



**Woodrow Wilson
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Contact: Sharon McCarter
Phone: (202) 691-4016
sharon.mccarter@wilsoncenter.org

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Nanotech Safety Needs Specific Govt. Risk Research Strategy and Funding

WASHINGTON—“Prioritizing nanotechnology risk research isn’t rocket science,” said Project on Emerging Nanotechnologies chief scientist Andrew Maynard. Dr. Maynard’s remark is in his testimony today before the federal government’s first public meeting focused exclusively on research needs and priorities for the environmental, health and safety risks of engineered nanoscale materials.

“The specific health and safety questions that are important to be addressed for nanotechnology are reasonably straightforward,” according to Maynard. “And a lot already has been published about what we know and do not know about the potential risks and about how to fill existing research gaps.”

“Far harder is getting the federal government to take action in three critical areas: first, documenting what relevant risk research exists; second, ensuring that agencies responsible for oversight and related research—the Environmental Protection Agency (EPA), Food & Drug Administration (FDA), National Institute of Environmental Health Sciences (NIEHS), National Institute for Occupational Safety & Health (NIOSH), the Consumer Product Safety Commission (CPSC)—are adequately funded; and third, developing a robust, top-down research plan that can be implemented by the U.S. government and used for collaborations with industry and with researchers in other countries,” said Maynard.

During his presentation Maynard mixed a powdered nano calcium and magnesium dietary supplement into a glass of water to help illustrate key risk research questions the federal government needs to tackle: what effect do airborne nanoparticles have on the lungs, do nanoparticles penetrate the skin, what happens to nanoparticles in water, how do they behave in the gastrointestinal tract, and what happens to nanoparticles when they are poured down a drain and enter the waste stream?

Maynard points out that these are “obvious questions” but “ones that should be considered when prioritizing research.” “It is important to remember that risk research has a purpose—to protect people and the environment from harm.” Maynard emphasizes that “While exploratory research has its place, it is not always the best model for providing workable answers to definite questions needed by regulatory agencies.”

“Nanotechnology is no longer a scientific curiosity. It is in the workplace, the environment and the home. But if people are to realize nanotechnology’s benefits—in medicine, communications, and energy production—the federal government needs a master plan for identifying and reducing potential risks. This plan should include a top-down risk research strategy, sufficient funding to do the job, and the mechanisms to ensure that resources are used effectively.”

Maynard proposes that “The federal government invest a minimum of \$100 million over the next two years in targeted risk research in order to lay a strong, science-based foundation for safe nanotechnology.” According to Maynard’s analysis, despite investing more than \$1 billion annually on nanotechnology research, U.S. government spending on highly relevant nanotechnology risk research is only \$11 million per year.

Maynard's presentation, which is available online at www.wilsoncenter.org/nano, draws heavily from his 2006 report, *Nanotechnology: A Research Strategy for Addressing Risk*, and from a recent paper in *Nature*, "Safe handling of nanotechnology" (Maynard et al., vol. 44, 16 November 2006).

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 human hair is roughly 100,000 nanometers wide. More than \$32 billion in products containing nano-materials were sold globally in 2005. But 2014, Lux Research projects that \$2.6 trillion in manufactured goods will incorporate nanotechnology.

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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