



**Woodrow Wilson
International
Center
for Scholars**
News Release

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**Release No. 66-06
December 28, 2006**

Safety Experts Ill-equipped to Handle Nanotechnology in Workplace ***More Research Key to Worker Health***

WASHINGTON—A strategic plan and more resources for risk research are needed now in order to ensure safe nano-workplaces today and in the future. That is the conclusion of Project on Emerging Nanotechnologies Chief Science Advisor Andrew Maynard in a new article, “Nanotechnology and Safety” just released by *Cleanroom Technology* magazine. The article is available in the magazine’s December 2006 / January 2007 issue and is freely available online: <http://www.cleanroom-technology.co.uk>

Last year, nanotechnology was incorporated into \$30 billion in manufactured goods—a number predicted to grow to \$2.6 trillion in annual manufactured goods by 2014. Already, there are almost 400 manufacturer-identified nanotechnology-based consumer products on the market—ranging from computer chips to automobile parts and from clothing to cosmetics and dietary supplements (see: www.nanotechproject.org/consumerproducts). By 2015, the National Science Foundation estimates that the nanotechnology sector will employ more than 2 million workers.

But little is known about potential risks in many areas of nanotechnology—including worker exposures. Funding for risk-focused research is a small fraction of what is being spent on nanotechnology commercial applications.

“Because nanotechnology is a way of doing or making things rather than a discrete technology, there will never be a one-solution-fits-all approach for nanotechnology and nanomaterials workplace safety,” states Maynard. “That is why the federal government needs to invest a minimum of \$100 million over two years in targeted risk research in order to begin to fill in our occupational safety knowledge gaps and to lay a strong, science-based foundation for safe nanotechnology workplaces.”

In the short term, because of incomplete information, Maynard stresses the need to supplement good hygiene practices in the workplace with nano-specific knowledge. Until more research data is available, Maynard proposes developing a “control banding” approach to nanotechnology workplace risk—a course of action that is between inaction and banning all nanomaterials as hazardous. This could involve selecting appropriate control approaches based on a nanomaterial “impact index” centered on composition-based hazard, and perturbations associated with their nanostructure—like particle size, shape, surface area and activity, and bulk-size hazard—and on an “exposure index” representing the amount of material used and its “dustiness.”

Andrew Maynard is an internationally recognized leader in the fields of aerosol characterization and the implications of nanotechnology to human health and the environment. 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.

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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