

NNI EHS Research Priorities and their Relationship to Risk Management Decision Support

**Terry, L. Medley, J.D., Global Director
Corporate Regulatory Affairs, DuPont
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NNI Nanotechnology Signature Initiatives

“To accelerate nanotechnology development in support of the President’s priorities and innovation strategy, NNI member agencies have identified areas ripe for significant advances through close and targeted program-level interagency collaboration. The resulting Nanotechnology Signature Initiatives are summarized as follows:”

- ◆ **Nanotechnology Applications for Solar Energy**
- ◆ **Sustainable Nanomanufacturing**
- ◆ **Nanoelectronics for 2020 and Beyond**

The National Nanotechnology Initiative
Research and Development Leading to a Revolution in Technology and Industry
Supplement to the President’s FY 2011 Budget

NNI Expenditures

- ◆ Proposed NNI budget for Fiscal Year (FY) 2011 - \$1.76 billion
- ◆ Cumulative investment since inception of NNI in FY 2001 – \$14 Billion
- ◆ NNI is increasing its investments aimed at implementing the Government's strategy for nanotechnology – related environmental, health and safety (EHS) research
- ◆ Cumulative investments in EHS research since 2005 – over \$480 million

President's Council of Advisors on Science and Technology (PCAST)

- ◆ An advisory group of the nation's leading scientists and engineers, appointed by President to augment the science and technology advice available to him from within the White House, cabinet departments and other Federal agencies
- ◆ Consulted about and often makes policy recommendations concerning the full range of issues where understandings from the domain of science, technology, and innovation bear potentially on the policy choices before the President
- ◆ Administered by the White House Office of Science and Technology Policy (OSTP)

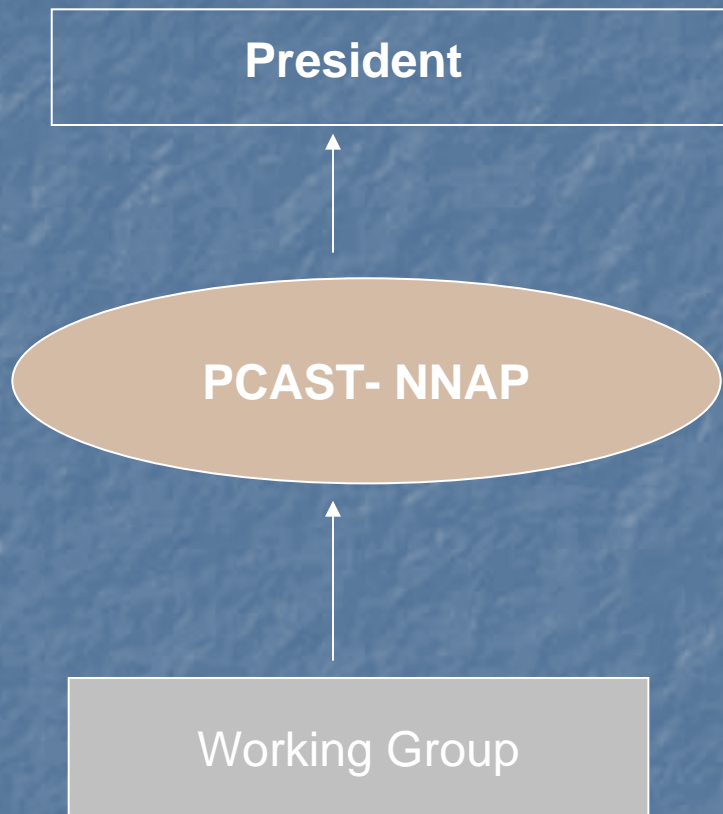
PCAST Studies

- ◆ PCAST provides advice to President on scientific and technological issues of highest importance concerning security, welfare, and health of nation
- ◆ In situations that require integrative perspective across agencies and departments, independent perspective or additional expert capacity, PCAST will:
 - Establish ad hoc working groups of experts, co-chaired by PCAST members, to provide information and advice directly to the PCAST
 - PCAST will then issue a report with its findings and recommendations based on the working group analysis
 - Goal is to complete most studies in 3-6 months or more quickly in response to Administration needs

National Nanotechnology Advisory Panel (NNAP)

- ◆ Created by U.S. Congress in the 21st Century Nanotechnology Research and Development Act which required the President to establish or designate an NNAP to review the Federal nanotechnology research and development program
- ◆ The act calls for a review of the National Nanotechnology Initiative (NNI) and report its findings to the President
- ◆ The act calls for the NNAP to report on its assessments and to make recommendations for ways to improve the program at least every two years
- ◆ In 2004, PCAST was formally designated to act as the NNAP

