



The efficiency of photosynthesis

Most of the energy for life on earth comes from the sun. Photosynthetic organisms, from micron sized bacteria to hundred meter tall trees, capture this energy directly and convert it into chemical form, providing essential ingredients for metabolism. There are several components, from light harvesting “antenna” systems to the reaction center to a long chain of chemical conversions. The molecules responsible for each step can be found in many different organisms, providing natural experiments in how these components have been tuned by evolution. Recently, the field has been re-energized by the discovery that energy transfer in the antenna complexes is quantum mechanically coherent even at room temperature. In this symposium we’ll explore these and other new results in the larger context of photosynthetic function and efficiency.

Thursday, 7 April 2011
Science Center (Room 4102)

9:30 AM coffee and bagels/welcome

10:00 AM **Origins, evolution and efficiency of photosynthesis**
Robert Blankenship, Washington University

11:30 AM coffee

12:00 PM **Optimality and constraints in the evolution of Rubisco**
Tsvi Tlusty, Weizmann Institute of Science

1:30 PM lunch

2:30 PM **Quantum coherence in natural and biomimetic light harvesting antennae**
Mohan Sarovar, University of California at Berkeley & Sandia Laboratories

4:00 PM coffee

4:30 PM **Probing, simulating and understanding coherence in large molecular systems**
Alan Aspuru-Guzik, Harvard University

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.