Woodrow Wilson International Center for Scholars

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U.S. Government Delays Nanotechnology Safety Measures
Expert warns Congress that safety questions put nanotech enterprise at risk

WASHINGTON—Want to buy a bag of carbon nanotubes—in quantities from a few grams to hundreds of kilograms (100 kilograms = approximately 220 pounds)? With a credit card and Internet access, you can. But is the U.S. government doing enough to ensure the safety of these materials and the hundreds of other nanotechnology commercial and consumer products currently on the market?

The answer is a resounding "no," says Project on Emerging Nanotechnologies chief scientist Andrew Maynard. "The materials safety data sheet for carbon nanotubes—which provides workers and safety personnel with information on proper handling procedures—treats these substances as graphite, the material used in pencils. But carbon nanotubes are as similar to pencil lead as the soot on my barbeque grill at home is to diamonds."

According to Maynard, "This is just one example of the yawning knowledge gap between the nanomaterials entering commerce now and their safety. And this uncertainty over how to develop nanotechnologies safely, hamstrings regulators, hinders nanobusiness, and confuses consumers."

Dr. Maynard's remarks are from his testimony today at a hearing held by U.S. Congress's House Science Committee. A copy of his written statement is available online at www.nanotechproject.org.

According to Maynard, filling this knowledge gap will not be easy, but it is essential and must be done quickly if nanotechnology is to succeed. He recommends the following necessary steps:

- Establish a clear, top-down risk research strategy with the resources required to ensure its implementation;
- Create a new federal advisory committee to allow transparent input and review from industry, scientists, labor groups, nongovernmental organizations and other stakeholders;
- Allocate approximately 10 percent of the U.S. government's nanotechnology research and development budget to goal-oriented nanotechnology environment, health, and safety research—a minimum of $50 million annually for research directly tied to oversight and regulatory needs and an estimated $95 million per year for exploratory research that is conducted within the scope of a federal strategic research program; (Previous analysis by Maynard shows that in 2005 the U.S. government spent approximately $11 million on highly relevant risk research.)

- Launch a public-private research partnership program, with cost-sharing between industry and government, to address immediate and critical research questions on effective oversight; and
- Appoint a top-level government leader responsible for the action needed to address the environment, health and safety challenges of nanotechnology.

"There is no doubt that nanotechnology has the potential to make the world a better place and that members of the National Nanotechnology Initiative have great intentions to do the right thing. But given what is at stake here—the quality of our environment, the future vitality of the American economy, and the health of workers and consumers—good intentions are not enough," said Maynard.

About Nanotechnology

Nanotechnology is the ability to measure, see, manipulate and manufacture things usually between 1 and 100 nanometers. A nanometer is one billionth of a meter; a flea is roughly 1 million nanometers wide. More than $50 billion in nanotechnology products were sold worldwide in 2006. By 2014, Lux Research projects that $2.6 trillion in manufactured goods will incorporate nanotechnology—about 15 percent of total global output.

The **Project on Emerging Nanotechnologies** is an initiative launched by the **Woodrow Wilson International Center for Scholars** and **The Pew Charitable Trusts** in 2005. It is dedicated to helping business, government and the public anticipate and manage possible health and environmental implications of nanotechnology. For more information about the project, log on to www.nanotechproject.org.

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