



A Tour of Nanoscience Research at Sandia National Laboratories

**Wednesday April 16, 2008
Burchard 118, 1pm [Note room and time change]**

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Sandia National Laboratories was performing research on nanoscale phenomena long before “nanotechnology” became a buzzword. Today, Sandia and Los Alamos National Laboratories are operating the Center for Integrated Nanotechnologies (CINT)*. These Centers are user facilities that are hosting scientists from diverse institutions across the country (and beyond) to collaboratively attack nanoscience problems. In this talk I will describe the motivation for our current nanoscience effort at CINT and elsewhere at Sandia. I will give examples of some of our recent research, including the invention of tools for nanoscience investigations (e.g., various scanning probe microscopies), research at the nano-bio interface (e.g., using motor proteins to move material across a surface), nanophotonics and nanoelectronics (e.g., low-dimensional semiconductor systems), and nanostructured materials (e.g., controlling the properties of quantum dots). Finally, I will describe some of the ways in which our nanoscience research is having an impact on the missions of Sandia National Laboratories, such as Energy. [*CINT is one of five nanoscience research centers across the US funded by the DOE Office of Basic Energy Sciences.]

Julia M. Phillips is Director of the Physical, Chemical, and Nano Sciences Center at Sandia National Laboratories (since 2001). She concurrently served as the Director of the Center for Integrated Nanotechnologies (CINT) during 2005-07. After 14 years at AT&T Bell Laboratories, she came to Sandia in 1995. Dr. Phillips holds a Ph.D. in applied physics from Yale University and a B.S. in physics from the College of William and Mary. Her research has been in the areas of epitaxial metallic and insulating films on semiconductors, high temperature superconducting, ferroelectric, and magnetic oxide thin films, and novel transparent conducting materials. Dr. Phillips is chair of the APS Division of Condensed Matter Physics and a past president of the Materials Research Society. She received the 2008 George E. Pake Prize for outstanding achievements in physics research combined with major success as a manager of research or development. Dr. Phillips is a member of the National Academy of Engineering and the American Academy of Arts and Sciences, and is a Fellow of the American Physical Society and the American Association for the Advancement of Science. She has served on the editorial boards of Applied Physics Letters, Journal of Applied Physics, Applied Physics Reviews, and Journal of Materials Research and has published over 100 papers. She also holds five patents.

Light refreshments will be served prior to seminar

