NNI Response to the 2010 PCAST Recommendations on the National Nanotechnology Initiative

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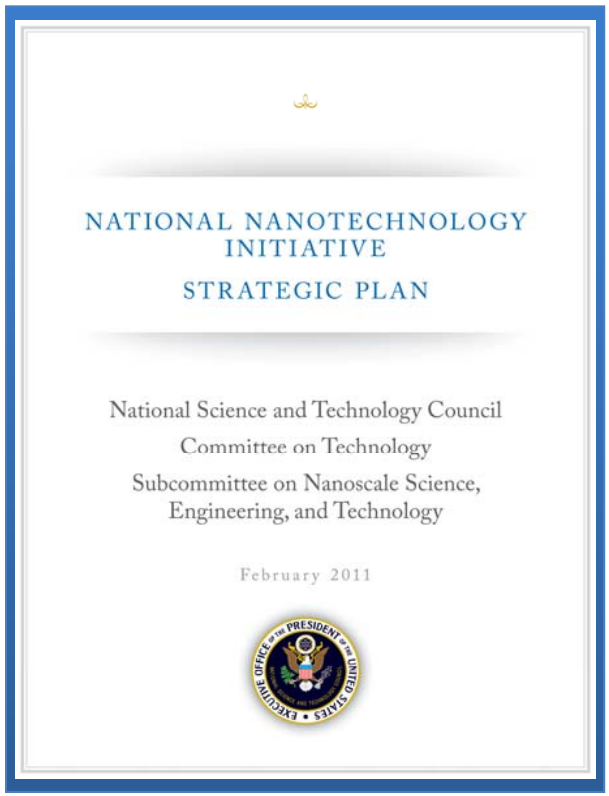
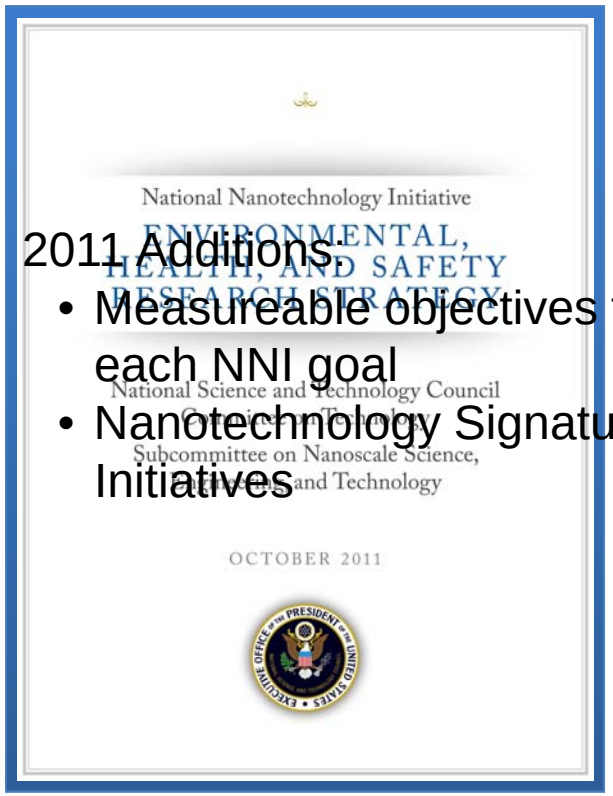
National Nanotechnology Initiative: The First Decade

- Cumulative NNI investment of approximately ***$14 billion*** through Fiscal Year 2011
- Advanced foundational knowledge for control of matter at the nanoscale with over ***7800 research projects in all 50 states***
- Developed an ***extensive infrastructure*** of interdisciplinary research centers, networks and user facilities distributed across the country
- Invested significantly in nanotechnology-related ***EHS research*** to date and anticipate continuing targeted increases
- Established major ***networks for developing public awareness*** of nanotechnology through informal and formal educational programs

Developing the Strategic Vision for the Second Decade





2011 Additions:

- Measureable objectives for each NNI goal
- Nanotechnology Signature Initiatives

NNI Goal 2: Foster Technology Transfer

PCAST Recommendation: Nanomanufacturing and Commercialization

- Increase focus on nanotechnology-based commercialization and related support for ***public-private partnerships***

