



# PHYSICS AND ASTRONOMY COLLOQUIUM

## Dr. Paul Wiggins

University of Washington

### “The Dynamics of E. Coli Ultra-Structure”

#### Abstract

Almost all biological systems exhibit precise spatial and temporal control of protein, mRNA, and DNA localization, demonstrating that cells measure distance and detect proximity with a molecular-scale tool kit.

Although these phenomena have traditionally been studied in the context of the detailed expression patterning in development, recent exciting results reveal that intricate spatial organization is the rule rather than the exception in the bacterial cell. Prokaryotic cells develop cell polarity, exhibit time-dependent gradients of protein concentration, can divide with astonishingly high-precision at midcell, and exhibit precise control over the spatial positions of genetic loci in the cell. In this talk I will describe some preliminary results from our work to capture, analyze, and model the dynamic localization of proteins in E. coli at a systems scale.

Wednesday, February 29, 2012

3:30 p.m.

Bob Wright Centre

Room A104