

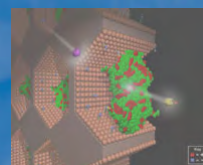
US EPA ARCHIVE DOCUMENT

Nanotechnology and EPA: Goals, Initiatives, & Outreach

Nanotechnology and OSWER: New Opportunities and Challenges

Nora Savage, PhD

US EPA,
Office of Research & Development
National Center for Environmental Research
Environmental Engineering Research Division



Why is EPA interested in nanotechnology?

- **Potential for Environmental Improvement**
 - Cleaning up past environmental pollution
 - Improving present processes and systems
 - Preventing future environmental problems
- **Possibility for harmful effects on human health/environment**
 - Toxicity
 - Fate, Transport, transformation
 - Bioaccumulation, biotransformation, bioavailability
- **EPA's regulatory responsibilities Toxicity**
 - Toxic Substance Control Act
 - Clean Air Act
 - Clean Water Act
 - Comprehensive Environmental Response, Compensation and Liability Act/Superfund



RESEARCH & DEVELOPMENT

Building a scientific foundation for sound environmental decisions

Dr. Nora Savage
2 of 11

National Nanotechnology Initiative

EPA is a member of the subcommittee - Nanoscale Science, Engineering and Technology

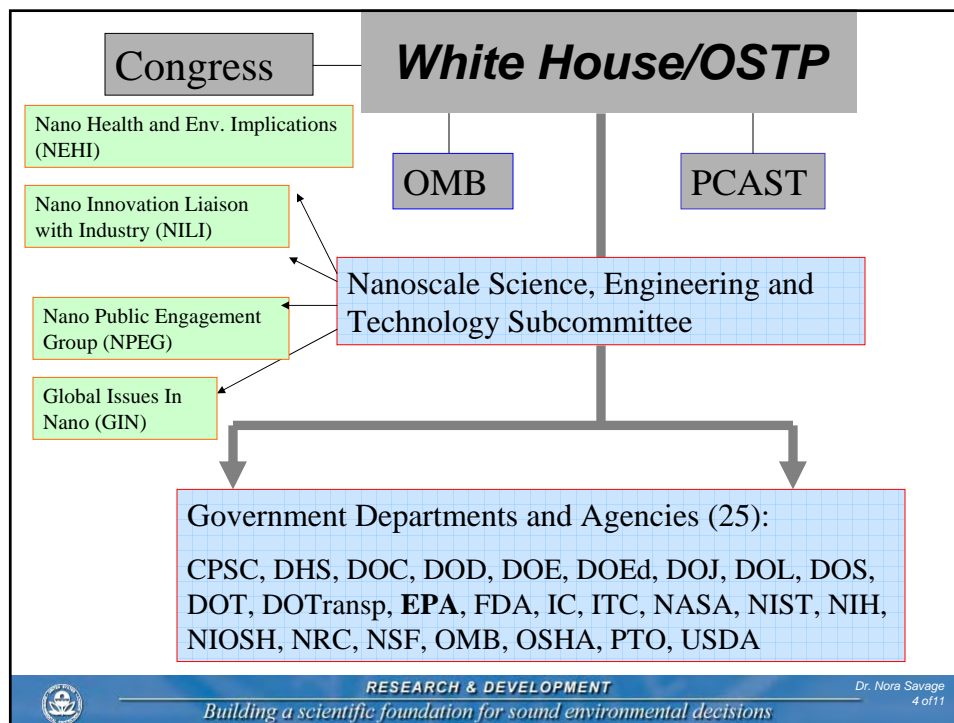
- Federal agencies and departments that participate in NNI
- Established in 2001
- Responsible for coordinating federal government's nanoscale research and development programs
- National Nanotechnology Coordinating Office (NNCO) – secretariat, point of contact



RESEARCH & DEVELOPMENT

Dr. Nora Savage
3 of 11

Building a scientific foundation for sound environmental decisions



RESEARCH & DEVELOPMENT

Dr. Nora Savage
4 of 11

Building a scientific foundation for sound environmental decisions

SPC White Paper

- Science Policy Council (SPC): venue for discussion and management of cross-agency science issues
- **Cross-agency Nanotechnology Workgroup** convened by SPC Dec. 2004
- Group charge: develop a white paper to examine the implications and applications of nanotechnology for the consideration of Agency managers
- Will serve as EPA's science and technology guide for nanotechnology
- You may obtain the draft white paper from www.regulations.gov or www.epa.gov/osa
- Anticipate **Final Document 2006**



