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Nanotech: To Know It Is Not Necessarily To Love It

Research shows cultural biases most impact opinion on nanotech

Washington, DC – Public opinion surveys report that the small fraction of people who know about nanotechnology have a favorable view of it. This finding has led many to assume that the public at large will respond favorably to nanotechnology applications as popular awareness grows, education expands and commercialization increases.

But the results of an experiment, conducted by the Cultural Cognition Project at Yale Law School in collaboration with the Project on Emerging Nanotechnologies (PEN) and published Dec. 7 on the *Nature Nanotechnology* Web site, do not support this “familiarity hypothesis.”

The experiment found that how people react to information about nanotechnology depends on cultural predispositions. Exposed to balanced information, people with pro-commerce values tend to see the benefits of nanotechnology as outweighing any risks. However, people with egalitarian or communitarian values who are predisposed to blame commerce and industry for social inequities and environmental harm tend to see nanotechnology risks as outweighing benefits.

The study also found that people who have pro-commerce cultural values are more likely to know about nanotechnology than others. “Not surprisingly, people who are enthused by technology and believe it can be safe and beneficial tend to learn about new technologies before other people do,” said Dan Kahan, Professor at Yale Law School and lead author of the *Nature Nanotechnology* article. “So while various opinion polls suggest that familiarity with nanotechnology leads people to believe it is safe, they have been confusing cause with effect.”

The findings of the experiment highlight the need for any nanotechnology information and risk communication strategy to focus on message framing and to take an informed, multi-audience approach, according to PEN experts.

“The message matters. How information about nanotechnology is presented to the vast majority of the public who still know little about it can either make or break this technology,” says David Rejeski, the director of PEN. “Scientists, the government and industry generally take a simplistic, ‘just the facts’ approach to communicating with the public about a new technology. But this research shows that diverse audiences and groups react to the same information very differently.”

Because perfecting the science of nanotechnology risk communication is essential to society’s realization of the full benefits of nanotechnology itself, PEN experts believe that every major funding initiative directed at the development of nanotechnology and the study of nanotechnology risks should include a risk-communication component.

“Without investment in understanding how to explain the potential risks, as well as the potential benefits, to the public, significant innovation could be stifled,” Rejeski adds.

The study was conducted as part of a series of public opinion analyses being conducted jointly by the Cultural Cognition Project and the Project on Emerging Nanotechnologies. Previous experiments, which also examined the influence of emotion and the identity of information providers on public attitudes, can be found at www.nanotechproject.org/yale.

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. In 2007, the global market for goods incorporating nanotechnology totaled \$147 billion. Lux Research projects that figure will grow to \$3.1 trillion by 2015.

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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