

# UNH Materials Science Seminar

11:00-12:00, Thursday, October 27, 2005

DeMeritt Hall 209B

University of New Hampshire

## Techniques for Preparing Large Atomically Flat Au(111) Terraces for Nanotemplate Manufacturing

**Georgi Nanchev**

Department of Physics

University of New Hampshire

A reliable preparation technique for nanotemplates and substrates is essential for the nanomanufacturing process. An atomically flat Au(111) surface forms a well-ordered dislocation network with herringbone-like symmetry. This natural pattern can be used as template for selective adsorption. Moreover, the strong reactivity of Au with sulfur-containing groups makes it a preferred substrate for self-assembled monolayers (SAMs). Three different methods to obtain large Au(111) terraces are presented: (1) on Au(111) single crystal surfaces; (2) on thin Au films grown on mica, both in UHV; and (3) preparation of pre-deposited Au films on glass and mica in air. The results are discussed in terms of the prospects of using these substrates for nanotemplate creation.