

## University of Pittsburgh

### Petersen Institute of NanoScience and Engineering Seminar

- Speaker:** Dr. Eric Snow  
Institute for Nanoscience, Naval Research Laboratory
- Title:** *The Science and Applications of Carbon Nanomaterials*
- Time/Date:** 4:00 pm, Thursday, September 11, 2008  
(refreshments at 4:00 - 4:15pm)
- Place:** Room 12B, Chevron Science Center

In this presentation I will give a brief overview of the Naval Research Laboratory's Institute for Nanoscience followed by a description of one of the research areas supported by the Institute, carbon nanomaterials. These materials, including carbon nanotubes and graphene, are the subject of both basic and applied research. Our results indicate that carbon nanomaterials possess exceptional promise for low-cost, high-performance sensors, large-area electronics, ultra-low-power RF and high-frequency, high-Q electromechanical devices.

#### Biographical Sketch

**Dr. Eric Snow** currently serves as Director of the Institute for Nanoscience and as Head of the Electronic Materials Branch at the Naval Research Laboratory. He received his B.S. in Physics from Wake Forest University in 1981 and his Ph.D. in Physics from the University of North Carolina at Chapel Hill in 1986. Dr. Snow became a National Research Council postdoctoral fellow at the Naval Research Laboratory in 1986 and a member of the full-time research staff at NRL in 1987. He served as Head of the Nanotechnology Section from 1998 to 2006.

Dr. Snow was appointed Head of the Electronic Materials Branch in 2006. The Electronic Materials Branch conducts research on epitaxially grown semiconductors such as GaAs, InAs, GaSb, AlSb, SiC and GaN and on various nanomaterials such as semiconductor quantum dots and nanowires, metallic nanoclusters, carbon nanotubes and graphene. Research on these materials ranges from basic physics in areas such as quantum information and the theory of nanostructures to device development in the areas of sensors, low-power RF electronics, and IR detectors/lasers. The Electronic Materials Branch manages the NRL Epicenter, which consists of several molecular-beam epitaxy and surface analysis systems.

In 2008 Dr. Snow was appointed Director of NRL's Institute for Nanoscience. In this position Dr. Snow coordinates and manages highly innovative, interdisciplinary research programs and

facilities that operate at the intersections of the fields of materials, electronics and biology in the nanometer size domain. The objective of the Institute's programs is to provide the Navy and the DoD with scientific leadership in this complex, emerging area and to identify opportunities for advances in future Defense technology.

Dr. Snow has conducted research in the area of nanoscience for 20 years, contributing to such areas as nanoelectronics, nanolithography, quantum-dot physics and most recently carbon nanostructures. His publications in nanoscience have been cited over 2500 times in the literature, and two of Dr. Snow's patents in nanotechnology received NRL's Thomas Edison Award. Dr. Snow received the 2007 Nano50 Innovator Award for his contributions to nanotechnology. In 2008 he received the Navy Top Scientist and Engineer award.