

Workshop: *Deconstructing Biochemical Networks*
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*Modeling Adaptation in E. coli Chemotaxis:
Precise, Robust, and Optimized?*

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Abstract

The chemotaxis system of bacteria is remarkable for its sensitivity to multiple ligands, over a wide range of concentrations. These properties rely on cooperativity within clusters of receptors and on an adaptation system in which chemoreceptors are modified by methylation/demethylation. I'll discuss recent experiments that reveal new aspects of adaptation, including "assistance neighborhoods" in which tethered modifying enzymes can act on multiple receptors, and adaptive variation in the sizes of receptor clusters.