

## Announcing

**COS Graduate Seminar**

**March 3, 2006 at 2:00 pm**

**Southern Hall 303**

**at The University of Southern Mississippi**

**Speaker: Dong Liang**

York University  
Canada

**Title: Computational Population Dynamics  
with Diffusion and Delayed Nonlocal Effects**

### **Abstract:**

Computational biology has been playing more and more important roles in discovering the relation between species and their environment and in understanding the dynamic processes in such areas as spread and control of disease and viruses, predator-prey and competition interaction, evolution of pesticide-resistant strains, biological pest control, plant-herbivore systems, and so on. Recently, of particular concern is the joint impact of individual motions, diffusion dynamics and non-local delayed effects on population growth. In this talk, we consider the population growth for species living in a high-dimensional spatial field. We derive the models with diffusion and delayed nonlinear non-local reactions on unbounded and bounded domains. Numerical simulations are taken for investigating numerically the occurrence of one-hump travelling waves, asymptotically stable steady state solutions and periodic waves. Meanwhile, we will also present some theoretical results obtained for the problems.

### **Further Information**

Refreshments are served from 1:50 pm until 2:00 pm in Southern Hall 303.