



## **Metabolic control and related problems**

Organisms compete in a world of limited resources. One natural set of ideas, then, is that biological systems make optimal use of these resources in accomplishing the tasks essential for life. Versions of this idea have emerged in myriad contexts, from the growth of bacteria to the wiring and dynamics of the mammalian brain. To understand whether evolution has found optimal solutions, however, requires us to understand the space of possible solutions, and the nature of the constraints. In this symposium we'll explore these ideas, at different levels of organization, from bacteria to plants to brains. We hope to promote discussion, especially among groups that have worked on very different aspects of these problems.

**Wednesday, 30 March 2011  
Science Center (Room 4102)**

9:30 AM coffee and bagels/welcome

10:00 AM **The evolution of metabolic networks in microbial systems and ecosystems**  
Daniel Segre, Boston University

11:30 AM coffee

12:00 PM **Exploring the space of metabolic states**  
Andrea DeMartino, CNR & Sapienza, Università di Roma

1:30 PM lunch

2:30 PM **Optimal networks for the distribution of resources: Loops in leaves**  
Marcelo Magnasco, Rockefeller University

4:00 PM coffee

4:30 PM **Metabolic optimization in the dynamics of neurons**  
Andrea Hasenstaub, Salk Institute

Events are free and open to the scientific community, but we ask that you register by sending an email to [its@gc.cuny.edu](mailto: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.