been conducted in recent years on establishing recurring motifs in biochemical interaction networks, such as signal transduction cascades and gene regulatory networks, which are predictive of experimentally observed behaviors. Work in this area is notably challenging due to the significant number of species involved in typical biochemical reaction pathways and the unknown values of the rate parameters. In this talk, we focus on recent results on parametrizing the steady state sets of large biochemical reaction systems with mass action kinetics. We also present computational work toward the goal of integrating the theory with practice. Applications include the EnvZ-OmpR osmoregularity pathway and the Shuttled WNT signaling pathway. (Received July 13, 2019)