Multiple models of public-private partnerships: USDA Forest Service, NIH/NCI Alliance for Nanotechnology in Cancer, and NIST

PCAST Recommendation: Moving Nanotechnology to the Marketplace

- Support user facilities, research centers, and regional initiatives to ***accelerate*** the transfer of nanoscale science from ***discovery to commercial products***

DOE: programs to overcome technological barriers, includes industrial partners

NIST: (planned) Advanced Manufacturing Technology Consortia to collapse the time scale to deliver new products and services

NIH: National Center for Advancing Translational Sciences to accelerate translation of promising technologies and clinical studies

NNI Agencies

NNI Goal 3: Educational Resources, Skilled Workforce, Infrastructure

PCAST Recommendation: Job Creation

- Initiate, develop, support, and sustain programs for educating, training, and maintaining a ***skilled nanotechnology workforce***

NSET/Nanomanufacturing, Industry Liaison, and Innovation (NILI) Working Group is developing an agenda that includes job creation and outreach to the states.

NIOSH published guidance for worker protection and recommended exposure limits.

Two dozen associate's degree programs and 70 higher education programs have been developed, with new programs launching every semester.

- Developing and disseminating informational materials documenting ***funding opportunities and user facilities*** that are available to industry.

Activities include Regional, State, and Local Initiatives in Nanotechnology workshops '09 and '12 (planned), NNCO Industry and State Liaison (ISL) position, Symposium on Assessing the Economic Impact of Nanotechnology.

NNI Agencies

New Process for Research Collaboration: NNI Signature Initiatives

PCAST Recommendation: Signature Initiatives

- Address R&D gaps by *aligning existing NNI agency research programs* in a topic area that addresses a critical national challenge
- *Leverage skills, resources, and capabilities* among multiple NNI agencies to *maximize scientific and technological progress* that may prepare a field for industrial commercialization
- Identify research *thrust areas and key targets* and *evaluate at least annually*

Three existing NSIs (nanomanufacturing, nanoelectronics, solar energy) and new topic areas are being identified.

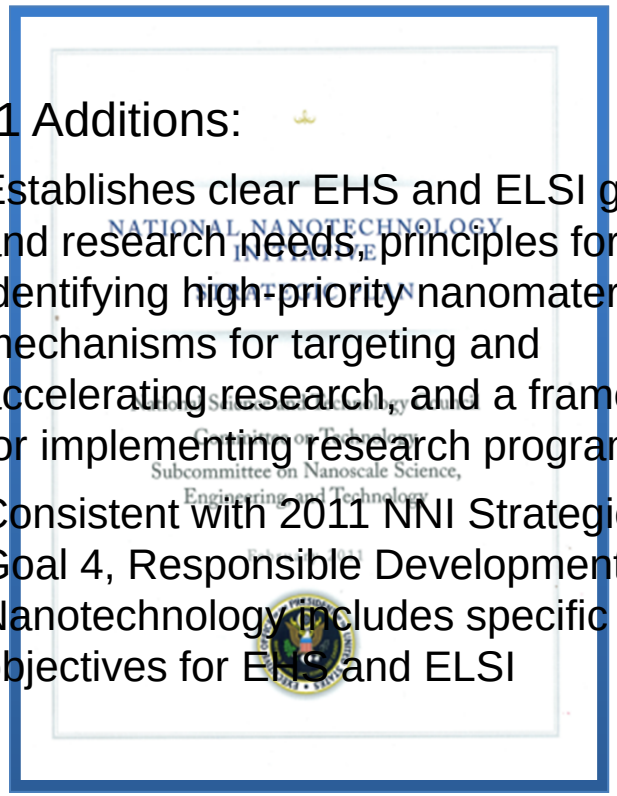
Currently developing coordination plans for three existing initiatives and exploring potential to expand the EHS collaboration with EU to include NSI topics.

