

The National Nanotechnology Initiative: Addressing Environmental, Health & Safety Aspects of Nanomaterials



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Research to Practice*

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Take away messages

- NNI prioritizes and invests in EHS research
- NNI is strengthening coordination of nano-related EHS research
- Existing regulations apply to nano-based products and processes
- International collaboration and cooperation in research, standards development, etc. is getting underway

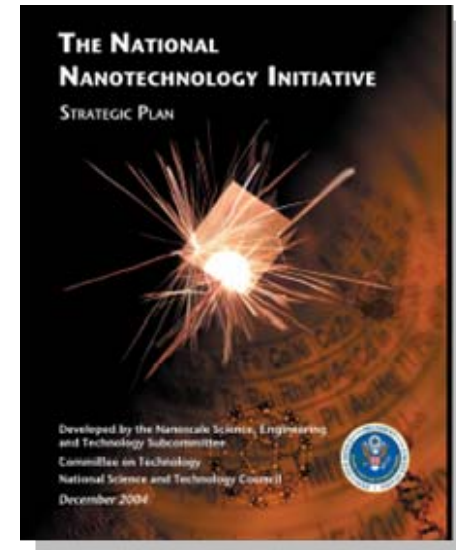


“To ensure that nanoscience research leads to the ***responsible development*** of beneficial applications, high priority should be given to research on societal implications, ***human health, and environmental issues*** related to nanotechnology and agencies should develop, where applicable, cross-agency approaches to the funding and execution of this research.”



NNI Strategic Plan: Goals

- ***Sustain world class R&D***
- ***Facilitate technology transfer***
- ***Develop infrastructure***
 - *education*
 - *workforce preparation*
 - *facilities & instrumentation*
- ***Support responsible development of nanotechnology***



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NNI EHS R&D (2005-2007)

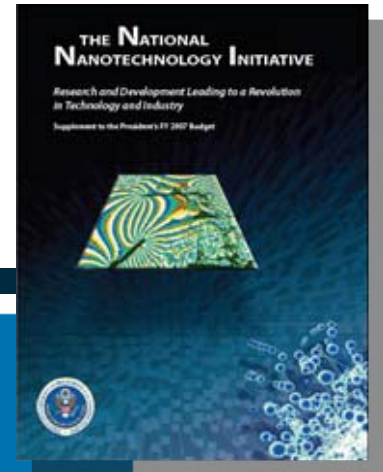


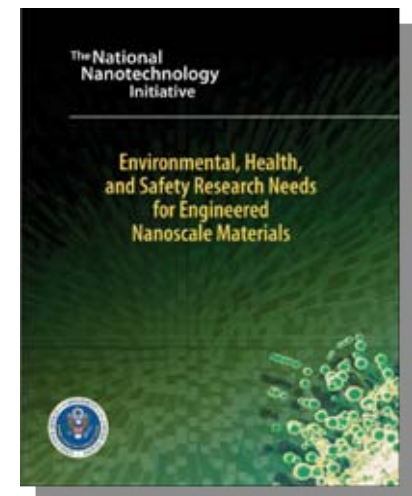
Table 5
Budget for Environmental, Health, and Safety R&D, 2005-2007
 (dollars in millions)

	2005 Actual	2006 Estimate	2007 Request
NSF	20.9	22.1	25.7
DOD	1.0	1.0	1.0
DOE	0.5	0.5	0.0
DHHS (NIH)	2.7	4.5	4.6
DOC (NIST)	0.0	2.4	1.8
NASA	0.0	0.0	0.0
EPA	6.7	3.9	8.0
USDA (CSREES)	0.1	0.1	0.1
DHHS (NIOSH)	3.0	3.0	3.0
USDA (FS)	0.0	0.0	0.0
DHS	0.0	0.0	0.0
DOJ	0.0	0.0	0.0
DOT (FHWA)	0.0	0.0	0.0
TOTAL	34.8	37.5	44.1



Environmental, Health, and Safety Research Needs for Engineered Nanoscale Materials

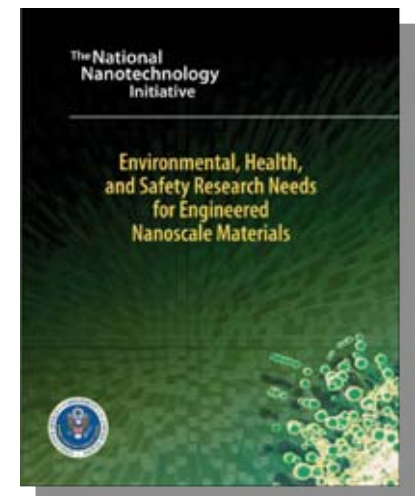
- Produced by the interagency Nanotechnology Environmental and Health Implications (NEHI) Working Group
- Based on inputs from agencies, industry, and other expert bodies
- Primarily, for use by agencies in planning research programs
- Identifies research & information needs for risk assessment and risk management of nanomaterials





Environmental, Health, and Safety Research Needs for Engineered Nanoscale Materials

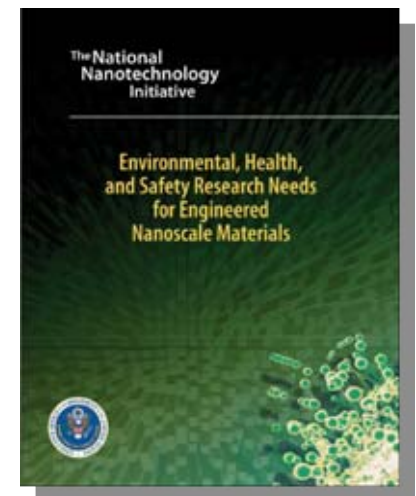
- Instrumentation, metrology, and analytical methods
- Nanomaterials and human health
- Nanomaterials and the environment
- Health and environmental surveillance
- Risk management methods





Next Steps for Addressing EHS Research Needs

- Further prioritize research needs
- Evaluate current NNI EHS research portfolio
- Perform gap analysis
- Coordinate and facilitate among the NNI agencies to address priorities
- Establish a process for periodic review





Other EHS Research(-related) Entities

- Industry
- Non-profit organizations
- Other countries
- International organizations
 - OECD
 - Standards developers (ISO, ASTM et al.)
 - APEC



Where are we today?

- Growing body of knowledge, building on understanding of ultra-fine particles
- Regulatory agencies are assessing the implementation of their authorities
- Manufacturers are taking steps to avoid worker exposure
- Multi-stakeholder efforts are addressing needs



Summary

- NNI EHS-related research activity and coordination is growing
- Existing regulations apply to nano-based products and processes
- International collaboration and cooperation in research, standards development, etc. is getting underway
- Good practices for (net) risk assessment, risk management, and risk communication should be used



THE WHITE HOUSE
WASHINGTON

THANK YOU