Experimental approaches to collective behavior in groups of organisms

Flocks of birds, schools of fish and swarms of insects provide examples of some of the most beautiful (and, occasionally, frightening) phenomena in nature. For decades, theoretical physicists have hoped that these collective behaviors could be described using the ideas and methods of statistical mechanics. In the past few years, there have been dramatic improvements in the quality and quantity of observations on animal groups, both in the wild and in the laboratory, making it possible for the first time to make more direct connections between theory and experiment. As part of a six week workshop on emergent phenomena in biological systems, ITS is sponsoring a one day symposium highlighting these experimental developments.

Tuesday, 8 February 2011
Science Center (Room 4102)

9:15 AM coffee and bagels/welcome

9:30 AM **Deciphering the interactions that make swarms smart**
Guy Theraulaz, CNRS & Université Paul Sabatier, Toulouse, France

10:45 AM: **Collective motion and decision making in mobile animal groups**
Iain Couzin, Princeton University

12:00 PM lunch

1:15 PM **Obtaining individual-based trajectory data of animal groups in the field**
Ryan Lukeman, St. Francis Xavier University, Antigonish, Nova Scotia

2:30 PM **Signaling, motility and collective behavior in unicellular organisms**
Thomas Gregor & Joshua Shaevitz, Princeton University

4:15 PM coffee

4:30 PM: **From data to theory in collective animal behavior**
Andrea Cavagna, CNR & Sapienza, Università di Roma

Events are free and open to the scientific community, but we ask that you register by sending an email to its@gc.cuny.edu. We particularly encourage participation by students and postdoctoral fellows, and some funds are available to help with travel and lodging. The Graduate Center of the City University of New York is located at 365 Fifth Ave., between 34th and 35th Streets, in Manhattan. For more information about ITS programs, see http://web.gc.cuny.edu/its/. Program supported in part by the Burroughs Wellcome Fund.