

## Contemporary Physics Laboratory – Spring 2005

PHYS 493L-001

Tuesday and Thursday 1400-1650 hr

Room P&A 116

Call #12277

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Physics and Astronomy Building Room 122

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Office hours: By appointment

Contemporary Physics Laboratory (Senior Lab) will share resources with the Optics Laboratory in the Department of Physics and Astronomy to expose students to the diverse experimental techniques required of a graduate student or professional scientist.

Experimental skills will be developed with the hands-on experience gained through a series of experiments that each require multiple class sessions. These experiments will involve holography, elementary particle decay, Doppler shifts, interference phenomena and plasma physics. The student will be exposed to a variety of important techniques including interferometry, precision timing and coincidence measurements, particle detection, and sensitive velocity measurements.

An unusual component of the laboratory will be a session devoted to teaching the methodology behind the construction of experimental apparatus. Here the student will be exposed to elementary aspects of machine shop practice after which they will have access to the student shop.

Text (Optional): Building Scientific Apparatus, 3rd edition, by John Moore, Christopher Davis and Michael Coplan (Perseus Books, Cambridge MA, 2003).