



*The University of Western Ontario*

Faculty of Science

Department of Applied Mathematics

# APPLIED MATHEMATICS COLLOQUIUM

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Date: Thursday, November 6, 2008

Time: 3:00 pm

Location: Middlesex College, Room 204

## **Symmetric Networks of Differential Equations**

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**University of Ontario Institute of Technology**

### **Abstract:**

This talk will discuss applications and theory of symmetrically coupled cell systems of differential equations. A cell is a differential equation and a coupled cell system is a directed graph where each node is a cell and the arrows are the coupling between the cells. I will begin by presenting some examples where the cells are ordinary differential equations and discuss results associated with symmetric networks. Then, I will talk about networks where delays enter the cells and the delays, thus turning the coupled cell system into a functional differential equation. I will present results about the local bifurcation theory of these systems and discuss interesting research questions linked with those systems.