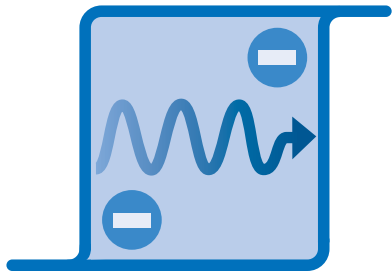
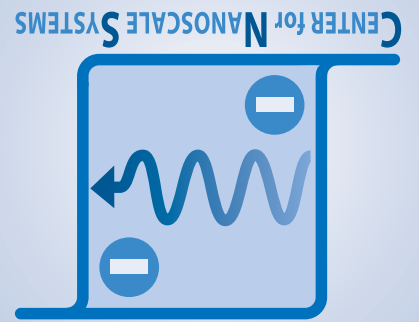


Summer 2007

PHYSICS TEACHERS

CNS INSTITUTE for



CENTER for NANOSCALE SYSTEMS

Cornell University
632 Clark Hall
Ithaca, New York 14853



Cornell University
School of Continuing Education
and Summer Sessions

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CNS INSTITUTE FOR PHYSICS TEACHERS (CIPT)

SUMMER PROGRAM IN CONTEMPORARY PHYSICS
ITHACA, NY

The Institute's Goals

CIPT is designed specifically for high school physics teachers and was created as an educational outreach program of the Cornell Center for Nanoscale Systems, which receives funding from the National Science Foundation and the New York State Office of Science, Technology & Academic Research. The Institute's goals are:

- To update high school teachers on recent advances in physics and related applications.
- To provide participants with take-home laboratory exercises designed to meet the time and budgetary constraints of a typical high school. (These exercises are relevant to many aspects of the NYS Physics Core Curriculum.)
- To develop a continuing relationship between Cornell University and participating high school teachers.



The CNS Institute for Physics Teachers (CIPT) is a unique opportunity for professional development for high school physics teachers. CIPT courses are cosponsored by the Center for Nanoscale Systems, the Cornell University Department of Physics, and the Cornell University School of Continuing Education and Summer Sessions. In the summer of 2007, CIPT will offer both a two-week and a one-week course, each for twenty selected teachers, covering topics in contemporary physics and related applications. Additional teachers with outside funding will be considered for acceptance into the program.



CIPT courses contain lectures, tours and hands-on learning experiences designed to update high school teachers on recent advances in physics.



Diverse topic areas such as nanoscience, particle physics, waves, biophysics, and mechanics will be presented in the context of the NYS Physics Core Curriculum. A major goal of the Institute is to provide teachers with practical teaching tools for their classrooms. Teachers will perform take-home laboratory exercises and lesson plans appropriate for different levels of high school physics classes. In addition, teachers will receive a CD containing all classroom materials and access to the CIPT lending library that will enable them to implement laboratory exercises using equipment that might otherwise be difficult to obtain.



Selection Criteria

Applicants must currently teach at least one period of high school physics per day or give workshops for physics teachers on an on-going basis. Applicants with tenure are preferred.

Course Descriptions

PHYS 501 Contemporary Physics for Teachers (July 8 – 20, 2007)

is a two-credit lecture and laboratory course open to high school physics teachers new to CIPT. Lectures will be given by Dr. Monica Plisch and other Cornell faculty on topics including: atomic-scale imaging, the Standard Model, integrated circuits, x-ray diffraction of biomolecules, and light emitting diodes. Hands-on activities developed by Cornell scientists working with teachers will be presented by teachers. Lab activities include: building a water analogy to electric circuits, observing subatomic particles with a cloud chamber, mapping a hidden “molecule,” and converting electrical energy to light with LEDs. The course follows a theme of science inquiry, and activities are tied to the NYS Physics Core Curriculum where possible.

PHYS 502 Physics and Life

(July 22 – July 27, 2007)

is a one-credit lecture and laboratory course open to CIPT alumni and other high school physics teachers. The course will be organized around daily themes that may include animal communication, physics in music, and everyday technology. Lectures will be given by Dr. Monica Plisch and other Cornell faculty; hands-on activities developed by Cornell scientists working with teachers will be presented by teachers. Lab activities may include: the sixth sense of electric fish, magnetic induction in a guitar amplifier, xerography, and energy conversion in a light bulb. Activities are tied to the NYS Physics Core Curriculum where possible.

Tuition, Stipend, and Housing

Tuition and fees for both courses are paid by CIPT. Participants are housed in one of Cornell’s residence halls and receive a stipend of \$300 per week, parking, all weekday breakfasts, and some lunches and dinners.

Application Procedures

Please complete the entire application form in this brochure or download the application from the web (www.cns.cornell.edu/cipt). You may apply for one or both courses. In addition to your completed application, the following materials must be submitted by **March 1, 2007**:

- A statement of purpose explaining your reasons for interest in the program and ways in which the experience will benefit your students.
- A resume that includes a list of conferences, workshops, and courses attended in the past three years.
- Two letters of recommendation from professional colleagues or school administrators. In addition, you may submit an optional recommendation letter from a student.

All materials must be mailed to:

Linda Clougherty
Center for Nanoscale Systems
Cornell University
632 Clark Hall
Ithaca, NY 14853

Application deadline: **March 1, 2007**

Notification of acceptance: **April 1, 2007**



Further Information

For more information about CIPT, contact:

Linda Clougherty
Telephone: **(607) 255-9434**
E-mail: cipt_contact@cornell.edu
Web: www.cns.cornell.edu/cipt

2007 Application

Course(s) requested (if choosing both, indicate first and second choice)

_____ Contemporary Physics for Teachers (July 8 – 20)

_____ Physics and Life (July 22 – 27)



Applicant Information:

Name: _____ E-mail: _____

Home telephone _____ Work telephone: _____

Home address: _____ City: _____ State: ____ Zip: _____

Number of years you have taught high school physics: _____ Year tenure received, if applicable: _____

Courses taught:	Name of course	Number of sections	Level
2006–2007	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
2005–2006	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Anticipated changes for next year: _____

I have enclosed: application resume (including conferences) statement of purpose recommendations

Applicant's signature _____



School/Institution Information:

High school/institution: _____

Address: _____ City: _____ State: ____ Zip: _____

Locale: Urban Suburban Rural Total enrollment _____ Grades _____

Student demographics: African American ____% Pacific Islander ____% Asian ____%

Native American ____% Latino/Hispanic ____% Caucasian ____%

Percentage of students eligible for free or reduced lunch ____%

Principal's Statement: I, _____, intend to have _____ continue teaching at least one period of physics per day for the next two years and will grant him/her up to two release days for professional activities if accepted to CIPT.

Principal's signature _____

Please mail completed application and supporting documents to:

Linda Clougherty, CNS, Cornell University, 632 Clark Hall, Ithaca, NY 14853 by March 1, 2007.