



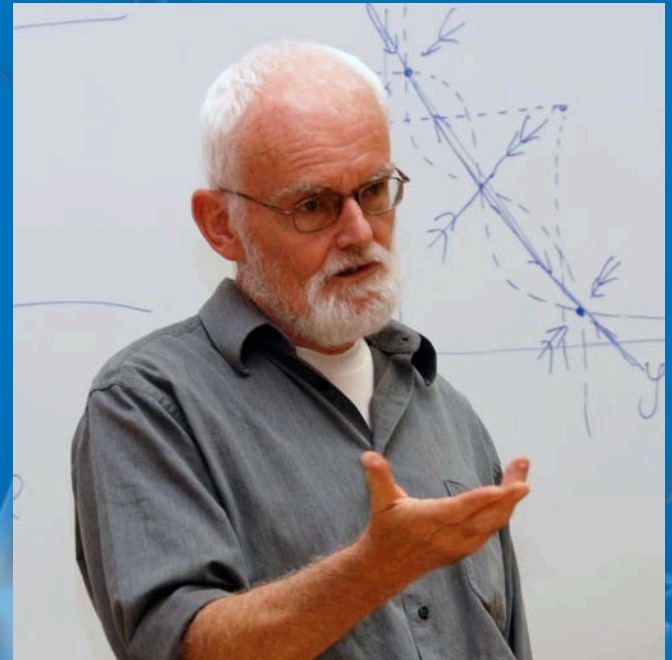
Pacific Institute *for the*
Mathematical Sciences

PIMS Hugh Morris Lecture Series

Philip Holmes (Princeton University)

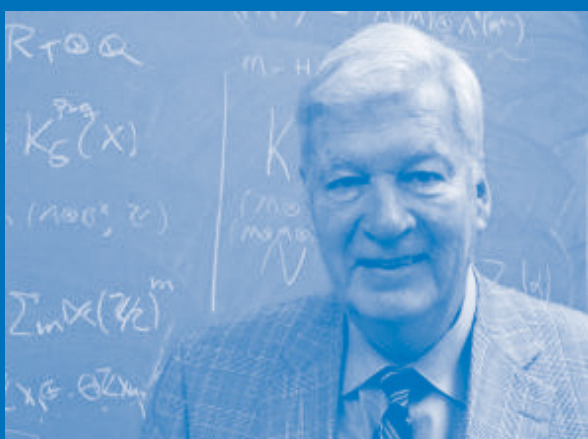
*Can We Choose Optimally? The
Neural Dynamics of Decisions*

November 1, 2013, 3:00 pm
University of British Columbia
Earth Sciences Building room 2012
Reception at PIMS, 2:30 pm



Abstract: Each day we make many choices, often under time pressure and with poor information. How do we do this? The basic electro-chemistry of individual neurons and synapses in our brains is fairly well understood. The key problem is one of scale: how do almost a trillion neurons and many more synapses interact to sift noisy evidence and weigh it against prior knowledge? I will describe how mathematical models, coupled with human and animal experiments, illuminate the neural mechanisms responsible for some simple decisions and actions.

Bio: Philip Holmes is the Eugene Higgins Professor of Mechanical & Aerospace Engineering at Princeton University. He is a member of the American Academy of Arts and Sciences and a Fellow of the American Physical Society, the Society for Industrial and Applied Mathematics and of the American Mathematical Society. His research is in nonlinear dynamics and differential equations, developing qualitative and analytical methods for studying mathematical models of solid, fluid, and biological systems.



About this series: This Series has been generously endowed by Dr. Hugh Morris (1932-2012), former Chair of the PIMS Board of Directors, and long-time friend of the mathematical sciences. Dr. Morris had more than 40 years of experience in the mineral industry, including a term as Chairman and Chief Executive Officer of Imperial Metals, and was a fellow of the Royal Society of Canada. Dr. Morris was a member of NSERC's Council and Chairman of the Board of Directors of the Lithoprobe Project.