



The Department of Mathematics, in conjunction with
the Distinguished Visitors Program, presents a talk by

Michael Lavine

Professor of Statistics, University of Massachusetts at Amherst

Spike Trains and Human Brains

Abstract:

In one type of experiment, neurobiologists insert small electrodes into the brains of living animals. The electrodes are fine enough to record electrical signals from individual neurons, so we can record when each neuron fires. Such data are called spike trains. I will show what spike trains look like, how they can be used to learn how neurons work together and how they can be used to learn how the brain encodes various sensations like taste.

In another type of experiment, neurosurgeons working on human epileptic patients take a series of digital photographs of the brain. I will show how these photographs can be used to follow the path of an electrical signal across the surface of the brain and determine which regions of the brain do and don't respond to the signal.

Tuesday, October 7, 2008

Lunch and Tea at 11:00 a.m., Talk at 11:30 a.m. - 12:30 p.m.

KINSC - Sharpless Auditorium