

Nanotech leaders gather to debate nanotech pros, cons

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Nanotechnology, defined as science and engineering done at the scale of a billionth of a meter, promises to have a profound impact on society. It has been heralded by many scientists, futurists and investors as the next industrial revolution.

But for every optimistic forecast of nanobots to perform microsurgery, or in-body sensors to monitor human health, there are doomsday scenarios, too: nanochips implanted in the brain that forever alter human identity, or nanosensors publicly revealing all private places and information.

Given this information, two questions loom largest of all:

- How can scientists, citizens and policy makers be adequately engaged in a dialogue about nanotechnology's potential for good – and its potential for abuse?
- How can we govern nanotechnology?

Nanotechnology leaders from across the nation will gather on ASU's Tempe campus Jan. 30 as the university launches its Center for Nanotechnology in Society. The culmination of the launch event will be a public forum, titled “Nanotechnology in Society,” from 4 – 7 p.m. in the Great Hall (Armstrong Hall) of the College of Law.

A distinguished panel of scientists, policy experts and ethicists will

convene for this important discussion. The panel includes remarks from ASU President Michael Crow; David Guston, director of the Center for Nanotechnology in Society; George Poste, director of the Biodesign Institute; and Jonathan Moreno, University of Virginia Professor of Biomedical Ethics and co-chair of the National Academies' committee on human embryonic stem cell research.

Guston calls the event “the beginning of an unprecedented effort to expand our knowledge of how emerging technologies like nanotechnology interact with society; to train students to understand those interactions; and to involve the general public in helping to make decisions, along with scientists and engineers and policy makers, about what nanotechnology's future will be like.”

Last fall, the National Science Foundation awarded ASU \$6.2 million to establish the Center for Nanotechnology in Society (CNS-ASU). The center is a collaboration of the Consortium for Science, Policy and Outcomes and the Biodesign Institute at ASU.

CNS-ASU is the largest in a network of \$14.3 million in newly funded NSF activities on nanotechnology and society, which includes a second \$5 million center at the University of California-Santa Barbara, and additional projects at Harvard University and the University of South Carolina.

The ASU Center will be a “center of excellence” for the National Nanotechnology Initiative (NNI), a federal research and development program established to coordinate the multiple-agency efforts in nanoscale science, engineering and technology.

According to the NNI, federally supported nanotechnology research and development in 2005 was \$1 billion, and the global marketplace for goods and services using nanotechnologies will grow to \$1 trillion by

2015.

Nanoscientists and engineers are still working out the rules and techniques for imaging, manipulating and manufacturing matter at this minute atomic scale (10,000 times smaller than the width of a human hair). And social scientists and humanists are just starting to understand how such inquiries and technologies interact with the broader society.

The launch event will gather a broad network of CNS-ASU researchers and collaborators, including researchers from the University of Wisconsin-Madison; Georgia Institute of Technology, Atlanta; North Carolina State University, Raleigh; University of Colorado, Boulder; Rutgers University, New Brunswick, N.J.; and other universities and private and public sector groups.

CNS-ASU focuses on two broad research themes:

- Freedom, privacy and security.
- Human identity, enhancement and biology.

CNS-ASU also will experiment with a novel approach of teaming social scientists and nanoscientists to consider the ethical and social dimensions of nanotechnology. The center also incorporates regular meetings with – and feedback from – citizens, policy makers and business leaders on their perspectives on nanotechnology.

“The center will help researchers and citizens develop a better understanding of where scientific and social values come from, what they mean and how they shape the direction that nanotechnology takes,” Guston says.

By understanding the interactions between nanotechnology and society,

the center aims to encourage informed discussions, as well as improve policy choices and technological outcomes for the benefit of society.

The forum is free and open to the public. For more information, visit cns.asu.edu

Source: ASU

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