



**CENTER FOR NANOHYBRID
FUNCTIONAL MATERIALS**

**TUESDAY
APRIL 16, 2013
2:00 – 4:00 PM
UNL - N129 SEC
SCOTT ENGINEERING CENTER**



Dr. Paul Ashby

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Toward imaging membrane protein assembly and dynamics with *in-situ* Atomic force Microscopy

Membrane protein clustering is important for many signaling processes and cellular function. Resolving proteins within clusters with both high temporal and spatial resolution has been challenging for both optical and atomic force microscopy. The challenge for atomic force microscopy has been deformation of the sample due to the minimum force of imaging and mechanical limitations of the scanners to scan quickly. I will present innovations from my group to address both of these issues. I will discuss different AFM control theories and why reducing interaction force is best accomplished through cantilever innovation. Then, I will present my groups efforts with both nanowire cantilevers and encased cantilevers, the latter of which have 10 times higher sensitivity than regular cantilever in solution. Lastly, I will discuss a new scanning mode we developed and how it enables much higher scan speeds.

Seminar hosted by Dr. Yuri L. Lyubchenko, University of Nebraska Medical Center



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