

# Reverse engineering neutrophil polarity network

Lani Wu

*Green Center for Systems Biology, University of Texas Southwestern Medical Center, Dallas,  
Texas 75230, USA*

A central question in biology is how complex, spatial-temporal cellular behaviors arise from biochemical networks. Much work has led to the identification and cataloguing of various network architectures, and the explication of how static network motifs can give rise to dynamic response characteristics, including ultrasensitive, switch-like, and oscillatory behaviors. However, the wiring diagrams of signaling networks are often inferred by combining results from diverse assays. Such diagrams may not represent accurately the operating state of the network in any cell, condition or time point. In this talk, we will discuss recent progress in using perturbation analysis and cellular heterogeneity to constrain network crosstalk from cellular behaviors.