

Center for Biocomplexity Colloquium

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“Chemosensory Regulation of Biofilm Formation”

Thursday, April 16, 2009
4:00pm
127 Hayes-Healy Center
Tea at 3:30pm in 257 Hurley

Signal transduction in bacteria has focused primarily on the role of two-component systems, the vast majority of which are predicted to regulate gene expression in response to environmental stimuli. One notable exception is the chemotaxis system that regulates motility as described for *E. coli*. Our analysis of the eight chemotaxis-like “chemosensory” systems in *Myxococcus xanthus* has led to the understanding that these chemosensory systems evolved to regulate a variety of cellular functions. Although each chemosensory system comprises homologs to the chemotaxis proteins CheA, CheB, CheR, CheW, and chemoreceptors (methyl-accepting chemotaxis proteins or MCPs), both the inputs and outputs of these systems are unusual with respect to the previously described prototypical systems that control motility. Our research has shown that chemosensory signaling pathways govern many critical features of biofilm development, predator-prey interactions, and stress responses culminating in spore production for *M. xanthus*.