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Society for Risk Analysis

## **Study of South Carolina Panel Reveals Few Concerns with Nanotechnology**

*The rapid emergence and adoption of nanotechnology has provided an opportunity to examine the formation of public opinion on the risks and benefits of a largely unregulated, new and unique technology.*

Washington D.C. – An opinion study about the perceived risks associated with nanotechnology conducted with a diverse panel of South Carolinians to explore public reaction to, and understanding of, nanotechnology shows relatively low levels of concern about the exceedingly miniature materials. More than 67 percent of the panel expressed positive views of nanotechnology and said it would be likely to improve their lives, particularly in the medical arena. The survey touched on perceived risks and benefits, terms of familiarity, information exposure, trust in various information sources and the scientific community, current applications and demographics.

The study, entitled “Envisioning Emerging Nanotechnologies: A Three-Year Panel Study of South Carolina Citizens,” was led by Susanna Priest of George Mason University in collaboration with Thomas Lane, Ted Greenhalgh, and Lindsey Jo Hand from the University of Nevada Las Vegas and Victoria Kramer of the University of South Carolina. The research was funded by the National Science Foundation and the paper appears in the November issue of the journal *Risk Analysis*, published by the Society for Risk Analysis. The article is part of a special issue of the journal entitled “Nanotechnology Risk Perceptions and Communication.” South Carolina was chosen because of a nanotechnology research center there with which Priest had been affiliated.

The researchers recruited and surveyed a panel of 76 adults over the course of 32 months, including community opinion leaders, environmental stakeholders, members of various church groups, and other citizens to elicit a diverse range of perspectives. In addition to completing multiple surveys over time, the panelists took part in structured interviews with open-ended questions on nanotechnology. The trends of responses through time “reveal only modest changes in perspective from the beginning to the end of the study period,” according to the article. About 37 percent said the main risks were “unexpected consequences and harmful side effects,” 13 percent said it was weaponization and 9 percent thought medical and environmental contamination were the main risks. Other risks such as privacy, expense and product failure concerns registered at or below 5 percent. “When we started the project, many people who study

risk perception were anticipating that more public concern would emerge over time. That has not happened so far,” according to Priest.

Most participants expressed familiarity with the term nanotechnology; however, few were familiar with associated products. Though many demonstrated some degree of skepticism, most interviewees expressed approval for the use of nanotechnology consistent with what the authors identify as a strong pro-technology thread in American culture. According to Priest, “I was pleased to find that their thinking on this issue seems largely rational, boding well for public engagement efforts,” especially in comparison with biotechnology which has triggered broader and more intense public concerns.

When asked about potential ethical violations, corruption became a recurring theme in the responses. About one-half of the respondents believed the biggest nanotechnology gains would become evident in medical industries. In terms of regulation, respondents were divided on whether nanotechnology should be subjected to government versus market regulation, or both. About 50 percent said government regulation is necessary to address safety concerns. Priest says, “Nanotechnologies do have risks that society needs to find ways to manage and communicate which will be quite challenging because of the uncertainties” concerning the potential health and environmental hazards.

Although qualitative by design, this study contains important implications for public engagement on health and environmental concerns related to new technology. Priest encourages companies and government agencies to create forums for dialogue on the subject. Future studies are necessary to determine whether the observed opinion formation trends compare between opinion leader and ordinary citizen groups, how increasing regulation potentially may relate to risk perceptions, and the characteristics of technologies that are, or are not, welcomed by Americans.

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Note to editors: The complete study is available upon request from Steve Gibb or here: <http://onlinelibrary.wiley.com/doi/10.1111/j.1539-6924.2011.01705.x/full>