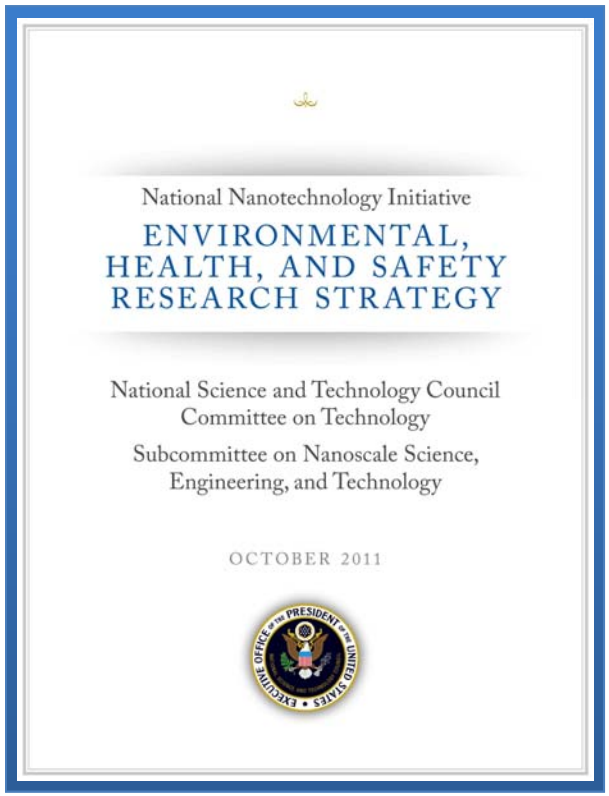
Mechanisms to incorporate industry in planning and through public-private partnerships are being developed by ISL and NILI working.

Developing the Strategic Vision for the Second Decade

2011 Additions:

- Establishes clear EHS and ELSI goals and research needs, principles for identifying high-priority nanomaterials, mechanisms for targeting and accelerating research, and a framework for implementing research programs
- Consistent with 2011 NNI Strategic Plan Goal 4, Responsible Development of Nanotechnology, includes specific objectives for EHS and ELSI