Role of Working Group in NNI Review



Working Group Members

- Are not members of Federal Advisory Committees
- Convened to gather information or conduct research, conduct analysis, or draft position papers
- Offer perspectives and information as individuals
- Do not work to develop consensus recommendations
- Attend teleconferences and in-person meetings
- Contribute substantively to writing of study report

Questions Mandated by Congress Under the 21st Century Nanotechnology Research and Development Act

- ◆ Trends and developments in nanotechnology science and engineering
- ◆ Progress made in implementing the Program
- ◆ The need to revise the Program
- ◆ The balance among the components of the Program, including funding levels for the program component areas
- ◆ Whether the program component areas, priorities, and technical goals developed by the Council are helping to maintain United States leadership in nanotechnology
- ◆ The management, coordination, implementation, and activities of the Program
- ◆ Whether societal, ethical, legal, environmental, and workforce concerns are adequately addressed by the Program

Last PCAST NNI Review Completed in 2008

In the April 7, 2008 report cover letter to the President, the Co-chairs highlighted the following:

“Our review shows that the NNI continues to

- ◆ **Provide effective coordination across agencies, with industry, and with other nations;**
 - ◆ **Facilitate expanding technology transfer efforts and build connections across the unparalleled innovation ecosystem in the U.S.; and**
 - ◆ **Prioritize environmental, health, and safety research that facilitates appropriate risk analysis and risk management in step with technological innovation.”**
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- ◆ **“To strengthen the NNI and bolster implementation, our recommendations include:**
 - ◆ **“Expand communication and outreach efforts, particularly with respect to real and perceived benefits and risks associated with nanotechnology;**
 - ◆ **Develop and implement standards critical for nanomaterial identification, characterization, and risk assessment; and**
 - ◆ **Coordinate strategically-guided nanotechnology environmental, health and safety research across agencies, sectors, and countries and include balanced assessments of risks and benefits in the context of specific, real-world applications.”**

NNI Supplement to the President's FY 2011 Budget

In the February 10, 2010 cover letter to the NNI Supplement to President Obama's FY 2011 Budget, John Holdren, Director of OSTP outlined the following priorities:

- ◆ **“Proposed budget for FY 2011 of \$1.76 billion bringing the cumulative investment in NNI to nearly \$14 billion.**
- ◆ **Serves to advance our understanding of nanoscale phenomena and our ability to engineer nanoscale devices and systems that address national priorities and global challenges in such areas as energy conversion and storage, and medicine**
- ◆ **NNI continued to expand its activities to assess and address the potential health and environmental implications as well as societal and ethical concerns associated with these emerging technologies**
- ◆ **NNI has been widely recognized as a leading model of interagency coordination and collaboration**
- ◆ **NNI reflects a longstanding commitment to broad-based support of closely-integrated applications and implications research to enable nanotechnology innovation in the United States that continues to set the pace for the rest of the World”**

President's Science Advisors Approve Report Calling for Collaboration on Nanotechnology-

- "encourage federal agencies to increase their collaboration on environmental, health and safety questions arising from various applications of nanotechnologies"
- "develop a cross-agency strategy plan that links environmental, health, and safety research with knowledge gaps and decision-makers' needs"

■ BNA – Pat Rizzuto 3/15/2010

Personal Reflections on NNI EHS Considerations

- ◆ Framing the EHS issue – Proactively addressing nanotech EHS
- ◆ Increased stakeholder coordination and collaboration
- ◆ Leadership and accountability
- ◆ Targeted funding
- ◆ Research to support decision making

Can we Talk?

- ◆ Australia – National Industrial Chemicals Notification and Assessment Scheme (NICNAS) Proposal for Regulatory Reform of Industrial Nanomaterials
- ◆ Canada – Interim Policy Statement on Health Canada's Working Definition for Nanomaterials
- ◆ European Union - Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR) to provide a scientific definition for nanomaterials
- ◆ Japan – Ministry of Health, Labour and Welfare (MHLW) Nanomaterials Precautionary Measures
- ◆ United States – Environmental Protection Agency (EPA) TSCA Significant New Use Rule (SNUR) for Nanomaterials and FIFRA 6(a)(2) Proposed Reporting
- ◆ Organization for Economic Cooperation and Development (OECD) WPN and WPMN - 8 subgroups, Testing Program, Alternative Methods