Nano World: More funds on nano risk needed

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Investigations of the environmental and health implications of nanotechnology are so important that industry and environmentalist groups, normally thought of as opposed toward each other, both told Congress they would support redirecting existing nanotechnology research funds toward such work.

"If nanotechnology is to fulfill its enormous economic potential, then we have to invest more right now in understanding what problems the technology might cause," said Rep. Sherwood Boehlert, R-N.Y., chairman of the House Science Committee in a Thursday hearing. "This is the time to act, before we cause problems. This is the time to act, when there is a consensus among government, industry and environmentalists."

Nanotechnology is anticipated to benefit medicine, electronics and "every facet of our lives," noted Rep. Vernon Ehlers, R-Mich., but the very properties that make nanomaterials so promising in applications, such as their unusual properties when compared to bulkier counterparts, "make them potentially troubling when they come in contact with people and the environment." For instance, their small size could allow them to unintentionally slip into the bloodstream and into the brain or other organs, said Richard Denison, senior scientist for environmentalist group Environmental Defense in Washington, D.C.

According to Clayton Teague, director of the National Nanotechnology Coordination Office, the federal government will invest nearly $39

million in the next fiscal year on research and development focused on understanding any potential health and environmental risks "posed by exposure to nanomaterials and nanoproducts."

But environmentalist and industry groups agree that $39 million is not enough. Denison noted that DuPont Chairman and Chief Executive Officer Chad Holliday and Environmental Defense president Fred Krupp called for $100 million in such funding in a Wall Street Journal op-ed in June.

"Organizations as diverse as environmental NGOs, large chemical companies, nanotech startups, insurance companies and investment firms all agree that the federal government should be immediately directing many more of the dollars it is currently investing in nanotechnology development toward identifying and assessing the potential risks of nanomaterials to human health and the environment," Denison said.

Matthew Nordan, senior analyst at nanotechnology analyst firm Lux Research in New York, proposed the creation of an international nanoparticle toxicology authority to help coordinate today's splintered efforts. He also recommended the U.S. government establish a $100 million to $200 million national nanotechnology toxicology initiative. Such research should be publicly funded to avoid skepticism of environmental and health research conducted by the companies that are manufacturing nanomaterials, said Krishna Doraiswamy, research planning manager at DuPont Central Research and Development.

"While this level of risk research spending will represent a significant increase over current levels, it is still less than 10 percent of the overall federal budget for nanotechnology development," Denison said. "It is a modest investment compared to the benefits of risk avoidance and to the $1 trillion contribution that nanotechnology is projected to make to the world economy by 2015."

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