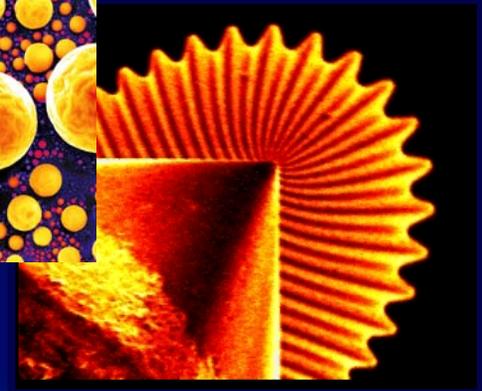
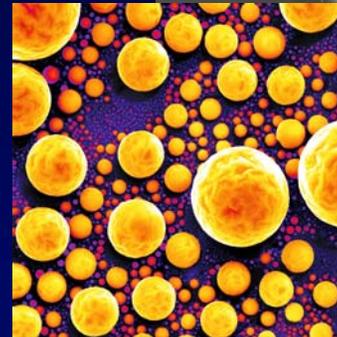


The Relationship between NIST and the National Nanotechnology Initiative

Michael T. Postek

Chief, Precision Engineering Division
and
Program Manager,
Nanomanufacturing Program
Manufacturing Engineering Laboratory

VCAT - March 6, 2007



NIST

National Institute of Standards and Technology
Technology Administration, U.S. Department of Commerce

MEL
Innovation & productivity

The NNI and Its Structure

- The NNI is a collaborative, multi-agency, cross-cut program among 26 Federal agencies
 - Enhances the development and application of nanotechnology in support of agency missions
 - Fosters interagency efforts through communication, coordination, and joint programs
- The National Science and Technology Council (NSTC) through the Committee on Technology's (CT) Nanoscale Science, Engineering, and Technology (NSET) Subcommittee oversees the planning, management, and coordination of the program
- Current NIST NSET representatives:
 - Robert Shull (MSEL)
 - Michael Postek (MEL)

NSET Subcommittee

- **Plans & Organizes to Achieve NNI Goals:**
 - Sustain world class R&D
 - Facilitate technology transfer
 - Develop infrastructure: education; workforce preparation; facilities & instrumentation
 - Support responsible development of nanotechnology

Growth of Participants in the NNI



- In collaboration with OSTP and OMB six agencies developed the 2001 NNI proposal

2001: Six Agencies

Growth of Participants in the NNI

Currently there are 26 NSET Subcommittee member agencies



2001: Six Agencies

2002: Seven New Agencies

2003-4: Four New Agencies

2005: Six New Agencies

2006: Three New Agencies

The NNI and Its Structure (cond.)

- The National Nanotechnology Coordination Office (NNCO)
 - Acts as secretariat for the NSET Subcommittee
 - Provides technical and administrative support for NSET
 - Director of the NNCO – Clayton Teague (NIST)
- 11 Federal agencies participate in a coordinated R&D budget crosscut
 - Agencies receiving NNI funding from Congress
 - NIST participates on this crosscut (Michael Postek)
- 15 other agencies participate on NSET as partners and in-kind contributors because nanotechnology is relevant to their missions or regulatory roles

NNI 7 Areas of investment (Program Component Areas)

❖ Fundamental Nanoscale Phenomena and Processes

❖ Nanomaterials

❖ NIST is the lead Agency for:

