Computer Simulations of Yeast Mating Reveal Robustness Strategies for Cell-Cell Interactions

Ching-Shan Chou

Department of Mathematics, The Ohio State University, USA

Email: chou@math.osu.edu

Cell-to-cell communication is fundamental to biological processes which require cells to coordinate their functions. In this talk, we will present the first computer simulations of the yeast mating process, which is a model system for investigating proper cell-to-cell communication. Computer simulations revealed important robustness strategies for mating in the presence of noise. These strategies included the polarized secretion of pheromone, the presence of the alpha-factor protease Bar1, and the regulation of sensing sensitivity.