RESEARCH & DEVELOPMENT

Building a scientific foundation for sound environmental decisions

Dr. Nora Savage
5 of 11

FY07: \$8.6 million for Nano R&D

- Help advance nanotechnology's potential to create new and enhanced products in an environmentally sound manner, the President's Budget will strengthen EPA's ongoing efforts to:
 - (1) understand the potential human health and ecological impacts of manufactured nanomaterials, and
 - (2) investigate how nanotechnology can be used in environmental applications such as improved monitoring, pollution control, and site remediation
- FY 2007, a new in-house program will be integrated with ORD's existing STAR and SBIR extramural programs and coordinated with other federal environmental, health, and safety research conducted under the NNI, as well as with international organizations such as the OECD
- Developing an EPA nanotechnology research strategy



RESEARCH & DEVELOPMENT

Building a scientific foundation for sound environmental decisions

Dr. Nora Savage
6 of 11

EPA Nanotechnology STAR Grants

- 2001 **Environmental Applications of Nanotechnology**
 - 16 awards, \$5.6 million
- 2002 **Environmental Applications of Nanotechnology**
 - 16 awards, \$5 million\
- 2003 **Health and Environmental Effects of Manufactured Nanomaterials**
 - 12 awards, \$4 million
- 2004 **Environmental Applications of Nanomaterials**
 - 7 awards, \$2 million
- 2005 **Health and environmental effects of Nanoparticles**
 - 19 awards, \$7 million (joint with NSF, NIOSH)
- 2005/6 **Health and Environmental effects of Nanomaterials**
 - \$7 million, (joint with NSF, NIOSH, NIEHS)
 - 156 received, 46 passed peer review



RESEARCH & DEVELOPMENT

Dr. Nora Savage
7 of 11

Building a scientific foundation for sound environmental decisions

NanoMeeters Notes Database

NanoTechnology

- by Category
- Nanotechnology URLs
- My Favorites
- Administration
 - New Entry
 - Entry Helper

Edit Document

	Description
★	▶ 01.New Postings
★	▶ 02.NanoMeeters
★	▶ 03.Basic Nano Information (Including FAQs and Press Info)
★	▶ 04.News Articles
★	▶ 05.Policy/White Papers/Essays
★	▶ 06.EPA Office/Regions
★	▶ 07.National Nanotech Initiative (NNI)
★	▶ 08.EPA Research Grants
★	▶ 09.Applications (Benefits)
★	▶ 10.Implications (Potential Effects)
★	▶ 11.Presentations
★	▶ 12.Websites
★	▶ 13.Interest Groups
★	▶ 14.European Reports
★	▶ 15.Miscellaneous
★	▶ 16.Past Events



RESEARCH & DEVELOPMENT

Dr. Nora Savage
8 of 11

Building a scientific foundation for sound environmental decisions

Nanotechnology: ORD

- STAR grants ~ \$25 million, 65 grants
- SBIR contracts ~ \$4 million, Phase I and Phase II
- Co-Chair (with OPPTS) Agency White Paper workgroup
- \$8.6 research budget request for 07
- ORD Research Strategy
- Cooperation with OPPT on: new chemical reviews, consideration of data elements for stewardship program, nanotech P2/DfE issues
- Participation in OECD nano Work Group
- Outreach to EPA Regions and Offices
- Outreach to national and international professional organizations



RESEARCH & DEVELOPMENT

Dr. Nora Savage
9 of 11

Building a scientific foundation for sound environmental decisions

ORD Nanotechnology Activities

BUILDING A GREEN NANOTECH WORLD

Solicitations

Annual RFA since 2001

Annual SBIR since 2001



Meetings, Symposia, Workgroups

EPA Grantees' Workshops

ACS, AIChE, A&WMA, IEEE,
ISEE/ISEA, MRS, SETAC, SOT,

ANSI, ASTM, European Commission, ICON,
ILSI, NAS, Woodrow Wilson Center,
NAS, International organizations

Interagency: Applications and
Implications Conference w/ DOC,
DOD, DOE, DOT, FDA, NIH,
NSF, & USDA - September 2003

Societal Implications II - Dec 2003

NNI Nanotechnology Grand Challenge
in the Environment - May 2003



RESEARCH & DEVELOPMENT

Dr. Nora Savage
10 of 11

Building a scientific foundation for sound environmental decisions

Get Involved!

- Attend EPA NanoMeeters workgroup meetings
- Participate in writing RFA's
- Serve on relevancy reviews for nanotech grants
- Attend seminars and workshops on nanotech
- Present papers/chair sessions at professional meetings
- Think proactively regarding regulatory aspects of nanotech
- Assist in developing EPA-wide nano web page
- Use NanoMeeters database to keep current and communicate information to your colleagues



RESEARCH & DEVELOPMENT

Building a scientific foundation for sound environmental decisions

Dr. Nora Savage
11 of 11