U.S. faces widening information gap on nanotechnology

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(PhysOrg.com) -- As the global nanotechnology industry continues to produce cutting-edge consumer products, the scientific community is leaving a key part of the U.S. public behind when sharing knowledge of this new field of science, according to a new study by the University of Wisconsin-Madison and Arizona State University.

Nanotechnology involves controlling matter of an atomic and molecular size to develop devices of an incredibly small scale, usually 100 nanometers or smaller — tiny enough to fit through a surgical mask. The technology has expanded to offer more than a thousand consumer products from more than 24 countries, including the U.S., China, Canada and Germany. Nanoscale materials now are in common electronics such as iPods, as well as cosmetics, automotive and medical products.

As reported in the January issue of *The Scientist*, researchers found widening gaps in nanotech knowledge since 2004 between the least-educated and most-educated citizens. Americans with at least a college degree have shown an increase in understanding of the new technology, while knowledge about nanotechnology has declined over time for those with education levels of less than a high school diploma, according to the study.

"Unfortunately, people with little or no formal education — those who need outreach the most — aren't getting as much information about this issue, which will likely become even harder to understand over time,"

says Elizabeth Corley, Lincoln Professor of Public Policy, Ethics and Emerging Technologies in Arizona State University's School of Public Affairs and co-author of the study.

Well-educated people who are already "information-rich" are learning about nanotechnology from traditional outreach efforts such as museums, Corley says.

Closing these informational gaps among public audiences "is a necessity, especially in light of a projected 2009 U.S. budget that has reduced spending for 'educational and social dimensions' of nanotechnology to $33.5 million from $39.2 million in 2007," the article states.

"There is a real urgency to find ways of communicating effectively with all groups in society," says Dietram Scheufele, John E. Ross Professor in the College of Agricultural and Life Sciences at UW-Madison and co-author of the study. "Unless we find ways to close these learning gaps, we will create two classes of citizens: those who are able to make informed consumer and policy choices about these new technologies, and those who simply can't."

But there is a silver lining. The study also found that the Internet is one of the most effective methods in closing gaps and informing the less educated about nanotechnology.

"Online and social media are some of the most promising tools for making sure we reach all members of the public with information about science and technology," says Scheufele, "and tools like Digg, Twitter, or Facebook will only become more important down the road."

Corley and Scheufele analyzed data from national surveys conducted during the last five years. The study was funded by the Center for Nanotechnology in Society at ASU.

Provided by University of Wisconsin-Madison