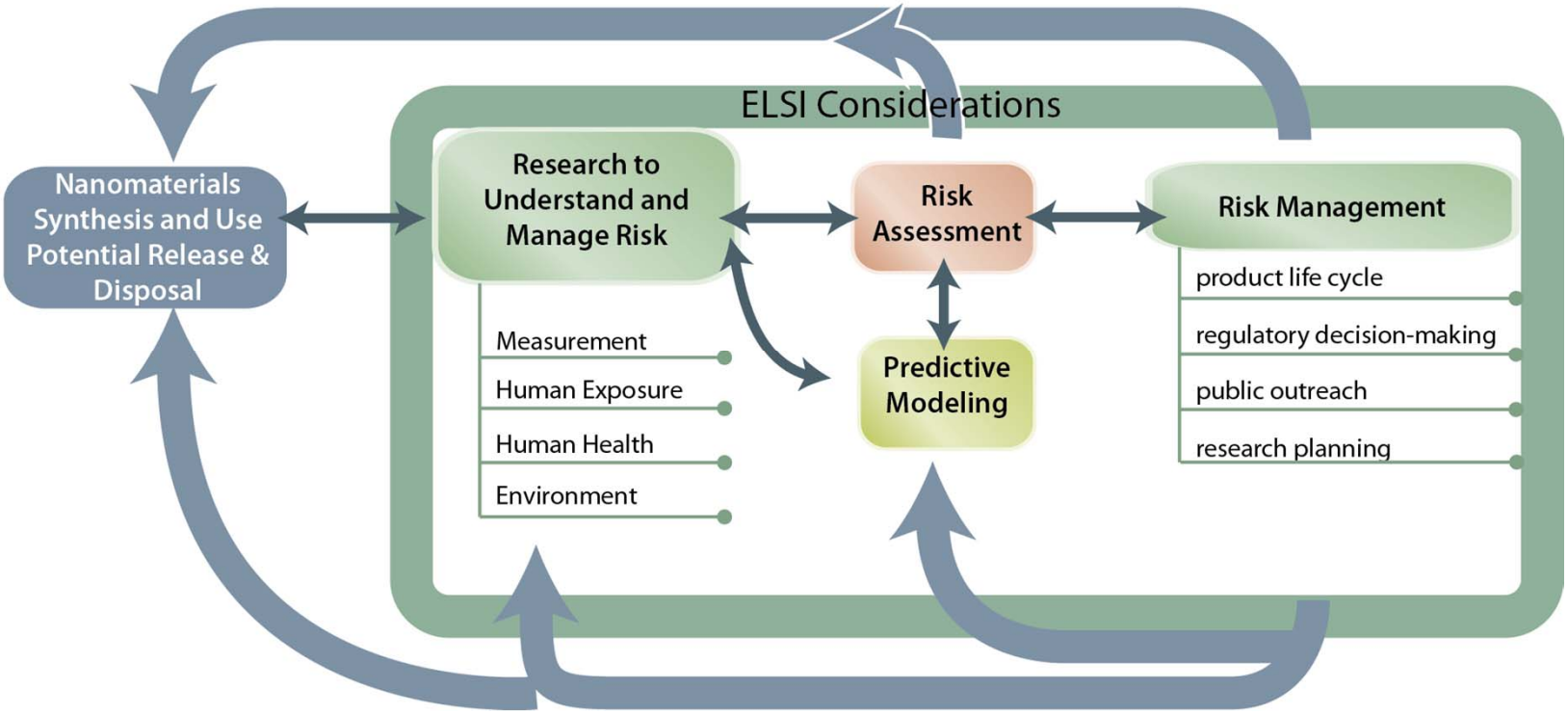




PCAST Recommendation: Risk Identification and Strategic Planning

2011 NNI EHS Research Strategy

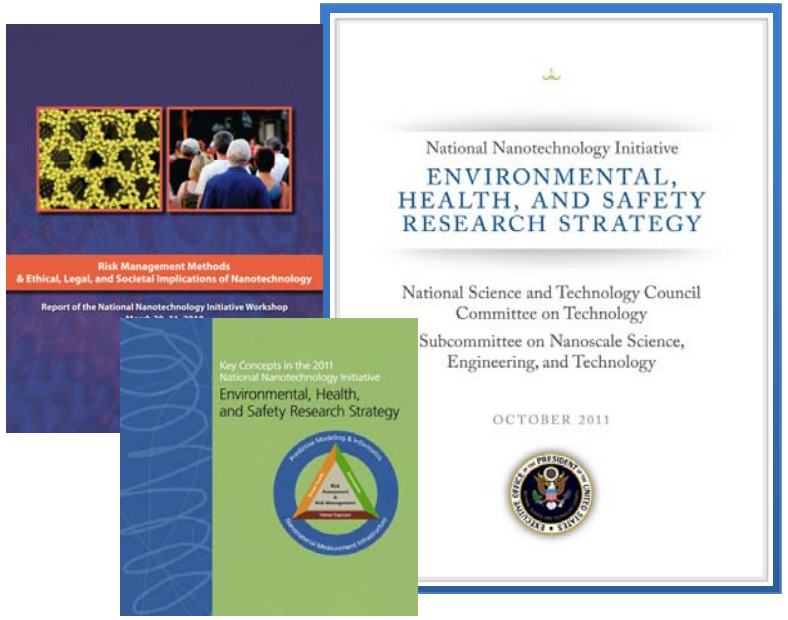
- Establishes clear principles to identify risk
- Provides cross-agency guidance that links research to knowledge gaps and decision making



EHS

PCAST Recommendation: Information Resources

- EHS issues that are relevant to businesses, health and safety professionals, researchers, and consumers



NNI reports

Webinars

@NNInanonews

NNI Dashboard @ http://nanodashboard.nano.gov

NanoTV

Facebook (*planned*)

PCAST Recommendation: Strengthen NNCO

Role of the NNCO

- Provide administrative and technical support to NSET and working groups
- Develop workshops and reports on behalf of the NSET and the NNI for use by Congress, academia, industry, and the public
- Serve as central public point of contact for NNI

Matured the technical and adr[illegible]l to be more efficient and effective

- Working more closely with NSET and working groups
- Launched the NNCO Industry and State Liaison position
- Developing a voluntary subject matter experts list to augment NNCO technical expertise
- Then-NNCO Director was designated NNI Coordinator for Standards (new assignment pending) and the NNCO Deputy Director designated as Coordinator for Environmental, Health, and Safety (EHS) Research

Develop metrics to assess the economic impact of nanotechnology

- Working through the NRC triennial review and in collaboration with OECD on metrics to assess success and best practices for evaluating economic return from R&D investments
  - Bureau of Economic Analysis is advisory to the planning team for the metrics workshop

Thank You