RYERSON UNIVERSITY
DEPARTMENT OF MATHEMATICS
BIOMATHEMATICS & FLUIDS SEMINAR

Dr. Daniel Munther

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Date: Thursday, November 15, 2012
Time: 2:10 p.m.
Room: ENG 210

Title: Dynamics of a Three Species Competition Model

Abstract:

We investigate the dynamics of a three species competition model in which all species have the same population dynamics but distinct dispersal strategies. Gejji et al. (*Evolutionary convergence to ideal free dispersal strategies and coexistence*, Bull. Math. Biol., 74 (2012), 257-299) introduced a general dispersal strategy for two species, termed as an ideal free pair in this talk, which can result in the ideal free distributions of two competing species at equilibrium. We show that if one of the three species adopts a dispersal strategy which produces the ideal free distribution, then none of the other two species can persist if they do not form an ideal free pair. We also show that if two species form an ideal free pair, then the third species in general can not invade. When none of the three species is adopting a dispersal strategy which can produce the ideal free distribution, we find some class of resource functions such that three species competing for the same resource can be ecologically permanent by using distinct dispersal strategies. This is joint work with Yuan Lou from Ohio State University.

All Faculty, staff, students and guests are welcome to attend
Light refreshments will be provided