



CIPT Spring 2009 Workshop



"Where Nano Meets Bio"

Cornell University
Saturday April 4, 2009

Schedule

8:30 - 9:00	Registration and Continental Breakfast
9:00 - 9:10	Welcome – Dr. Julie Nucci
9:10 -10:25	Lecture – Prof. Sachin Goyal, Theoretical and Applied Mechanics “DNA Mechanics”
10:35 -12:00	Lab Tours <ul style="list-style-type: none">• Single Molecule Biophysics Lab• Carbon nanotube (CNT) fabrication lab• Lab examining the interaction between CNTs and DNA
12:00 – 1:00	Lunch
1:00 – 2:20	Lab Activity
2:30 – 3:50	Lab Activity
4:00 – 4:30	Closing and Evaluation
4:30 – 5:00	Coffee and Conversation (optional)

Lab Activity I - Biocircuits

A model electrical cable consisting of a series of voltage dividers is built and manipulated to find strategies that reduce current loss and voltage decay along the cable. These same strategies are used in nature to solve the very important problem of nerve signal conduction. This cable model is then applied to predict problems associated with Multiple Sclerosis.

Lab Activity II - Diffraction of Light and DNA

The diffraction and interference of light are easily observed phenomena that give direct, tangible evidence of the wave nature of light. Diffraction phenomena are explored by shining a laser at a hair, a variable single slit made from pencils, and wire meshes of various sizes. After this general introduction to diffraction, students will use an ICE DNA Transform slide to develop an understanding of how diffraction studies were key to elucidating the structure of DNA.