Facilities

Besides the Physics Department office and standard classrooms, we also have

- a lounge/library for physics students
- a Physical Science Teaching Laboratory
- a Computer-Based Teaching Laboratory,
- an upper-level Electronics Laboratory,
- an upper-level Optics Laboratory,
- an Atomic & Nuclear Physics Laboratory,
- an upper-level Nanotechnology Laboratory,
- a machine/instrument shop, and several stockrooms.

Equipment

Physics students have access to an increasing array of equipment at Clarion. Our most recent acquisitions were bought with part of a $200,000 DCED grant, awarded in 2005 and matched by the Penn State Nanofab Facility. Thanks to this award, students in our nanotechnology laboratory can now study microfluidics and nanoparticle self-assembly.

At Clarion, we *encourage* our students to use even our *best equipment*! Some of the equipment that we like most includes:

- *Leybold Didactic* X-ray Apparatus (with variable wavelength)
  http://www.leybold-didactic.de/phk/produkte.asp?L=2
  For X-ray transmission absorbance scans, it also has an angle-sensitive detector for determining atomic crystal structure, and can be computer-controlled for measuring surface properties by reflection.

- *Nanosurf* Scanning Tunneling Microscope (with atomic resolution)
  http://www.nanoscience.com/products/easyScanSTM.html
  what could be *cooler* than probing *individual atoms*?!

- *Olympus* inverted microscope (with EPIX PIXCI digital video capture from a Hitachi color CCD camera)
  http://www.olympus-europa.com/medical/22_CKX41.htm
  Our set-up includes a reflected fluorescence system, and has already been integrated into the new nanotechnology course, for watching microfluidics.

- *Nanosurf* Atomic Force Microscope (with nanometer resolution)
  http://www.nanoscience.com/products/AFM

- *Ocean Optics* UV/VIS fiber optic spectrometer (with 2024 channel resolution)
  http://www.oceanoptics.com/products/usb2000.asp

- *Varian* 4" Research Electromagnet (with changeable pole shapes)
  It has a very stable 2 kiloWatt power supply, for Nuclear Magnetic Resonance studies of compounds, for Electron-Spin Resonance studies of molecular bonds, and for measuring magneto-optical properties of materials.

- Spin Coater

- Evaporator

- An Assortment of Lasers/ Laser Table