Pacific Institute *for the* Mathematical Sciences

PIMS - HUGH MORRIS LECTURE

MATHEMATICAL BIOLOGY SEMINAR - AMI SEMINAR

JONATHAN RUBIN

Friday, March 15, 2019
Reception: 3-4 pm; Lecture 4-5 pm

Room CCIS 1-160
University of Alberta

MATHEMATICAL APPROACHES TO UNDERSTANDING PARKINSON'S DISEASE & ITS TREATMENTS

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Dr. Rubin majored in Mathematics as an undergraduate at The College of William and Mary and received his Ph.D. in Applied Mathematics from Brown University in 1996. He was a Zassenhaus Assistant Professor and then a National Science Foundation Postdoctoral Fellow in the Department of Mathematics at The Ohio State University before joining the Pitt Mathematics faculty in 2000. In addition to his Mathematics position, he is a Graduate Faculty member, a Center for Neuroscience at University of Pittsburgh Graduate Training Faculty member, a member of the Center for the Basis of Neural Cognition, an affiliate of the McGowan Institute for Regenerative Medicine, and a Visiting Professor in Computational Biology.

Abstract

Parkinson's disease is a debilitating condition causing highly disruptive motor complications. Although this condition has long been recognized and treated medically, many aspects of the disease and its treatment are not well understood. In fact, there are a range of opportunities for the application of mathematical and computational methods to provide a better understanding of the mechanisms involved in Parkinson's disease and to optimize therapeutic approaches.

In this talk, I will discuss how a mathematical model can be developed and used to suggest new predictions about the emergence of neuronal activity associated with parkinsonism, about the ways in which this disturbed activity can lead to motor symptoms, and about how stimulation-based therapy might help to counteract this process.

WEBSITE: HTTPS://WWW.PIMS.MATH.CA/SCIENTIFIC-EVENT/190315-HCMLUJR

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