

RYERSON UNIVERSITY
DEPARTMENT OF MATHEMATICS
BIOMATHEMATICS & FLUIDS SEMINAR

Dr. Matthew Scott

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Date: Thursday, January 30, 2014
Time: 11:10 a.m.
Room: ENG 210

Title: Indirect regulation of bacterial gene expression imposed by growth and division

Abstract:

In bacteria, the rate of cell proliferation and the level of gene expression are intimately connected. Uncovering these relations is important both for understanding the physiological functions of endogenous genetic circuits and for designing robust synthetic systems. I will discuss a phenomenological study that reveals intrinsic constraints governing the allocation of resources towards protein synthesis and other aspects of cell growth. The use of such empirical relations, analogous to phenomenological laws, facilitate our understanding and manipulation of complex biological systems before underlying regulatory circuits are elucidated. Furthermore, these 'growth laws' provide a physiological context for mathematical modeling of living systems.

ALL FACULTY, STAFF, STUDENTS AND GUESTS ARE WELCOME TO ATTEND
LIGHT REFRESHMENTS WILL BE PROVIDED