- *Instrumentation Research, Metrology, and Standards for Nanotechnology*

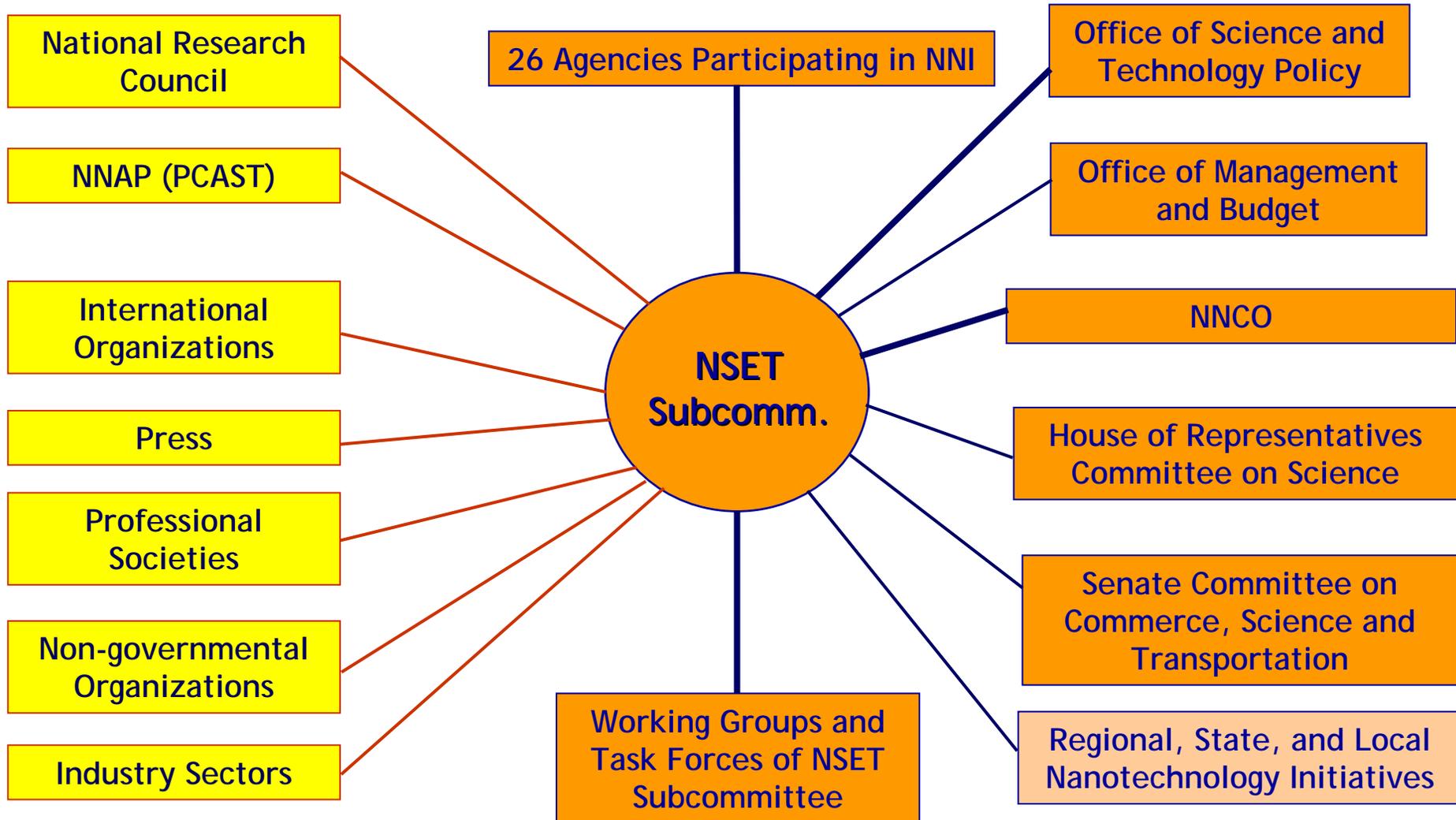
and Co-Lead with NSF for:

- *Nanomanufacturing*

❖ Major Research Facilities and Instrumentation Acquisition

❖ Societal Dimensions (EHS, ELSI, Éducation)

NSET Subcommittee Working Level Interactions



NSET Subcommittee working groups

- ❖ Working Groups have been established to promote effective interagency communication, coordination, and joint programs in nanotechnology
 - ❖ Nanotechnology Environmental and Health Implications (NEHI)
 - ❖ **John Small and Dianne Poster (CSTL)**
 - ❖ Publication of EHS Research Needs report
 - ❖ Nanomanufacturing (Postek) – IWG Workshop
 - ❖ Nanotechnology Innovation and Liaison With Industry (NILI) (Postek and Shull)
 - ❖ Global Issues in Nanotechnology (GIN) (Postek and Shull)
 - ❖ Nanotechnology Public Engagement Group (NPEG) (Postek and Shull)

Broad Brush View of NNI Operations

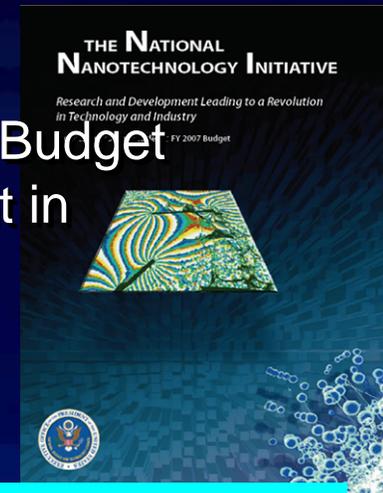
- **Management** → **EOP + Agencies**
 - Establishment of nanotechnology as high priority R&D area
 - Budget creation and funding allocation to agencies
 - Negotiations with Congress
- **Coordination** → **NSET Subcommittee**
 - Coordinates development of strategic plan for NNI
 - Providing mechanisms for interagency communication and coordination on nanotechnology R&D
- **Reporting** → **NNCO**
 - Publishes reports on behalf of the NSET and the NNI for use by Congress, academia, industry, and the public
 - Serves as public point of contact for NNI

