

Biomedical Engineering



Seminar

The Virtual Cell Project

By

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United Technologies Building, Room 150

5:00-6:00 pm

Abstract:

Cells and their subcellular organelles can have complex structures that provide a framework for the spatial distribution of signaling molecules. But how this cellular architecture shapes and controls the response of cells to their environment is a question that is not often addressed, perhaps because of the lack of appropriate systems biology modeling tools. The Virtual Cell is a computational modeling software environment that has been designed to address this need. It facilitates the organization of experimental data into quantitative hypotheses and the generation of predictions from them. A key feature of the Virtual Cell is that it permits the incorporation of experimental microscope images within full 3D spatial models of signal transduction networks. The operation of the Virtual Cell will be illustrated with PDE models of several important cell signaling and membrane transport processes.