Accelerator Physics Workshop

**Dates:** July 26th – July 30th, 2010
**Time:** 9:00 – 4:00 (1 hour for lunch)
**Application Deadline:** June 7th, 2010
**Instructors:**
- Dr. Thomas Hemmick, Distinguished Teaching Professor, Co-director of the Center for Accelerator Science
- Mr. Richard R. Lefferts, Director of Operations, Stony Brook University Nuclear Physics Laboratory
- Ms. Taposhi Biswas, MAT Physics Candidate, Stony Brook University

**Place:** Stony Brook University and Brookhaven National Laboratory

**Fee:** $25.00, to be returned on completion of the program.

**In-Service Credits:** 30 hours/2 in-service credits

**Target Audience:** High school physics teachers and their students.

Accelerators are complex and versatile machines, whose applications are generally thought to be restricted to the realm of high-energy physics. However, the vast majority of accelerators are currently being used in the areas of medical physics and industry. Most notably, research has shown that accelerators are capable of providing medical treatments that produce results incomparable to any other modern techniques, and therefore they (and the scientists that operate them) are indispensable resources.

In this one-week workshop, participants will:

- learn about the mechanics of an accelerator
- build a magnetic lens for use with the accelerator
- explore the inner structure of the atomic nucleus
- learn about the mechanics of nuclear decay, accelerator mass spectroscopy
- explore the medical applications of accelerator physics
- design and utilize methods of manipulating and focusing a beam of charged particles
- implement the $^{27}\text{Al} \ (p,n) \ ^{27}\text{Si}$ and $^{11}\text{B} \ (p,n) \ ^{11}\text{C}$ nuclear fusion reactions.

For more information and instructions for registration, visit the CASE site at: [http://www-case.physics.sunysb.edu](http://www-case.physics.sunysb.edu)