

# UNH Materials Science/Chemistry Seminar

11:10-12:00, Thursday, Oct. 21, 2010

Parsons Room NB 104 (L103)

University of New Hampshire

## From Growth to Devices: Developing a Fabrication Path for Molecular Junctions

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Traditional silicon electronics has reached the physical scaling limit and, to continue our rate of forward electronic progress, new approaches are necessary. Nanomaterials and molecules both have significant promise in addressing this problem, and the research journals are filled with discoveries and studies of myriad materials, each with their own interesting, potentially useful properties. Yet, synthesizing the molecule or growing the nanomaterial is only the first step if we are to harness their potential; making the transition from developing materials to integrating them into devices is no small endeavour. Placement, wiring, lifetime, etc. - these are all nontrivial on the nano scale.

This talk will discuss the work done at the Yap Lab in developing the capability to fabricate gold/organothiols/carbon nanotube molecular junctions for the future testing of molecular memory devices. Highlighted in particular are: carbon nanotube placement by dielectrophoresis, the major problems encountered during combining the various processes, and initial results.

**Jason Moscatello** recently received his Ph.D. in Engineering Physics from Michigan Technological University (Aug. 2010). He also earned an MS and a B.S., both in Physics, from The College of William and Mary (2002) and The College of New Jersey (2000), respectively. His research has focused on design, fabrication and testing of carbon nanotube-based molecular electronic junctions.

Host: Prof. Glen Miller, x2456