Combining Biophysical and Genetic Approaches for Understanding Membrane Proteins

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G Protein Coupled Receptors (GPCRs) mediate cellular responses to a variety of sensory stimuli, hormones, growth factors, and neurotransmitters and are targets of a number of widely prescribed drugs, however, their mechanisms of action remain poorly understood. We are using a combination of genetic, biochemical, and biophysical methods to study GPCRs, focusing primarily on the mating pheromone receptors of yeast, which are functionally interchangeable with some mammalian GPCRs. Our lab is currently focusing on characterizing mutations that can provide information on the structural changes associated with activation of receptors, on interactions between receptors, and on the different interactions with agonistic and antagonistic ligands that elicit different downstream signaling responses. In a related project, we are also using the ability to detect the fluorescence of single molecules to identify conformational fluctuations in populations of membrane proteins.

Stowell Hall, Room 211
Light refreshments will be served.
Everyone is welcome.