Joint AARMS-CRM Workshop: Recent Advances in Functional and Delay Differential Equations 1–5 November 2007

## Understanding the dynamics of gene regulatory systems: a mathematical modeling approach

Michael C. Mackey

Department of Physiology McGill University 3655 Promenade Sir William Osler Montréal, Québec H3G 1Y6 michael.mackey@mcgill.ca

## Abstract

In this talk I will examine the varied experimental dynamics that gene regulatory networks can display and the mathematical modeling attempts that have been successfully employed to understand these dynamics. The nonlinearities and time delays inherent in these systems, along with their inherent stochasticity, pose interesting and unique mathematical problems for the modeler and the models often help illuminate the underlying biology.