



You are invited to a workshop on  
**"Cool and Groovy Physics"**  
Millikan Laboratory, Pomona College  
Saturday, February 24, 2007



### General Information

There will be a continental breakfast available at the beginning of the day. Dr. Monica Plisch will explain the opportunities and resources available to teachers through the CIPT. There will be lectures, activities, tours and a lunch on the Pomona Campus.

Registration Forms are online at  
<http://www.cns.cornell.edu/cipt/workshops.html>

### Schedule

8:30 – 9:00 a.m.	Registration and Continental Breakfast
9:00 – 9:20 a.m.	Dr. Monica Plisch, “Cornell Institute for Physics Teachers”
9:20 – 10:00 a.m.	Prof. David Tanenbaum, “Physics beyond the classroom”
10:15 – 11:30 a.m.	Activity – “Physics on the Electric Guitar”
11:30 – 12:15 p.m.	Lab and Campus Tour
12:15 – 1:15 p.m.	Lunch – <i>Frary Dining Hall</i>
1:30 – 2:00 p.m.	Discussion/Demo of Labs in Development
2:00 – 3:15 p.m.	Activity – “Too Cool to Resist”
3:15 – 3:30 p.m.	Closing and Evaluation

### Hands on Activities

- **“Physics on the Electric Guitar”** – A “pick-up” on an electric guitar uses magnetic induction to detect the motion of strings. In the loudspeaker, this process is reversed. Students are led through a series of explorations on magnetism and electromagnetism designed to build understanding of these phenomena. The lab culminates in an activity where students use a homemade pick-up and speaker along with an inexpensive amplifier to play a mock electric guitar.
- **“Too Cool to Resist”** – Superconductivity is one of the most exciting macroscopic quantum effects in physics, leading to Nobel prizes in both theoretical and experimental physics. Working with liquid nitrogen, we will cool samples down to approximately 77K and see the effect of temperature on the resistance of a “normal” conductor, and the radically different effect on a superconductor. The lab ends with a demonstration of the Meissner Effect, a superconducting classic!

*There is no charge for the workshop (refundable deposit only). Breakfast and lunch will be provided. Five and one-half contact hours will be awarded for participation. Registration deadline is February 16, 2007. Workshop limit is 24 and preference is given to active high school physics teachers. Acceptance letter*