RYERSON UNIVERSITY
DEPARTMENT OF MATHEMATICS
COLLOQUIUM

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Date: Monday, March 2, 2015

Time: 1:10 pm

Location: ENG 210

Secrets of success for numerical methods in heart simulation

Abstract: Cardiac electrophysiology can be mathematically modelled by the bidomain equations, a multi-scale reaction-diffusion system of nonlinear ODEs describing the ionic currents at the cellular scale coupled with a set of PDEs describing the propagation of the electrical activity at the tissue scale. To solve the bidomain equations and produce clinically useful data via simulation, billions of variables must be evolved. Even with modern-day computing hardware, the efficiency of the numerical methods employed is critical in determining the viability of a simulation. In this presentation, I reveal the secrets of success for some time-integration methods for the bidomain equations.

All Faculty, staff, students and guests are welcome to attend