Mathematics Department

Welcomes

Dr. Ian Besse

Candidate for a Tenure Track
Position in Mathematics

Dr. Besse will present a colloquium talk on:

"Modeling Cardiac Electrophysiology: Mathematics of the Heartbeat"

A single heartbeat is the result of countless interdependent chemical, electrical, and mechanical processes occurring on multiple scales. Central to these processes is a complicated electrochemical event called the action potential which initiates cardiac cell contraction. Efforts to mathematically model these complex electrodynamics live at the crossroads of math, biology, physics, chemistry, and electrical engineering. In this talk, I will present a brief introduction to cardiac electrophysiology and biophysical principles. I will then derive, from these principles, the standard mathematical framework underpinning many cardiac action potential models and discuss the research I conduct which is aimed at developing models which explore the implications of some new experimental findings. This talk will discuss how mathematical modeling can be used as a powerful tool to provide insight into biophysical mechanisms, to develop new hypotheses, and to inform experimental design.

Monday, January 25, 2010, at 4:10 p.m.
Hayes Hall 311

Also

Please join us during Dr. Besse's mock class which will be held:

Tuesday, January 26, at 11:10 a.m.
Hayes Hall 311