



Complexity Science Seminar

Wednesday, March 12, 2008

ICT 618B 4:00PM

Dr. Wayne Giles
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Mathematical Models of Human Heart Electrophysiology

Formulation of mathematical models of the cardiac action potential or of intercellular coupling in the heart requires a detailed understanding of the intrinsic nonlinearities in the ion channels which are involved. My talk will illustrate this fundamental point in terms of a family of $[K^+]$ sensitive ion channels which are the nanomachines/ biosensors for changes in plasma $[K^+]$. In the heart, in skeletal muscle, and in endothelial cells these ion channels also strongly modulate the resting potential.