

# Report urges coordinated and integrated oversight of nanotechnology

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New technology can enhance our quality of life, but how can we ensure the health and environmental safety of its applications? The Center for Science, Technology and Public Policy (CSTPP) at the University of Minnesota Humphrey Institute of Public Affairs has released a new report that addresses this question as it relates to nanotechnology, a rapidly emerging area with hundreds of applications, many already in the marketplace. The report captures recommendations and information developed at a conference held at the Humphrey Institute last fall.

Practitioners, academics and scientists contributed to the report, "The Nanotechnology-Biology Interface: Exploring Models for Oversight," and their conclusions raise issues for government bodies, scientists, the private sector and consumers. According to the report, the applications of nanotechnology require revised risk models and standards of safety. Researchers and others argue that it is increasingly urgent we address the issue of oversight as several new products already are in use by consumers and many more are on the way.

The effects of nanoparticles can be dual in nature leading to several safety concerns that must be considered. For example, some nanoparticles have the rare ability to cross the blood-brain barrier, which can assist the medical field by delivering drugs to the brain; however, those same capabilities can pose greater risk if toxic particles are inhaled. In environmental applications, the penetration capabilities of nanoparticles could lead to unwanted contamination of our resources if not used properly. Because of these and other issues, the report suggests

increased funding for health and environmental safety research on nanoparticles and requests that basic information on the nature and toxicity of nanomaterials be made available to the general public before the products enter the market. Much of this information is now considered confidential.

Unfortunately, amending or developing new laws to regulate the use of nanotechnology is difficult in the short- and even long-term. The report calls for immediate ways to ensure that nanotechnology is used responsibly in the interim. It supports current efforts underway in the public and private sector to implement voluntary programs and industry standards. "These voluntary programs can provide the necessary bridge for ensuring health and environmental safety, but they should not be considered a permanent fix, as they will not ultimately foster public confidence," said Jennifer Kuzma, CSTPP associate director and editor of the report. "With the growing number of nanotech products on the market, it will be even more difficult for government and industry to keep up if they don't start thinking now about nanotechnology oversight in a coordinated and comprehensive way."

The report also calls for more conversation about nanotechnology that is not confined to science and safety. Many experts believe nanotechnology could someday be used to improve human senses, memory, strength and appearance; delay or stop aging; and even control emotion and personality traits. Are these ethical applications? Would some applications be illegal in selected parts of the world?

"Novel applications such as those improving our cognitive abilities will present society with fundamental social, cultural and ethical issues that we only have begun to discuss," said Kuzma. "We need more dialogue on the many issues surrounding the nanotechnology-biology interface."

The report outlines other important issues in technology oversight. How

will new applications affect the structure of industry? Will the technology be deployed equitably? What are the rights of consumers to be informed and make choices about nanotechnology? What are appropriate limits of nanotechnology? The report concludes that we need better institutions for discussing societal issues surrounding the nanotechnology-biology interface.

For more information and to read the complete report, visit CSTPP online at [www.hhh.umn.edu/centers/stpp/](http://www.hhh.umn.edu/centers/stpp/)

Source: University of Minnesota

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