A sampling of NSET Subcommittee Publications

Workshop Reports

Strategic Plan

Supplement to the President's FY 2007 Budget (FY 2008 supplement in process)



- NIST has contributed to all of these publications and participated in all of the NNI workshops
- Copies of all the reports can be downloaded at:

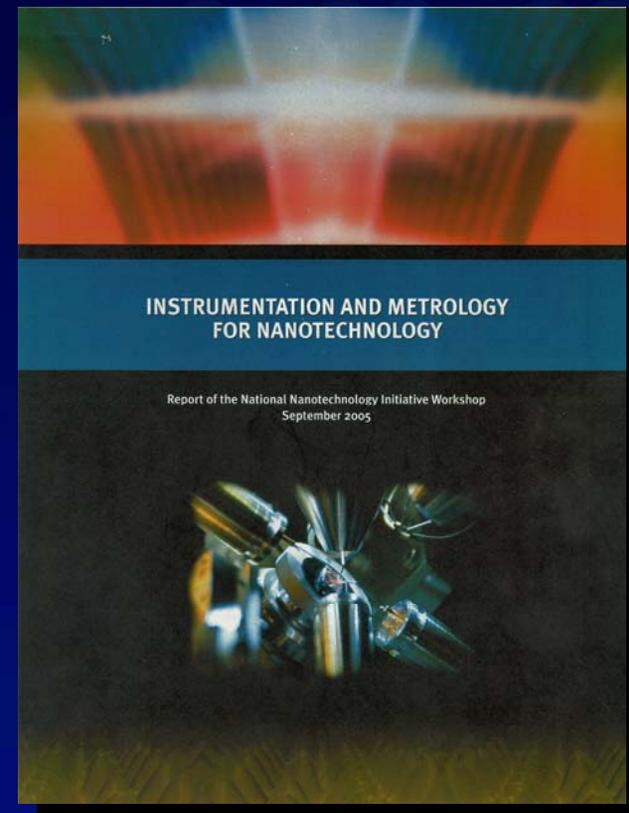
www.nano.gov



Environmental, Health, and Safety Research Needs

Grand Challenge Workshop: Instrumentation and Metrology for Nanotechnology

- The NNI Interagency Workshop on Instrumentation and Metrology for Nanotechnology Grand Challenge Workshop hosted at the National Institute of Standards and Technology campus in Gaithersburg, Maryland
- Composition: ~1/3 Industry, 1/3 Academia, 1/3 Government
- Over 250 attendees
- Report is completed and available
 - www.nano.gov



IWG Workshop:

Instrumentation, Metrology, and Standards for Nanomanufacturing

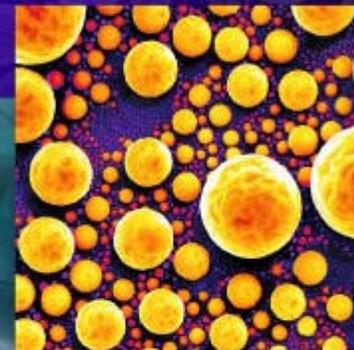
- Workshop of the National Science and Technology Council (NSTC) Interagency Working Group (IWG) on Manufacturing Research and Development (R&D)
- **Endorsed by:** Subcommittee on Nanoscale Science, Engineering, and Technology (NSET)

Sponsored by:

- The National Institute of Standards and Technology (NIST), the National Science Foundation (NSF) and the Office of Naval Research (ONR)

<http://www.mel.nist.gov/nano.htm>

Instrumentation,
Metrology,
and
Standards
for
Nanomanufacturing



Holiday Inn
Gaithersburg, MD

October 17-19, 2006

NIST
National Institute of
Standards and Technology
Technology Administration
U.S. Department of Commerce

MEL
Innovation & productivity

NIST and Nanotechnology

NIST Accomplishments in Nanotechnology

- Across NIST there were approximately 120 nanotechnology related projects that reported notable accomplishments for FY 2004-2005.

= Printed report is available

- CD
- Hardcopy



Recap ...

- Management of the NNI takes place primarily at the EOP, agency, and program level
- Coordination and strategic planning takes place primarily through the NSET Subcommittee
- Reporting is performed by the NNCO on behalf of the NSET Subcommittee and the NNI
- NNI Budget = Sum of Agency Decisions on Funding of Nanotechnology Related Programs
- NIST is and has been playing a leadership role in the NNI

The background is a deep blue gradient. On the left side, there are several overlapping geometric and organic shapes: a square with concentric squares inside, a cluster of spheres of various sizes, and a jagged, stepped geometric shape. A faint, large-scale grid pattern is visible across the entire background. The word 'Questions?' is centered in a bright yellow, bold, sans-serif font.

Questions?

n a n o t e c h n o l o g y



n a n o t e c h n o l o g y

